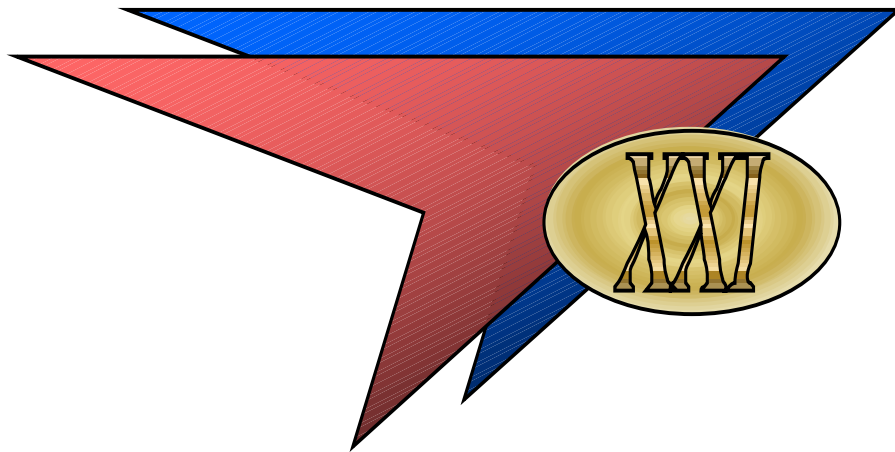**DEPARTMENT OF THE ARMY**   FM 4-93.53

FORCE
XXI

TACTICS, TECHNIQUES, AND PROCEDURES FOR THE DIVISION AVIATION SUPPORT BATTALION (DIGITIZED)

MAY 2002

DISTRIBUTION RESTRICTION: Approved for public release; distribution is unlimited.

PREFACE

This field manual (FM) provides information on the structure and operations of the division aviation support battalion (DASB) digitized. It is directed toward the commander and battle staff of the DASB, organized under the division redesign and the Force XXI division concept for CSS operations, and supported and supporting units.

This FM outlines the functions and operations of each unit within the DASB. It also tells how the DASB commander and company commanders/battle staff integrate their activities through the use of digitization on the battlefield. This integration includes both the logistics mission and the tactical responsibilities. This FM describes the many coordination links the DASB must maintain with supported and supporting elements.

This FM is based on doctrine in FM 3-0 (100-5), FM 4-0 (100-10), FM 3-100.71 (71-100), FM 3-91.3 (71-3), FM 4-93.23 (63-23), and tactics techniques and procedures (TTP) developed in STs 63-10, 63-20, and 63-30. FM 3-0 (100-5) is the Army's capstone doctrinal manual. It outlines how the Army will conduct operations. FM 100-10 is the Army's capstone CSS doctrinal manual. It provides an overview of the CSS system for supporting the Army in the field.

The proponent of this publication is Headquarters, U.S. Army Combined Arms Support Command (CASCOM). Submit changes for improving this publication on DA Form 2028 (Recommended Changes to Publications and Blank Forms) and forward it to Commander, CASCOM, ATTN: ATCL-AL, 801 Lee Avenue, Fort Lee, VA 23801-1713.

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

Field Manual
No. 4-93.53

Division Aviation Support Battalion (Digitized)

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Chapter 1

DASB Organization And Functions

The Army's Force XXI Division represents a leap forward into the realm of 21st Century technology. The smaller Force XXI Division possesses greater lethality, quicker mobility as well as the combat service support (CSS) imperative of situational understanding (SA). Real time situational understanding means a complete, common relevant picture (CRP) of the battlefield for every commander. This information enables Force XXI commanders to quickly mass forces, allowing this division to defeat a larger, but less technologically advanced enemy.

The CSS structure's capability to project, receive, and support this force will directly impact the effectiveness of future military operations. The Force XXI battlefield imposes new challenges on support functions and leaders, as it calls for independent logistical systems and procedures. Using the Force XXI's enhanced digital logistical awareness and forecasting capabilities, CSS leaders at all levels must provide the foresight and responsiveness necessary to anticipate and maintain the division's operations tempo (OPTEMPO). Force XXI logistics will require new organization, new doctrine, as well as advanced distribution equipment and information technology.

The concept and organizational structures found in this document reflect a paradigm shift from a supply-based CSS system in Army of excellence (AOE) to an advanced distribution-based CSS system for Force XXI. Technology enhances this capability.

A distribution-based logistics system combines situational understanding capabilities with efficient delivery systems to form a seamless distribution pipeline. This pipeline represents "inventory in motion" and the CSS imperative of increased velocity. In contrast, static inventories comprise the current AOE supply-based system. Storing this static inventory, in large stockpiles at each echelon does not provide the mobility or flexibility required by the Force XXI maneuver commander. The Force XXI distribution-based system eliminates most stockpiles; substituting speed for mass. Logisticians control the destination, speed, and volume of the distribution system. With intransit visibility (ITV), total asset visibility (TAV), advanced materiel management, and advanced decision support system

technology, Force XXI logisticians will have access and visibility over all of the items within the distribution pipeline. This visibility allows logisticians to redirect, cross-level, and mass CSS assets more effectively in support of the maneuver commander's intent. The distribution-based systems gain speed through greater efficiency. Direct throughput from theater and corps to the brigade battlespace is the rule rather than the exception with distribution-based logistics. Throughput distribution bypasses one or more echelons in the supply system to minimize handling and to speed delivery to forward units. Supplies are tailored and packaged for specific supported units based on a specific time and location point of need, synchronized through support operation channels based on the combat commander's OPTEMPO. Advanced delivery platforms such as the palletized load system (PLS) and the container roll in/roll out platform (CROP), will use ITV/TAV to deliver directly from echelons above division (EAD) to points as far forward as possible. Extensive use of "hub and spoke" transfer nodes will reduce transportation and material handling requirements.

Multi-functional, modular units in direct support of the combat, combat support, and combat service support units form the cornerstone of this concept and represent the CSS imperative of an agile CSS force structure. Force XXI battlefield CSS operations will provide support as close to the point of need as possible. A common relevant picture coupled with information from the global combat support system-Army (GCSS-Army) will allow the Force XXI CSS commander to anticipate requirements and project support further forward than ever before. Division CSS organizations will be modular, mobile, and multi-functional. They will be adaptable to support force projection and velocity of combat operations in both linear and non-linear environments.

The creation of multi-functional logistics companies within the Force XXI FSB consolidates CSS organizational elements currently embedded within the AOE maneuver battalion with the direct support (DS) capability currently in the AOE Forward Support Battalion. Personnel and other soldier-related support functions including manning, sustaining soldiers through religious, legal, command information support, and funding through finance and resource management support are generally unaffected.

The consolidation of all classes of supply and maintenance within the forward support and base support companies serves as an example of enhanced efficiency and effectiveness. Modular, multi-functional

logistics companies and logistics command and control (C2) in direct habitual support allow the maneuver commander to focus on his core missions.

One of the nine principles of war described in FM 3-0 (100-5) as "…directing and coordinating the action of all forces toward a common goal or objective" is unity of command. Although "…coordination may be achieved by cooperation; it is best achieved… by vesting a single commander with the requisite authority to direct and to coordinate all forces employed in the pursuit of a common goal", such as combat service support.

Combat service support imperatives, principles, and characteristics will be discussed after the following description of the DASB's organization and functions.

DASB ORGANIZATION AND FUNCTIONS

1-1. The multifunctional DASB provides DS to the aviation brigade (AB) and the division cavalry squadron. The DASB may function in a highly dispersed manner, with some DASB elements close to the attack units and others near the brigade rear area. The DASB commander is the brigade commander's senior CSS operator. His battle staff manages and monitors sustainment through an array of digital information systems and other technological innovations. The DASB provides, or coordinates for all logistical support, and ties together the entire spectrum of supplies and services for the aviation brigade.

1-2. The maneuver commander, however "unencumbered", must be involved in synchronizing the maneuver of the DASB and its subordinate companies and attached elements with inbound shipments from echelons above division and brigade. The use of assured communications, digitization of all CSS echelons, digitization of battlefield distribution (BD) platforms, and lastly modular organization structures, give the DASB commander and brigade S4 the information dominance needed to tailor the CSS support package. Through real-time situational understanding, the brigade battle staff is able to make up-to the-minute adjustments in its support requirements. The widespread use of enablers on the battlefield allows the DASB battle staff to anticipate changes in requirements and rapidly redirect assets or, if necessary, have a surge capability to provide seamless CSS to all levels of the AB.

1-3. The DASB supports the AB and the division cavalry squadron by providing or coordinating all classes of supply and maintenance. The DASB can function in a dispersed manner to support the

division cavalry squadron or AB when they are operating forward. The DASB may attach aviation and ground maintenance teams and fueling assets forward to augment the FSB, who then provide area support to the division cavalry squadron. The DASB does not have any combat health support (CHS) capabilities. Based on mission, enemy, terrain, troops, and time available and civilians (METT-TC), combat health support is provided by either the DSB or FSB medical companies to the DASB, AB and division cavalry squadron. The DASB contains a headquarters and supply company (HSC), a ground maintenance company (GMC), and an aviation maintenance company (AMC) (see Figure 1-1). The DASB maintains one day of operational fuel requirements for the AB, division cavalry squadron and the DASB.
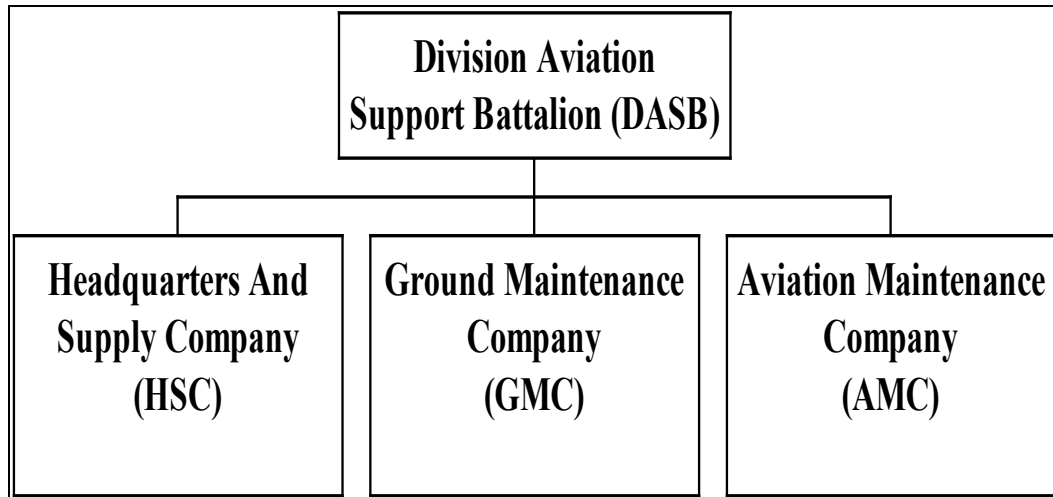
Figure 1-1. Division Aviation Support Battalion

1-4. The HSC consists of a battalion headquarters and a supply company. The battalion headquarters provides command, control and administration support for all organic and attached DASB units. The battalion headquarters plans, directs, and supervises support for the AB and division cavalry squadron. The supply platoon provides receipt, issue, and limited storage of Class II, III(P), IV, and IX (common and air) items in support of the AB and division cavalry squadron. It also receives and issues Class I and VI at the field ration issue point, and receives and issues Class VII as required. The supply platoon maintains the standard army retail supply system (SARSS-1) or global combat support system-Army (GCSS-Army). The Class III/V platoon provides bulk Class III and Class V support to its customers. It also operates a division rear aircraft refuel point for divisional and medical evacuation

(MEDEVAC) aircraft. The company also provides food service support for units organic and attached to the DASB.

1-5. The GMC consists of a company headquarters, a battalion maintenance platoon, and a direct support maintenance platoon. The GMC provides unit maintenance for all DASB non-air items and direct support maintenance for all AB, and division cavalry squadron non-air items, including track, turret, missile, automotive, communications-electronics, engineer, utility, power generation, and small arms.

1-6. The AMC company provides aviation intermediate maintenance to the division's aviation brigade, the division cavalry squadron, and corps medical aircraft operating in the division area. The AMC provides intermediate level avionics maintenance support, aircraft airframe, power plant, armament, and component repair. The Army MaterialCommad's mobile maintenance support teams perform AVIM forward, and provide forward repair/recovery teams that perform on-site technical assistance. They can also provide backup aircraft recovery, retrograde of repairable aviation equipment by ground, and coordination for air recovery backup and rigging capability for recovery of supported aircraft. The AMC provides maintenance test flight evaluator support to supported aviation unit maintenance (AVUM) units. The AMC will form a collection and classification point for aircraft peculiar materiel and provide fueling and defueling service for supported aircraft while in the AMC. This unit performs unit maintenance on all organic equipment, except communications-electronics (CE) and communications security equipment.

1-7. The DASB is dependent for medical support on the area support medical company of the division support battalion, or the forward support medical company of the forward support battalion

FORCE XXI CSS IMPERATIVES AND PRINCIPLES

1-8. Force XXI CSS imperatives and principles meet Force XXI challenges by incorporating advanced information and transportation technology, streamlined CSS organizations, and a shift from the AOE supply-based CSS system to a distribution-based system. Force XXI CSS principles hinge on four integrated imperatives:

- Unity of command.
- Increased velocity.
- An agile CSS force structure.
- Situational understanding.

1.9. Force XXI CSS principles incorporate the **unity of command** imperative by centralizing distribution management and

establishing a single CSS operator as the focal point for CSS operations at each echelon. Unity of command for CSS facilitates the cross leveling, re-directing, and massing of CSS assets within and between echelons, and is an essential element of the distribution-based concept. The following key Force XXI principles relate directly to the unity of command imperative. Each Force XXI principle is followed by a definition and then a brief description of the principle:

- Single CSS operator.
  - The single CSS element at each echelon serving as the focal point for CSS; providing unity of command and effort; and providing centralized distribution management for CSS operations.
  - The single CSS operator provides centralized distribution management and the CSS assets required supporting its designated maneuver unit. This single CSS operator is responsible for establishing unity of effort; providing and/or coordinating CSS surge capability where required to support the maneuver commander's intent. The single CSS operators designated for each echelon are:

Echelon	Single CSS Operator
Maneuver Battalion	Forward Support Company (FSC)
Maneuver Brigade	Forward Support Battalion (FSB)
Division	Division Support Command (DISCOM)
Corps	Corps Support Command (COSCOM)
Theater	Theater Support Command* (TSC)

* Army Theater CDR's decision

- Surge capability.
  - The capability to mass CSS resources at a point and time on the battlefield to weight the battle logistically by maximizing combat power at the decisive point as determined by the supported commander. Surge capability is enabled by flexible, modular organizational capabilities and by fused logistics and operational information. Surge capability may often be employed to mass tailored CSS resources as various supported units pass through the different stages of the halt, move, combat continuum.

- Unity of command for CSS enhances CSS surge capability. Combat service support commanders may, for example, surge maintenance assets to meet priority readiness, surge fuel assets prior to a counter-attack, or surge other commodities to make up for disruption in the lines of communication from corps. In practice, at the tactical level, a forward support battalion commander may, because he has centralized command and control over the brigade's CSS assets, compensate for anticipated or realized shortfalls by cross-leveling or redirecting idle or under-utilized assets from other forward support company's (FSCs). He may direct other units within the FSB to a different FSC if CSS requirements exceed an individual forward support FSC's capabilities. If additional required support is not available at the brigade level, the FSB commander may call upon higher echelons within the CSS command and control structure for support. Higher echelon CSS commanders enjoy the same surge capabilities with centralized command and control over CSS assets.

- Centralized distribution management.

- A single distribution manager at each echelon that leverages information technology to coordinate, prioritize, and synchronize material management and movement control operations to maximize the distribution pipeline's capability to throughput units and follow-on sustainment.

  - Centralized distribution management is essential to efficient and effective distribution system operations. It involves the integrated end-to-end visibility and control of the distribution system capacity and CSS pipeline flow by distribution managers at each echelon. Under a distribution-based CSS system, designated distribution managers at each CSS echelon manage distribution operations, and coordinate and synchronize CSS flow in accordance with the commander's priorities to maximize the throughput to units and follow-on sustainment. The distribution manager has functional oversight of the synchronization of materiel management, maintenance, and movements control center operations at each echelon. Distribution managers at each echelon have the asset and intransit visibility required to optimize the distribution system within their echelon. Advanced information systems such as the movement tracking system (MTS), the global combat support system-Army (GCSS-Army), the combat service support control system (CSSCS), and advanced planning and optimization (APO) decision support tools provide this capability. The visibility over the CSS pipeline, coupled with the APO decision support tools, allows distribution managers to direct or divert assets enroute, and shift assets quickly in order to

meet changing distribution requirements. Centralized distribution management gives the commander the ability to quickly and effectively influence the distribution system. Centralized distribution management relies extensively on situational understanding for success.

1-10 **Increased velocity** refers to the time required to move supplies, equipment, and capability from the strategic base through the distribution system to the end user. Time is critical for a force projection Army. Increased velocity has made reductions in the CSS battlefield footprint, in terms of personnel, equipment and supplies possible. The increased velocity concept relies on effective command and control provided by unity of command coupled with situational understanding. The following key Force XXI principles relate directly to increased velocity.

- Distribution-based CSS.
  - A distribution-based CSS system leverages advanced planning and optimization (APO) tools to forecast requirements, plan and control distribution operations, obtain visibility of intransit stocks, combined with limited stocks at storage locations, and velocity and speed of distribution to support and sustain Army operations.
  - Distribution-based CSS leverages information, force structure designs, technological enablers, and command and control relationships to move the Army away from its traditional dependence upon echeloned stockpiles to a system capable of delivering the "right stuff, at the right time, to the right location". This ability, combined with increased speed of movement and responsiveness throughout the system, will allow the Army to eliminate the large "just-in-case" stockpiles we have relied on in the past. However, distribution-based CSS does not eliminate the need for or the use of stockpiled inventory. Distribution-based CSS uses anticipation and visibility of the inventory moving through the distribution pipeline, in effect making the distribution pipeline into another warehouse, to limit, but not eliminate, stockpiled inventories.
- Throughput to forward areas.
  - Leveraging configured loads, containerization, information, force structure design, technological enablers, and C2 relationships to deliver sustainment from the operational level directly to the customer or its direct support unit; bypassing intermediate, general or direct support units.
  - Whenever possible, national strategic-level CSS elements will use throughput to prepare resources for direct, time definite delivery to a supply support activity (SSA)/tactical assembly area (TAA) in an area of operations (AO). Throughput distribution bypasses one or more echelons in

the supply system to minimize handling and speed delivery forward. A distribution-based CSS system emphasizes the use of containerization (within material handling equipment (MHE) constraints), to include palletization and packaging, to accommodate the AO and improve velocity. Velocity is achieved by the throughput of resources from the sustaining base to tactical-level support organizations. Direct throughput relies on unity of command and situational understanding.

- Minimize load handling.

  - Leveraging configured loads, containerization, information, force structure design, technological enablers, and C2 relationships in order to reduce the number of times sustainment is handled by multiple echelons and support units between the strategic provider and the ultimate customer.

  - In Force XXI, our goal is to minimize material handling, trans-loading and storage requirements to improve velocity throughout in the distribution pipeline. New transportation technology such as the palletized loading system (PLS), load handling system (LHS), container roll-in, roll-out platforms (CROP), and the "slip sheet" significantly reduce handling requirements over break-bulk methods. For example, with full off road capabilities, and no MHE requirements for loading or off loading flatracks of supplies, both the PLS and LHS are capable of delivering configured loads directly from echelons above division to the end user without any trans-loading or materiel handling requirements.

- Configured loads.

  - A configured load is a single or multi-commodity load of supplies built to the anticipated or actual needs of a consuming unit thereby facilitating throughput to the lowest echelon, METT-TC dependent. Whenever and wherever possible, configured loads will leverage the efficiencies of containerization and capabilities of CROP platforms. Configured loads are not, by definition, combat loads or basic loads though it is likely they may contain individual items that comprise all or part of either. There are three types of configured loads: Strategic configured loads (SCL), mission configured loads (MCL), and unit configured loads (UCL).

  - Configured loads of all types are an essential element of distribution-based logistics. Successful implementation of configured loads requires situational understanding and the ability to make appropriate forecasts at various points

on the planning time continuum. The intent of configured loads is to: a) increase throughput; b) minimize handling; c) reduce footprint; and d) physically speed the flow of supplies to the consumer. The types of configured loads, their purpose and uses are described below:

⇒ SCL: A configured load built outside of the theater of operations in CONUS, or sanctuary, to anticipated requirements of a consuming unit. Strategic configured loads leverage the robust capabilities of the sustaining base to conduct resource intensive configuration missions thereby minimizing the logistics footprint in a theater of operations that would otherwise be required to perform those missions.

It is essential that these loads be configured to suit the needs of the consuming unit and not merely for the convenience of the source of supply or the distribution system. Typically, SCLs will not be built for a specific named unit or destination but rather for a "type unit" conducting a particular "type" mission (e.g. armor company attack or an engineer battalion supporting a brigade movement to contact) in the theater of operations. In addition, replenishments for consolidated SSAs should be SCLs in which case the loads are configured to meet the combined expected demands of that corps supply support activity's (CSSA's) customers. This replenishment philosophy is applicable to any commodity.

The distribution manager at the operational level uses information in the operational plan (task organizations, phases, postures, etc.) to anticipate the quantity and type of SCLs that are likely to be required throughout the planning process. These demands are communicated to the sustaining base with sufficient lead time to maximize the use of strategic sealift. The requirements are continuously updated as the operations plan changes over time. As SCLs near the theater of operations, predominantly by sea, the distribution manager at the operational level leverages current situational understanding to assign destinations to the SCLs in order to facilitate rapid port clearance.

In most cases, because of their anticipatory nature, SCLs can not exactly meet a consuming unit's requirement but rather satisfy the unit's needs to a reasonable confidence level. Accordingly, SCLs can not be the sole source of replenishment for most customers. Also, there will need to be some consideration for retrograde and reconfiguration of unused SCL components which will be addressed

later. Consumption and equipment usage data must be collected over time to continuously obtain information with which to make more accurate forecasts of SCL configurations and requirements.

⇒ MCL: A configured load with all of the characteristics of a SCL except that it is built inside a theater of operations for a specific mission, unit or other purpose (e.g. an artillery raid, emergency resupply, etc.). A MCL will normally be configured using resources (personnel, equipment and supplies) found in a hub in the corps or theater area. Occasionally, a MCL may be configured from retrograded materiel not consumed from a previously distributed SCL (doing so may reduce the demand for SCLs in the strategic pipeline). It will not normally be configured from one or more SCLs.

⇒ UCL: A configured load built to the known requirements of a consuming unit. These loads are normally built in a corps forward hub for a specific FSC to deliver directly to the consuming unit. Unit configured loads are built in response to actual requisitions or as determined by the FSC support operations officer as materiel needed to satisfy immediate requirements (e.g. Class IX for a CRT or Class I for the FSC to prepare meals). Typically a UCL will form the basis of a scheduled delivery LOGPAC that may consist of some combination of SCLs, UCLs and the UCL including bulk fuel and water.

- Scheduled delivery.
  - A fundamental distribution planning parameter established as a component of each echelon's distribution plan. Scheduled delivery involves the movement of sustainment from the supporting organization to the supported unit at agreed upon time intervals.
  - Distribution managers at each echelon, in concert with the supported unit, will establish scheduled delivery times for routine replenishment. The quantity delivered must be tailored as much as possible to only that which is needed by the supported unit and should not exceed it in order to ensure support to other units and optimize delivery resources. Typically, the quantities of each delivery will differ based upon the supported units' OPTEMPO and distribution system's ability to respond. Generally, this would include "push" items such as Class III(B) and Class V. Items that the maneuver unit requests may also be sent on scheduled delivery runs, provided time definite delivery standards (see time definite delivery below) are achieved. Scheduled deliveries may be established for

individual commodities, such as for bulk POL and operational rations. For example, the scheduled delivery to a DSB from the corps support group (forward) might be 0600 and 1800 hrs daily. Scheduled deliveries facilitate scheduling main supply route (MSR) utilization, receiving operations at the supported unit, and synchronization of effort throughout the distribution system.

- Time definite delivery (TDD).
  - A fundamental distribution planning parameter, established as a component of each echelon's distribution plan, TDD establishes order ship time (OST) within which specified commodities requested by the supported unit must be delivered. Additionally, it deals with the consistency the distribution system delivers given resources within established OST, and serves as the metric to measure the distribution system's performance.

  - Time definite delivery is a commitment between the CSS manager and the supported commander and specifies OST within which specified commodities requested by the supported unit must be delivered. The CSS manager recommends these OSTs, based on METT-TC, for the supported commander's concurrence. The commander responsible for both the supporting and supported organizations establishes the TDD as a part of the overall distribution plan. Different TDD parameters for a specific commodity may be established for different customer units as deemed appropriate by the commander. For example, the corps distribution plan establishes the TDD parameters within which corps will deliver each major commodity to its customers, the FSBs as an example. The division distribution plan would establish TDD parameters for deliveries from division support units such as the DSB to supported units such as the ADA battalion.

  - Time definite delivery parameters are normally expressed in terms of hours or days for each major commodity. Establishing these OST involves making trade off between responsiveness, i.e., time and speed, stockage levels, and the length of lines of communication. If the commander wants to establish shorter TDD schedules, he will have to accept larger stockage levels forward on the battlefield and/or shorter lines of communication, with an inherent loss of flexibility and battlefield agility. However, if the commander is willing to accept longer TDD schedules, he will enjoy the greater flexibility and battlefield agility that comes with fewer stocks forward and/or longer lines of communication. Another example is the TDD for bulk Class III(B) resupply from corps to a FSBs logistics release point (LRP) which has been established as 18 hours. Corps established this specific TDD parameter

based upon the corps commander's operational plans, METT-TC situation and constraints, the supported unit's requirements and desires, and overall corps concept of support. If the FSB requires a Class III(B) delivery other than its normal scheduled delivery, the FSB's commander and planners know that they can expect delivery within 18 hours of their request and plan accordingly. TDD is directly linked to both situational understanding and an agile CSS force structure.

1-11. **An agile CSS force structure** is one that has a relatively small footprint, and does not encumber the maneuver commander with large stockpiles of supplies or large numbers of combat service support personnel on the ground. The key to agility is to place on the ground only those CSS assets that are truly needed; no more or no less. The following key Force XXI principles relate directly to an agile CSS force structure:

- Modular design.
  - A force structure design parameter used by TRADOC force designers to create company level force structure designs wherein each major company sub-element possesses a cross section of the total company's capabilities, thus enhancing the commander's ability to tailor CSS force structure to the mission and requirements.
  - When a sub-element of a company design is modular, it has the C2 and support structure organic to it, or readily available from the parent company, to deploy alone into a theater and stand alone, or plug into a headquarters already in theater. Modular functional or multi-functional companies with modular multi-functional platoons, teams or sections, when used to create tailored force packages (see tailorable force packages below) can reduce the CSS footprint in an area of operations.
- Tailorable force packages.
  - An operational planning consideration where CSS organizations and units are customized through the use of modular units and sub-units (platoon, team or section) to produce the required CSS capabilities without adding unnecessary, redundant, or non-value adding units, sub-units, or elements to the task organization.
  - The operational commander uses the modular force structure at his disposal to create CSS force structure tailored to meet the commander's requirements at each echelon without burdening the commander with unnecessary CSS force structure. For example, an early entry CSS company sized task force might be tailored using a platoon from a cargo transfer company, a platoon from a medium truck company, and a platoon from a

quartermaster supply company. Each platoon would bring with it a slice of the appropriate support structure from its parent company in order to sustain itself.

▪ Split-based operations.

▪ Leveraging force structure designs, advanced automation, information, and communications capabilities to enable a unit to perform its mission in support of the warfighter with a small forward element deployed to the theater of operations, while the balance of the unit remains outside of the theater of operations in a sanctuary area.

▪ Split-based operations occur when a function is performed through coordination between elements working in theater and elements working out of the theater. Split-based operations are ideal for management and command and control organizations that do not have to be in theater to perform their function. New information and communications technology makes split-based operations possible. For example, a corps level materiel manager does not have to be in theater to perform his function. Corps materiel managers could process requests sent back to CONUS from the theater. Communications and information technology would allow this material manager to cut a release order and send it to a SSA within theater. Split-based operations capabilities can significantly reduce CSS force structure within the theater of operations.

• Contractors on the battlefield.

▪ Leveraging contractors to bridge the gap between required capabilities and actual force structure availability within the theater of operations. Contractors may be employed, subject to METT-TC, throughout the AO and in virtually all conditions. Contractors are categorized in FM 100-10-2 contracting support on the battlefield as:

⇒ Theater Support Contractors: Theater support contractors support deployed operational forces under pre-arranged contracts or under contracts awarded within the mission area, by contracting officers serving under the direct contracting authority of the theater principal assistant responsible for contracting (PARC). Theater support contractors provide goods, services, and minor construction, usually from the local vendor base, to meet the immediate needs of operational commanders.

⇒ External Support Contractors: External support contractors provide support to deployed operational forces that is separate and distinct from either theater support or systems contractors. They may be pre-arranged contracts or contracts awarded during the contingency itself to support the mission. Contracting

officers who award and administer external support contracts retain unique contracting authority deriving from organizations other than the theater PARC or systems offices under program managers (PM) or Army materiel command (AMC).

⇒ System Contractors: Systems contractors support deployed operational forces under pre-arranged contracts awarded by project managers (PMs) and Army Material Command (AMC). They support specific materiel systems throughout the system's life cycle during both peacetime and contingency operations. The systems include, but are not limited to, weapons systems, aircraft, command and control infrastructure, and communications systems.

- Lessons learned from military operations throughout our history indicate that contracting and outsourcing can be effective force multipliers. Contracted capability can extend existing Army capabilities and provide alternative sources of supplies and services. Use of contractors may reduce the personnel, equipment, and supplies that must be deployed to support a specific operation. Contractors do not replace force structure. They augment Army capabilities and provide an additional option for meeting support requirements. To the extent they are used, they will be incorporated into the force structure as force multipliers, but they will not displace military assets within that force structure. Their use may reduce the size of the Army force required to support a specific operation, but they will not permanently replace force structure.

• Replace forward/fix rear.

  - Replacing line replaceable units (LRUs) or modules instead of attempting to repair the LRUs or modules by leveraging advanced prognostic and diagnostic tools, support equipment, and training. The LRUs or modules are then retrograded to higher levels of maintenance for repair and return to the distribution system.

  - Force XXI field maintenance operations are characterized by lean, modular, and enabled maintenance units focused on maximizing combat power. The velocity at which future field maintenance operations must be performed, Force XXI distributed operations, the capabilities of battlefield distribution, and expected gains in diagnostics and prognostics facilitate our ability to fix equipment forward through the replacement of LRU or component assemblies.

    Replace forward means a soldier performs "on system" maintenance. "On system" refers to replacing components or sub-components at the point of repair,

breakdown site or unit maintenance collection point (UMCP). Maintainers normally diagnose down to the major component failure. He then replaces that component and returns the system to operational condition. Based on METT-TC, the soldier may diagnose and replace sub-component items depending on the availability of tools, parts, and time. An example of a replace function would be the replacement of a full-up power pack (FUPP). If a serviceable FUPP is available, the maintainer replaces the major assembly. If the FUPP is not available, the maintainer might swap out a serviceable engine from an unserviceable FUPP with a bad transmission.

Repair rear means that soldiers perform "off system" maintenance. "Off system" refers to those actions taken to return components and sub-components of weapon systems to serviceable condition. These repair actions take place at designated places throughout the battlefield. Corps maintenance units may have the capability to repair certain LRUs and/or assemblies for major weapons systems they support. Corps component repair companies or special repair activities in the corps or theater area repair other components and assemblies as determined by sustainment maintenance managers. A repair function at the corps or theater level would be the rebuild of a tank engine or other major assembly.

- Multi-capable maintainer (MCM).
  - A mechanic trained to perform organizational and direct support level maintenance on the M1 Abrams tank and the M2/3 Bradley fighting vehicle system (BFVS). This mechanic has a broad, but shallow range of skills designed to enable him to replace LRUs or modules to rapidly return a vehicle to mission capable status.
  - This concept supports the concept combined organizational and direct support maintenance by providing maintainers capable of performing both the organizational level tasks as well as the on-board direct support level tasks on the M1 Abrams tanks and the M2/3 BFVS. It maximizes the FSC's ability to provide field maintenance to the maneuver battalion and reduces inefficiencies apparent with the separation of the organizational and direct support levels of maintenance. As a result of the implementation of Abrams and Bradley systems mechanics, maintenance on wheeled vehicles,

M113, M981, M88, and MLRS performed by the 63E, 45E, 63T, and 45T have been realigned to MOS 63B/S, 63Y, or 45K as appropriate.

- Combination of organizational/DS maintenance.

    - Unifying organizational and direct support (DS) level maintenance responsibilities and capabilities into one organization, the Division XXI FSC, to focus maintenance leadership, management, technical expertise, and assets under a single CSS operator ensuring maintenance can be planned, allocated, and swiftly executed when and where needed to satisfy the commander's requirements.

    - Efficiency in maintenance management and effectiveness of maintenance operations are maximized when unit and direct support maintenance operations are collapsed into one level. This concept eliminates the loss of time and loss of job continuity associated with the transition of unit level job orders to DS job orders and vice versa. Consolidated maintenance enables a greater capability to dispatch more effective maintenance capabilities forward because of centralized control over and access to more capabilities. The concept pools maintenance assets under a single CSS operator for maintenance, the maintenance control officer (MCO). It also brings together maintenance leadership and management such that maintenance support is planned, resourced, executed when and where needed, with a unified focus, in support of a common mission and objective Enablers such as the MCM, forward repair system (FRS), and advanced diagnostics and prognostics give the combat repair teams (CRTs) the ability to execute this concept. The CRTs have the right people, with the right tools and test equipment to provide field maintenance forward on the battlefield and rapidly return combat systems to the fight.

1-12. **Situational understanding** refers to the logistician's complete picture of the friendly situation, the enemy situation, and the CSS situation through the use of advanced, seamless information technology. The following key Force XXI principles relate directly to situational understanding:

- Common operating picture.

    - Ability to view the same logistics and operational data at all echelons in near real time to provide commanders and logistics managers the identical battlefield picture.

    - Leveraging force structure designs, advanced automation, information, and communications capabilities to fuse

operational and logistics data to create a common operating picture of the battlefield, both tactically and logistically, for commanders and logisticians at all echelons from the tactical to the strategic level, which in turn facilitates optimal logistical operations. Commanders and distribution managers at all levels must have access to the same information at the same time in order to have unity of command and unity of effort. The Force XXI seamless information network combined with intransit visibility and integrated standard army management information systems (STAMIS) provides a common operating picture.

- Intransit visibility.
  - Leveraging advanced automation, information, and communications capabilities to track cargo and personnel while enroute from origin to destination.
  - Visibility is the most essential component of distribution management. In fact, distribution managers dedicate most of their work to gaining and maintaining visibility of all the various assets, processes, and capabilities throughout the distribution pipeline. Why is visibility so important? As summarized from FM 100-10-1, "Visibility is a positive indicator that the distribution pipeline is responsive to customer needs." Experience has shown that Army leaders must be confident in the supporters ability sustain them. Timely and accurate visibility information provides logisticians necessary information to distribute assets on time thus maintaining high confidence levels. Visibility is based on a continuum of CSS data from the sustainment base into and through the distribution processes of the distribution system (factory to foxhole). Visibility must begin at the point where materiel starts its movement to the theater of operations, be that a depot or commercial vendor or a storage facility in another theater or war reserve stockpile. The information must be digitized and subsequently entered into the necessary CSS information systems. The next critical element to visibility is the capability to dynamically update that source data with updates from subsequent CSS systems as to the transport, storage, maintenance, or supply status of that particular item/shipment until it is received at the ultimate consumer location. The information must be accessible to all users regardless of the service or echelon of command requiring the data.

- Integrated STAMIS.
  - The consolidation of previously separate, such as stovepiped, functional information systems into a single common operating environment (COE) that allows common usage of information between functions.

- An integrated STAMIS is defined as one that incorporates multiple types of functionality within a single system and can share database information between functionalities. Global combat support system-Army is an example of an integrated STAMIS; designed to include the functions of manning, arming, fixing, fueling, moving, and sustaining. The system will establish interfaces with other CSS automated systems in order for users to have access to the maximum amount of information with the minimum amount of data entry. The GCSS-Army's management module will act as the data warehouse and will work to tie the integrated STAMIS together.

- Seamless information network.

  - The ability to autonomously exchange large volumes of information across data platforms such as GCSS-Army and CSSCS, and between multiple echelons of command from the tactical to the strategic level.

  - A seamless information network is defined as an autonomous data exchange between systems and levels of command. It provides the fusion of operational and CSS data. A seamless information network provides the common operating picture and intransit visibility (ITV) that makes distribution-based CSS operations and split-based operations possible. It also enhances the security of CSS assets by providing situational understanding of the enemy situation and friendly situation across levels of command as well as across battlefield operating systems.

- Near real time (NRT) information.

  - The ability to autonomously exchange large volumes of information within an information network as the data is created at the point of origination.

  - Near real time refers to the ability to capture events in the information network as they are happening; providing the logistician the capability to act almost immediately to the changing situation.

CSS CHARACTERISTICS

1-13. A changing environment has diminished the probability of a prolonged, large-scale conventional war. However, the potential for numerous global actions on a smaller, regional scale has increased. At the same time, available resources are declining.

1-14. In response to these changes the Army has become a force projection rather than a forward-deployed Army. Stability operations and support operations will consume much of the Army's resources and energy. Supporting the Army of today and in the future will require CSS personnel to work faster and smarter.

1-15. The tenets of Army operations - agility, initiative, depth, versatility, and synchronization are basic to successful operations. They also establish the framework for organizing CSS. An effective and efficient CSS system allows the Army to operate in accordance with (IAW) these tenets. Such a system has several fundamental characteristics as discussed in FM 3-0 (100-5) and FM 4-0 (100-10). These logistics characteristics are anticipation, integration, continuity, responsiveness, and improvisation.

1-16. For all the changes that technology and force redesigns have brought, one thing remains true, that success in battle is dependent upon the unity of effort between the tactical operation and logistics operations. Now, more than ever, the logistics community will succeed or fail by how well the CSS operators on the battlefield understand and adhere to the following logistics characteristics:

- Anticipation.
- Integration.
- Continuity.
- Responsiveness.
- Improvisation.

1-17. **Anticipation** of CSS requirements is made possible by the enhanced situational understanding provided by secure communications and knowledge-based information systems. The DASB carries limited supplies. To properly provide support, the DASB leadership must anticipate future requirements and missions by understanding the tactical commander's plan and by staying aware of current developments. By using situational understanding, the DASB ensures that the required support has been planned for and requested from EAD.

1-18. CSS requirements must be **integrated** into the scheme of maneuver. The decrease in on-hand stockage levels greatly increases the DASB's dependence on EAD for resupply. This requires that the CSS planners at all levels clearly identify all support requirements early in the planning cycle. This ensures that the required support is fully integrated into the division's scheme of maneuver.

1-19. Support must be **continuous**. The division requires continuous CSS to perform its mission. Any break in logistics operations can diminish its combat power. CSS elements continuously both sustain combat forces and replenish their own capabilities. Positive control of CSS assets should be enhanced through more accurate and timely reporting with the use of combat service support control system (CSSCS). The DASB must provide continuous support to the maneuver and slice units and maintain positive control of all its CSS operations.

1-20. **Responsiveness** is the ability to meet changing requirements, often on short notice, as operations evolve in

unexpected directions. It is also the ability to respond to changes in the maneuver commander's intent and changes on the battlefield without interrupting the flow of support. This must be done with little or no advance notice and as the combat operations are being carried out. The DASB must maintain maximum flexibility and be ready to respond quickly, often with a task-organized structure to meet force-projection requirements.

1-21. CSS personnel try to anticipate all support requirements and build a CSS structure. **Improvisation** is often necessary to provide continuous and responsive support. capable of responding to any eventuality. However, it is inevitable that situations will arise in which even tailored resources will not be available to meet requirements if leaders apply them as outlined in doctrine or support plans. Therefore, support personnel must be prepared to seek innovative solutions to problems. If established support procedures are not providing the support required by the force, CSS personnel must be willing and capable of modifying and devising new ones that meets the needs. If required assets are not available through the normal system, they must be creative in acquiring them. Extraordinary means may be necessary. This is especially true at the tactical level where short time frames often require greater use of improvisation.

1-22. Because of technological advancements, the anticipated OPTEMPO on the battlefield will increase. Through technology the CSS operators will have massive amounts of tactical and logistical information at their fingertips. They will have access to the same common relevant picture of the battlefield as the maneuver elements. Their challenge will be to sift rapidly through the information, assess its effect, and apply the CSS characteristics to provide the right sustainment to the right place at the right time to support the tactical effort. The challenge will be that much greater, for the DASB commander and battle staff, as the technology and force redesign have given subordinate units a level of autonomy not seen in CSS structures of the past.

Chapter 2

Digitized Division Technologies

The redesigned division support command (DISCOM) and its organic units will see an emergence of new technologies and CSS enablers that will greatly enhance the ability of logisticians at division and below to execute their work more efficiently and provide situational understanding. This coupled with the paradigm shifts in organizational structures and support concepts, allows the Force XXI DISCOM to provide the required resources to the maneuver commander to meet the OPTEMPO required to defeat the enemy. Figure 2-1 shows the locations of automated systems within the DISCOM. These systems are discussed in this chapter.
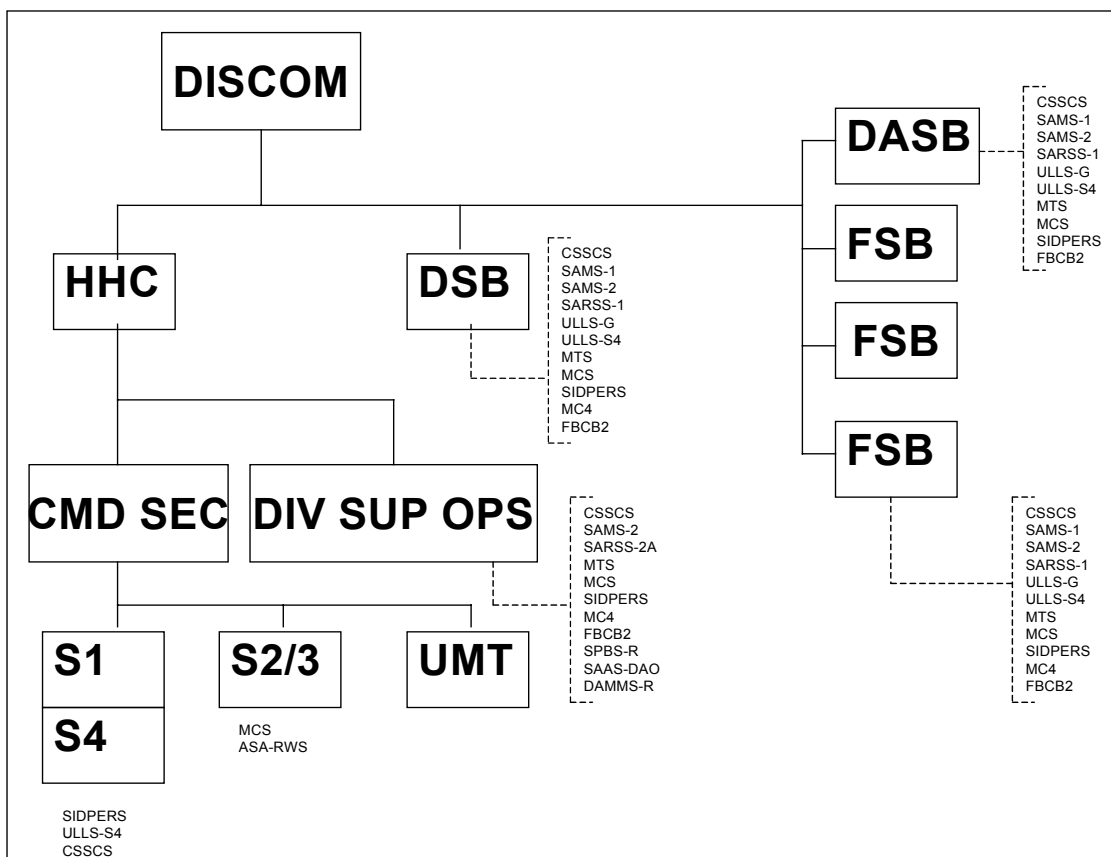
Figure 2-1. DISCOM Automation Architecture

Although the sections in what was previously known as the division materiel management center (DMMC) are now an integral part of the division support operations, the automation used to link the DSB, DASB, and FSBs to the DISCOM, and the DISCOM to the corps, remain resident in the same sections that managed them under the AOE structure. This is particularly true in the case of the STAMIS.

COMBAT SERVICE SUPPORT REDESIGN ENABLERS

2-1. The CSS enablers will assist logisticians by improving efficiency and effectiveness. Discussed below are those enablers that are currently designated to be used by the Force XXI Division.

CONTACT MAINTENANCE TRUCK (CMT)

2-2. The CMT is a self-contained, multi-capable repair system which will perform on-site organizational and DS level repair for wheeled vehicles and equipment. It has high mobility to maintain continuous support of maneuvering forces. It has enhanced hand and power tools, test measurement and diagnostic equipment (TMDE), welding and cutting equipment, and an air compressor, mounted on a heavy high mobility multipurpose wheeled vehicle (HMMWV) (M1097) vehicle chassis. The CMT will replace older obsolete contact trucks utilizing M880 and commercial utility cargo vehicle (CUCV) chassis. It also meets requirements for both ordnance and engineer on-site repair missions. Specific components include:

- Secure enclosure with easy access to tool cabinets and equipment.
- Highly durable, good quality hand tools.
- Enhanced electric power tools.
- Electrical arc and metal inert gas (MIG) welding and gas (oxyacetylene) brazing and cutting.
- Test and diagnostic equipment (TDE).
- High mobility standard chassis.
- Increased payload for spares, special tools, and individual military gear.

CONTACT TEST SET (CTS)

2-3.   The CTS (AN/PSM-80 (V) 2) is a modular tester and electronic information delivery device that can be reconfigured to meet maintenance support requirements of different commodity and items at unit level and above. The CTS, a component of the integrated family of test equipment (IFTE), is a rugged man portable, knowledge based test set used at all levels of maintenance. It identifies LRU problems and augments weapon systems built-in test and built-in test equipment (BIT/BITE). It acts as a platform for electronic technical manuals (ETM), and is an Army standard software downloader. It is one-person portable and is capable of interfacing with standard printers to provide hard copy output. The AN/PSM-80 (V) 2 will contain a digital multi-meter board, a counter/timer board and an internal combustion engine board. It replaces the simplified test equipment/internal combustion engine (STE/ICE) in performing expert diagnostics. In addition, it will provide means to upload and download software and support the J1708 digital bus systems. This system would be located wherever needed; organization, DS, or higher levels of maintenance.

FORWARD REPAIR SYSTEM (FRS)

2-4. The FRS is a PLS flatrack mounted maintenance shop. It is designed to provide field level (unit and direct support) maintenance to mechanized/armored forces and is transported by a standard PLS vehicle. The FRS capabilities include: 5.5 ton capacity crane for lifting engines/power packs and other major assemblies; oxyacetylene, electric ARC and MIG welding capabilities; pneumatic power and industrial quality hand tools; a 175 PSI air compressor; and a 30KW tactically quiet generator (TQG) power source to provide power for the welding set, crane, electric power tools, and on-board ancillary equipment. The tool configuration is a standardized load unique to the FRS and is based on the heavy combat fleet. It provides storage locations for general mechanics tool kits (GMTK); battle damage assessment & repair (BDAR) kits for the mechanized fleet, and the soldiers' portable on-system repair tool (SPORT). The GMTK, BDAR Kits, and SPORT are not components of the FRS. The FRS provides space to carry basic issue items (BII), authorized list items (ALI), CTA items and crew member's individual clothing and equipment.

2-5. Specific maintenance features are as follows:

- Lift capability needed to replace/repair heavy combat system components, such as power packs.
- Secure enclosure with easy access to tools and on-board equipment.
- Industrial quality tools and equipment to optimize support of heavy systems.
- Full welding and cutting capability.
- Air compressor for tools and utility support.
- Carries the SPORT for diagnostics, ETM and IETM support.
- Workbench area with limited environmental protection.

HEAVY EQUIPMENT RECOVERY COMBAT UTILITY LIFT AND EVACUATION SYSTEM (HERCULES) (M88A2)

2-6. The HERCULES provides the answer to the current recovery problems with the M1 series tank. It is an upgrade to the current M88A1 medium recovery vehicle that provides recovery support to systems up to 70 tons, which are Abrams, and future heavy combat systems, Wolverine, Grizzly, and Crusader. Improvements include an upgraded power train, better armor protection and improved towing, lifting, and winching capabilities. Key system performance improvements include: an upgraded power pack (engine, 750 HP to 1050 HP and an improved transmission), improved final drive, power brakes, and suspension; overlay armor-30mm protection, increase weight from 56 to 70 tons, and 6000 pounds lead auxiliary winch to aid in deployment of the main winch. The HERCULES will operate in the same environment and geographical areas as the systems it supports. This is normally one terrain feature behind supported units, maximizing cover and concealment techniques and will operate during hostile battlefield conditions compounded by darkness, smoke, dust, and adverse weather. The HERCULES will provide safe operation, braking, steering control, and adequate mobility while performing primarily recovery and maintenance operations such as towing an M1 series tank, removing turrets, recovering nosed-in or overturned tanks and tanks mired to various depth in varying soil conditions. Secondary recovery functions include removing/replacing powerpacks, a cutting capability for removal/repair of damaged components, auxiliary power unit for ancillary tools, refuel/defuel pump, and an impact wrench to support the various recovery task and repair actions.

TACTICAL INTERACTIVE GROUND EQUIPMENT REPAIR (TIGER)

2-7. The TIGER provides mechanics expert diagnostic trouble shooting programs and access to ETM/IETMs, standard army maintenance system (SAMS) and databases for float management.

2-8. Tactical interactive ground equipment repair is principally a comprehensive related body of ideas and proposals intended to reform maintenance. Tactical interactive ground equipment repair is intended to furnish the means to diagnose materiel conditions correctly, communicate needs for services and supplies, and track them to the customer, thus reducing repair cycle time. Tactical integrated ground equipment repair includes the following concepts and projects: anticipatory logistics; turbine engine diagnostics (TED)-onboard; driver minder; interactive electronic technical manuals (IETM); pocket unit maintenance aid (PUMA); digital interactive training (DIT).

2-9. Tactical interactive ground equipment repair provides the basic ingredients to establish anticipatory logistics and accurate diagnostics/prognostics. To resolve maintenance deficiencies, TIGER concentrates on such core problems in our logistics systems: lack of communications in contemporary combat service

support (CSS) units; fault-diagnosis of weapon systems and other military materiel; identifying, requisitioning, distributing, and applying repair-parts; tactical maintenance processes; the proficiency and performance of mechanics; understanding customer wants; the burden of preventative maintenance checks and services (PMCS) on mechanics, technicians, and most of all users.

ELECTRONIC TECHNICAL MANUALS (ETM)/INTERACTIVE ELECTRONIC TECHNICAL MANUALS (IETM)

2-10. Electronic technical manuals provide the mechanic compact disc-read only memory CD-ROM access to all maintenance technical manuals via laptop computer. Electronic technical manuals provide technical information and directions to maintainers and technicians. However, they do not automatically diagnose inoperable or malfunctioning systems.

2-11. Onboard IETMs have all the capabilities of IETMs, with the additional advantages of being integrated into the weapon system. This enables dynamic diagnosis, and the ability to communicate critical logistics information over the weapon system's digital radio.

2-12. Interactive electronic technical manuals diagnose and direct how to fix complicated, malfunctioning, or inoperable equipment. Interactive electronic technical manuals troubleshoot specific problems that inhibit combat performance of critical weapon systems, or high-maintenance cost drivers. Interactive electronic technical manuals have the capabilities to isolate the fault, determine the required repair part, and provide maintainers the instructions on the repair of the system. Interactive electronic technical manuals have the ability to communicate and interact with weapon systems, and with the supporting management information system (GCSS-Army). The IETM initiates the repair process. Normally, this occurs at the location of the inoperable equipment. Interactive electronic technical manuals comprehensively diagnose those field (organization and direct support level) maintenance tasks, identifies the parts required to repair the equipment, and forwards those parts requirements to the maintenance STAMIS, ULLS-G and SAMS-2 currently, and GCSS-Army as it replaces existing STAMIS.

2-13. A comprehensive weapon systems IETM or onboard-IETM does not exist. The ETM, the IETM, and the onboard-IETM are integrated components, or software objects that perform diagnostic functions. A combination of the IETMs, onboard-IETMs, and ETMs comprise a weapon system's total technical documentation.

2-14. To employ IETMs effectively, the Army requires an interface device, the PUMA. This permits the maintainer to communicate seamlessly with the weapon system, yet connect with customers, and other CSS elements over FBCB2, the global combat support system-army (GCSS-Army), or other available communications

systems. Onboard IETMs are accessed over the weapon system's existing computer and communications systems.

MOVEMENT TRACKING SYSTEM (MTS)
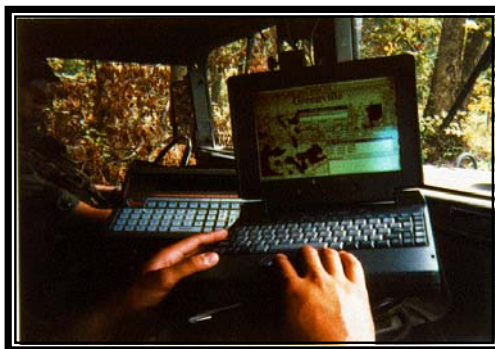
2-15. The movement tracking system (MTS) is a stand-alone, satellite-based communication system that provides near real time in-transit visibility (ITV) of distribution assets. The MTS provides ITV through the use of vehicular mounted personal computer-based hardware packages with mapping software and commercial satellite assets. The MTS combines global positioning system (GPS) and satellite communication technologies that provide automatically updated position location and two-way digitized message capability between mobile units and control stations.

2-16. The MTS is employed at all levels of the distribution management system. In the corps and division, MTS control stations are located in distribution management center (DMC) support operations sections, movement control/mode operator headquarters elements, support battalion support operations sections within the division, and supply support activities (SSAs) at all echelons. The MTS control stations located at the maneuver brigade S4 and the FSB support operations section, transportation cell provide positive inbound clearance, outbound coordination of transportation assets and supplies, and maintain ITV.

2-17. The MTS provides CSS commanders with near real time transportation asset location, movement data, and situational understanding. These capabilities enable distribution managers to redirect (divert) supplies/assets to higher priority needs, avoid identified hazards, inform vehicle operators of changes in unit locations, and improves the overall effectiveness and efficiency of the distribution management system. The MTS mobile units, palm-sized laptop computers, are mounted on common user land transportation (CULT) vehicles, selected C2 and combat support (CS) vehicles, and CSS tactical wheeled vehicles. In addition, a mobile MTS unit will be available for use by host nation and other foreign nations contributing to a combined operation, or in leased,

contracted and other vehicles that may be used in the distribution role but would not normally be equipped with MTS.

FAMILY OF MEDIUM TACTICAL VEHICLES (FMTV)

2-18. The family of medium tactical vehicles (FMTV) consists of two weight classes of vehicles and trailers; 2 ½-Ton light medium tactical vehicles (LMTV) and 5-ton medium tactical vehicles (MTV) each with trailers. Each family of vehicles shares common design and components to the maximum extent of commonality feasible. The family of vehicles currently features 80% commonality of parts, state-of-the-art systems, and easy to access controls.

2-19. The FMTV overcomes numerous deficiencies in tactical/strategic deployability, mobility, and ammunition/general resupply. It has the central tire inflation system (CTIS), on-board crane availability option, and is transportable on C-5, C-17, C-141, and C-130 aircraft. The FMTV replace existing 2 ½-ton and 5-ton trucks on a one-for-one basis. The FMTV are required to maintain the increased pace of logistical operations and to equal a dominant maneuver OPTEMPO. Battlefield distribution significantly alters the speed at which we execute service support and FMTVs are a key factor in reinforcing the existing infrastructure within Force XXI operations.

PALLETIZED LOAD SYSTEM (PLS)

2-20. The palletized load system is a 16 ½-ton tactical truck, trailer, and interchangeable de-mountable cargo flatrack combination with built-in self-loading/unloading capability that hauls all classes of supply (minus water and Class III bulk). The PLS has a total system hauling capacity of 33 tons, a 225-mile range, 50 MPH maximum speed, central tire inflation system (CTIS), and is C-5 and C-17 air transportable. When equipped with the container handling unit (CHU), the PLS can also provide increased container movement flexibility within the division rear area.

2-21. The PLS improves cargo handling by minimizing materiel handling requirements on an expanded battlefield and provides enhanced mobility to fielded units within the Force XXI division. These improvements are critical as they provide efficient and effective movement of supplies through a distribution-based logistics pipeline. The PLS is a key distribution platform employed by field artillery, ordnance, and transportation units. The PLS is the DISCOM's transportation operations workhorse under the Force XXI CSS redesign. The DISCOM commander can logistically weight the division's fight with the PLS employed by the transportation motor transport company (TMTC) of the DSB.

2-22. The role of the TMTC is to provide truck transportation for the distribution of supplies in the division's battlespace and assist division and corps elements requiring supplemental transportation. Specific PLS missions include, but are not limited to:

- Lateral redistribution of supplies in the brigade areas.
- Lateral redistribution of supplies between divisions.
- Relocation of ammunition supply/transfer points.
- Support tactical unit relocation and displacement of other divisional units.

HEMTT-LOAD HANDLING SYSTEM (LHS)

2-23. The heavy expandable mobility tactical truck (HEMTT) - load handling system (LHS) is a standard M977 or M985 HEMTT chassis equipped with a PLS-variant load handling system. The LHS is designed for loading/unloading de-mountable cargo beds (flatracks) and 8'x 8'x 20' international standardization organization

(ISO) containers/shelters on flatracks. These flatracks are interchangeable with all fielded PLS flatracks. This system introduces the capability to handle flatracks at the maneuver brigade level.

2-24. The LHS is employed by the FSB's HDC and FSC in the supply & transportation (S&T) distribution sections. Employment of the LHS improves system performance, reduces load and unload times, and increases vehicle availability for CSS units operating in the Force XXI brigade area. The LHS has the capability of transporting an 11-ton payload on the truck-mounted flatrack while towing an additional 11-ton flatrack load with the M1076 PLS trailer (the trailer is issue with LHS only to the FSB HDC). The LHS maintains the capability to transport all classes of supply (minus water and Class III(B)) in a tactical environment.

2-25. The LHS improves cargo handling by reducing container/materiel handling equipment requirements forward on the battlefield. It also enhances the mobility of CSS units by allowing supplies and equipment to remain uploaded for immediate displacement if required. Additionally, the LHS extends distribution throughput capability and enhances velocity through flatrack exchange with PLS. The use of flatrack distribution and exchange forward in the brigade area increases the supported maneuver commander's tactical flexibility.

## CONTAINER HANDLING UNIT (CHU)

2-26. The container handling unit (CHU) is a configuration of lifting, sliding, stowing, and locking apparatus configured onto to the palletized load system (PLS) that enables it to self-load/unload 20 foot (or equivalent) containers. With this CHU configuration, the PLS interfaces with ISO-conforming containers without the use of a

flatrack. The CHU has the ability to adjust to container height variants and retains full flatrack interoperability with minimal reconfiguration required.

2-27. The CHU is employed by the tactical truck platoon, TMTC of the DSB and at ammunition transfer points (ATPs) operated by the FSB, HDC. This employment increases the division's capability to rapidly transport containerized supplies forward on the battlefield. The PLS/CHU has the capability of transporting a 16 ½-ton payload on the truck while towing an additional 16 ½-ton flatrack load with the M1076 PLS trailer. The PLS/CHU configuration (with trailer) maintains the capability to transport 33-tons of supplies in a tactical environment.

2-28. The CHU provides a container handling ability not previously organic to the division and reduces container/material handling equipment requirements, such as rough terrain container handlers. This additional container handling ability enhances distribution throughput capability, velocity, and immediate ATP displacement. The CHU provides CSS commanders with container handling capability forward in the division and brigade areas and increases the supported maneuver commander's tactical flexibility.

CONTAINERIZED ROLL-IN / ROLL-OUT PLATFORM, M3 (CROP)
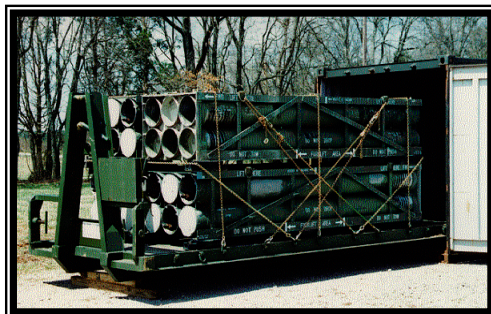
2-29. The containerized roll-in/roll-out platform (CROP) is the flatrack of the future. It is a PLS/LHS flatrack that will eventually replace the M1077 flatracks currently fielded with the PLS and trailers. This flatrack is configured to fit snuggly into a 20 foot ISO dry cargo container that has an internal door opening width of at least 92 inches and an internal length of 231 inches. It reduces transportation-shipping times and eliminates blocking and bracing efforts at origin and destination when shipped in a container. The CROP can be loaded with miscellaneous unit equipment and all classes of supply, to include ammunition. The CROP has an inward folding A-frame that allows these flatracks to be stacked 2-6 high for retrograding.

2-30. The CROP is a cargo carrying platform (or flatrack) suitable for repeated use throughout the PLS and LHS mission profiles. This improved-design flatrack is a critical enhancement to transportation operations, a key enabling system to battlefield distribution, and the cornerstone to sustainment supply velocity in the distribution pipeline under Force XXI CSS doctrine.

2-31. The CROP offers strategic, operational, and tactical applications that serve an increased pace of logistics operations and significantly alters the speed at which we provide combat service support to the warfighters.

RADIO FREQUENCY - AUTOMATIC IDENTIFICATION TECHNOLOGY (RF-AIT)

2-32. Radio frequency-automatic identification technology (RF-AIT) is an assemblage of commercial off the shelf equipment built around a nucleus of radio frequency tags that possess embedded data of container contents, shipment data, and vehicle identification. The tags are placed on containers or vehicles at the source (such as a shipping depot or supply point) and can then be read by fixed interrogators placed at various in transit points, such as ports of embarkation (POE), ports of debarkation (POD), installations and at the eventual destination. Data input for radio frequency (RF) tags will be generated at the data source supply activity. For sustainment shipments flowing from echelons above brigade (EAB), supply locations to the lowest level supply support activity (SSA), supply item data will be entered through a fixed burn station into the RF tag. For remote EAB supply locations, supply item data may be entered by the use of a hand held interrogator. There are three sections within the data fields of a single tag that provide specific information. The lead section, or section 1 of the RF tag holds the transportation control and movement document (TCMD) header data. This section contains the primary transportation control number (TCN), major characteristics of the cargo (cube/weight), the primary consignor, and consignee. Section 2 contains a detailed item description to include subordinate consignees and document number information. Section 3 is a free text area that allows the source to input any specific disposition and/or special handling instructions for any line item of the shipment.

2-33. Radio frequency tags are separated into three data sections that provide specific information. The lead section, or license plate data, provides specific information about the shipment, such as, port of entry, port of departure, required delivery date (RDD), consignee, consignor, hazardous material (HAZMAT), number of commodity records and the number of transportation control and movement document (TCMD, DD Form 1384) records. The second section, or the TCMD section holds the TCMD header data. This section contains the primary transportation control number (TCN), major characteristics of the cargo (cube/weight), the primary consignor, and consignee. Section 3, or the commodity section

contains detailed 1348 type detail. This section includes a database with NSN, document number, unit of issue routing identifier code.

2-34. Radio frequency tags will be affixed to the cargo by means of nylon serrated electrical ties. This method ensures the tags remain with the cargo until it reaches the point of delivery or the lowest level SSA.

2-35. The receiving SSA, through the use of a hand held interrogator, gains quick information as to the contents of each shipment and aids in the rapid processing of supplies into SARSS and subsequent delivery to the requesting unit.

Retrograde

2-36. Radio frequency tags recovered from previous shipments can be used to retrograde cargo from the user to EAB supporting supply activities. The SSA will take steps to ensure the original shipment data on the tag is deleted. This measure prevents confusion of the old original shipment data and new retrograde data.

2-37. Upon picking up the cargo, the FSC or HDC, informs the battalion support operations section. The support operations office of the FSB will then associate that particular RF tag with the corresponding vehicle equipped with the MTS or FBCB2. The support operations section passes this information via digital non-secure voice terminal or telephone (DNVT) or tactical fax, which provides information to the EAB receiving supply activity.

Return of Unused RF Tags

2-38. Should recovered RF tags exceed the number of retrograde shipments, arrangements should be made to return the tags to the next higher supporting SSA. Key points to remember when returning RF tags are to: delete the original shipment information and flip the battery within the tag. Units, through retrograde operations, or direct returns, should return tags to the system within 72 hours of receipt.

STANDARD ARMY MANAGEMENT INFORMATION SYSTEMS (STAMIS)

2-39. The CSS community has developed functional information management systems that increase the productivity of the individual soldier and effectiveness of the unit. These CSS STAMIS will provide the logistics infrastructure required for any military ground operation. The technical goal is to establish a seamless and interoperable network. The network involves the integration and communication software used by all STAMIS systems. Components of the system primarily include unit level logistics system (ULLS)-ground (G),ULLS air (A), ULLS-S4, standard Army retail supply system (SARSS), and standard army maintenance system (SAMS). In addition to the above mentioned

systems, the STAMIS interim transmission equipment consists of RF modems, mobile subscriber equipment (MSE), and tactical terminal adapters (TTA). The STAMIS communication software utilizes the blocked asynchronous transmission (BLAST) package. A brief description of the various STAMIS listed in Figure 2-1, as part of the DISCOM automation architecture, is discussed in this section.

TRANSPORTATION STAMIS

Department of the Army Movement Management System Redesigned (DAMMS-R)

2-40. Department of the army movement management system redesigned (DAMMS-R) is an automated movement management system designed to provide convoy planning, highway regulation, and transportation asset information for the division. The DAMMS-R provides in-transit cargo movements data, convoy arrival information, mode asset status, hold/diversion status, transportation and container status reports, and transportation intelligence.

2-41. The DAMMS-R operates in the DISCOM support operation's movement control office (MCO) and in the division transportation officer (DTO). The DAMMS-R functionality will be combined with other installation transportation office (ITO) unit deployment planning/executing systems and result in a single, easily deployable transportation management system, the transportation coordinator's-automated information management system II (TC-AIMS II).

Transportation Coordinator's - Automated Command and Control Information System (TC-ACCIS)

2-42. Transportation coordinator's - automated command and control information system (TC-ACCIS) is the Army's automated unit deployment planning and execution system that accomplishes transportation functions for ITO/traffic management offices. It generates unit movement data, air load plans, air cargo manifests, rail load plans, bills of lading, and bar-code labels for shipment.

2-43. The TC-ACCIS allows unit movement officers (UMOs) to create, update, or modify unit deployment data for peacetime, mobilization and deployment/redeployment operations. The TC-ACCIS functionality will be combined with DAMMS-R's movement management functionality and result in a single, easily deployable transportation management system, the transportation coordinator's-automated information management system II (TC-AIMS II).

Transportation Coordinator's–Automated Information for Movements System II (TC-AIMS II)

2-44. Transportation coordinator's–automated information for movements system II (TC-AIMS II) is the generic term for the

computer hardware, software, and radio frequency-automatic identification technology that consolidates unit movement, ITO, and theater distribution functions (DAMMS-R and TC-ACCIS) into a joint automated information system.

2-45.   The TC-AIMS II is a system designed for unit movement officers, planners, movement controllers, and transportation operators at all levels.   It will be employed from installation transportation offices (ITOs) at the Army's power projection platforms, other TC-ACCIS locations, and from theater level commands to battalion and separate company levels.

2-46.   The TC-AIMS II will provide transportation functions such as plan convoys, request convoy clearances, conduct load planning, and manage mode operations.   It will also support daily transportation operations and provide enhancements to the deployment process by building automated unit equipment lists and deployment equipment lists.   The TC-AIMS II supports planning, executing, managing, and reporting movement-related deployment, sustainment, and redeployment activities.   It will facilitate the movement of personnel, equipment, and supplies and provide visibility data of those forces from factory to foxhole.

2-47.   The TC-AIMS II will provide information to enable in-transit visibility (ITV) through a series of regional servers to the global transportation network and transportation information to Army command and control systems. It will ultimately provide the theater of operations with a joint transportation system capability supporting the Commander-in Chief with visibility of transportation assets in the distribution pipeline.   The TC-AIMS II will be the enabler for force projection supporting Force XXI operations and battlefield distribution.

MAINTENANCE STAMIS

Standard Army Maintenance System (SAMS)

2-48.   **SAMS-1**.   Standard army maintenance system-1 (SAMS-1) is a maintenance management system which automates shop operations within the FSC MCS, BSC MCS, AMC MCS, and ASMC MCS.   It provides shop management control of workload, manpower, and supply. It also has the capability to automatically produce work orders, requisition repair parts, manage shop and bench stock, and provide detailed labor costs related to a specific work order.   The FSC MCS, BSC MCS, AMC MCS and ASMC MCS pass the SAMS-1 information to the SAMS-2 located in the respective support operations section. The FSB , DASB and DSB support operations sections pass the information to the SAMS-2 located in the division support operations section.

2-49.   **SAMS-2**. Provides mid-level maintenance management and readiness visibility at the support operations level through selected maintenance, equipment readiness, and equipment performance

reports. It produces management reports related to work orders, shop capabilities, production, backlog, manpower and parts costs. It also provides completed work order data and readiness data to the logistics support activity (LOGSA) for equipment performance and other analysis.

SUPPLY STAMIS

Unit Level Logistics System (ULLS)

2-50. **ULLS-Ground (G)**. The ULLS-G is located at any unit that has an organizational or tactical field maintenance facility, and is designed to be operated by unit level personnel. It automates the entire range of supply functions associated with the prescribed load list (PLL), vehicle dispatching, and the army maintenance management system (TAMMS) function at the motor pool. ULLS-G interfaces with SARSS-1 and SAMS-1.

2-51. **ULLS-Air (A)**. The ULLS-A is located in all aviation units. It performs those functions for aviation the ULLS-G performs for ground units. It will automate the production control, quality control, and tech supply (Class IX) functions at the aviation unit maintenance (AVUM). The ULLS-A interfaces with SARSS-1.

2-52. **ULLS-Battalion (S4)**. The ULLS-S4 is located at all companies, battalion S4s, and brigade S4s. It provides hand receipt accountability for property, requests supplies, and requests transportation. The ULLS-S4 interfaces with SARSS-1, standard property book system-revised (SPBS-R), standard army ammunition system-modified (SASS-MOD) and CSSCS.

Standard Army Retail Supply System (SARSS)

2-53. **SARSS-1**. The SARSS-1 is an interactive, menu-driven, automated supply accounting system providing asset visibility. It automates supply support functions of the DSB SSA, DASB SSA, FSB SSA and FSC supply platoons. It processes supply requests, issues, receipts, and tracks storage of items. It interfaces with the ULLS-S4, SAMS-1, SPBS-R, CSSCS, and SARSS-2A.

2-54. **SARSS-2A**. The SARSS-2A provides intermediate management of the supply system at the DISCOM level. It provides reparables management and tracks excesses. It also provides referrals by conducting lateral searches among SARSS-1 locations within the division. It interfaces with the SARSS-2A(C/B) located at the corps material management center (CMMC), which tracks demand and document history, financial record keeping, and conducts lateral searches at the corps level.

Standard Property Book System- Revised (SPBS-R)

2-55. The SPBS-R is an interactive, menu driven property accountability system. The system accomplishes the functions of property accountability required by Army regulation (AR) 710-2, department of the Army pamphlet (DA PAM) 710-2-1, and all other pertinent and applicable regulations and guidelines. It operates in both centralized and decentralized mode, and provides asset visibility wherever the requirement exists. The SPBS-R interfaces with ULLS-S4, SARSS-1, tactical unit financial management system (TUFMIS), and CSSCS.

Standard Army Ammunition System-Modified (SAAS-MOD)

2-56. The SAAS-MOD is an automated ammunition system, which consolidates the following, three levels of operations into a single software baseline: theater support command materiel management center (TSC MMC/CMMC), ammunition supply point, and the division ammunition office (DAO). SAAS-MOD is designed to manage conventional ammunition, guided missiles and large rockets, and related crating and packing materials. SAAS-MOD provides formal stock record accountability, asset visibility, intransit visibility, management control, and automatic-reporting capabilities for ammunition stored at the retail level. It also supports basic load, war reserve, and operational stock management. It supports Class V conventional ammunition missions for units ranging in size from a brigade-size task force to theater. Any element, except an ammunition transfer point (ATP), when deployed independently, can perform the same functions as a TSC MMC or a DS/general support (GS) ordnance group. Within the division, a SAAS computer is located at the Class V branch of the general supply office, division support operations section. The SAAS-MOD interfaces with the following systems by either disk-to-disk or modem-to-modem transfer:

- SAAS.
- Commodity command standard system (CCSS).
- LOGSA.
- Worldwide ammunition reporting system (WARS).
- SPBS-R.
- DAMMS.
- ULLS-S4.
- CSSCS.

MEDICAL STAMIS

Medical Communications for Combat Casualty Care (MC4)

2-57. The MC4 system will be a theater, automated combat health support (CHS) system, which links commanders, health care providers, and medical support providers, at all echelons, with integrated medical information. The system will provide digital enablers to connect, both vertically and horizontally, all ten CHS functional business systems. The MC4 system will receive, store, process, transmit, and report medical command and control, medical surveillance, casualty movement/tracking, medical treatment, medical situational understanding, and MEDLOG data across all levels of care. This will be achieved through the integration of a suite of medical information systems linked through the Army data telecommunications architecture. The MC4 system will begin with the individual soldier and continue throughout the health care continuum. The best way to visualize the MC4 system capability is as a piece of the Army digital computer network where all ten CHS functional areas have been digitized and this CHS information is freely shared with everyone in the Army with a need to know. Not only will the MC4 system provide Army commanders with CHS information, but it will also provide them with a seamless transition to the joint CHS environment. The MC4 system will consist of three basic components: software, hardware, and telecommunications systems.

- Software capability.
    - The Joint TMIP will provide government off-the-shelf (GOTS)/commercial off-the-shelf (COTS) software and interoperability standards to support joint theater operations. The software provides an integrated medical information capability that will support all levels of care in a theater of operations with links to the sustaining base. Medical capabilities provided by the software to support commanders in the theater will address medical command and control (C2) (including medical capability assessment, sustainability analysis and medical intelligence); MEDLOG (including blood product management and medical maintenance management); casualty evacuation; and health care delivery.
    - The MC4 system will support Army-unique requirements and any software needed to interface with Army information systems such as CSSCS, GCSS-A, FBCB2, warrior programs, and the movement tracking system.
- Hardware systems. The hardware will consist of COTS automation equipment supporting the above software capabilities. Examples include, but are not limited to, computers, printers, networking devices, and the personal information carrier.
- Telecommunications systems. The MC4 system will rely on current and proposed Army solutions for tactical, operational, and strategic telecommunications systems to transmit and receive digitized medical information throughout the theater

and back to the sustaining base. There will be no separate Army medical department (AMEDD) communication system. Telecommunications at brigade and below will be accomplished through the tactical internet (TI); above brigade level, telecommunications will be accomplished through the warfighter information network (WIN) architecture. The MC4 system will include hardware or software required to interface with current and emerging technologies supporting manual, wired, and wireless data transmission. At end-state, the MC4 system users will exchange data electronically via the WIN architecture. In the interim, commercial satellites and/or high-frequency radios will be fielded to selected medical units [for example, medical detachment-telemedicine] receiving the MC4 system to support high bandwidth requirements until the WIN architecture is fully fielded. Personnel operating satellite assets are resourced in the MDT TOE and will be located with the medical detachment-telemedicine.

The MC4 system will employ a three-block incremental development approach that incorporates the spiral systems engineering life-cycle methodology designed to reduce development risk, improve manageability, increase maintainability, and accelerate benefits to the warfighter. The MC4 system will be the Army's medical information system to modernize, digitize, and integrate medical information and make it available for the warfighting commander's use.

GLOBAL COMBAT SUPPORT SYSTEM-ARMY (GCSS-ARMY)

2-58. In the future, GCSS-Army will be the Army's automation information system to modernize and integrate the capabilities of existing logistics STAMIS. Those capabilities to be integrated will include supply, property, ammunition, and maintenance functions (less medical) with significant enhancements. The principal logistics STAMIS to be functionally integrated include the ULLS, SARSS, SPBS-R, SAAS-MOD, and the SAMS. The GCSS-Army modules include:

- A modernized supply and property module that integrates supply operations and property accountability in all units.
- A modernized maintenance module that integrates maintenance operations (such as ground, aviation, and water equipment) at all levels of maintenance.
- A modernized ammunition module that integrates Class V management and operations.
- A modernized supply support activity module that integrates the supply management and operations at supply support activities and storage sites.
- A modernized and integrated materiel management module that integrates supply, property, ammunition, and

maintenance management in all materiel management organizations.

- A management module that integrates information from multifunctional CSS data sources and allows for data exchange with other GCSS-Army modules and external automation information systems.

- The GCSS-Army will improve CSS information management by eliminating duplicative information systems, improving the sharing of data, and leveraging advances in advanced information technology. It will provide the ability to support joint operations with sister services as well as provide support to our allies. The GCSS-Army will have a link into the command and control systems through CSSCS and GCSS-Army.

COMBAT SERVICE SUPPORT FUNCTIONS ON FBCB2

2-59. The FBCB2 is a hardware/software suite that digitizes C2 at brigade level and below. The FBCB2 concept provides a seamless battle command capability for performance of missions throughout the operational continuum at the tactical level. The FBCB2 is the implementation of information age technology to provide increased battlefield operational capabilities.

2-60. The system, positioned on specified platforms, will perform combat, combat support (CS), and CSS functions for the planning and execution of operations. The FBCB2 represents a major paradigm shift for the CSS community. For the first time, the CSS organizations are digitally linked to the platforms and organizations that they support. The FBCB2 provides a common battlespace picture enabling CSS providers to maintain the OPTEMPO set by maneuver commanders.

CSS FUNCTIONS

2-61. Combat service support functionality within FBCB2 gives the combatant a common relevant picture of the current CSS situation at his/her echelon of command and at subordinate levels. Additionally, it provides the personnel and logistics leaders CSS situational understanding (SA) throughout their battlespace. It also provides enhanced capability to synchronize support to customer units. The CSS functionality on FBCB2 includes the following: logistics situational reports (LOGSITREP), personnel situation report (PERSITREP), supply point and field services status report, command tracked item list update message (CTIL/BRIL), a task management suite which includes: logistics call for support (CFS), logistics task orders (LTO), logistics task synchronization and logistics task management. Additional FBCB2 CSS reports include: medical unit situation report, mortuary affairs report, logistical and tactical situational understanding. Currently, FBCB2 permits information to be entered using free text, such as comments and other pertinent CSS information. Ideally, automated systems

should be designed to limit free text input. In these cases, the user of the system should understand that the information cannot be automatically manipulated or rolled-up by higher headquarters.

LOGISTICAL SITUATION REPORTS (LOGSITREP)

2-62. The LOGSITREP provides input for logistical status for all classes of supply as determined by the CTIL, for example, Class I, II, III(P), III(B), IV, V, VII, and IX. CTIL items are selected from the CSSCS BRIL and passed through each echelon of command using the CTIL/BRIL update message and posted to each FBCB2 platform. Platforms are only required to report CTIL items authorized and available on-hand. The LOGSITREP primarily flows through the noncommissioned officer (NCO) chain of command to the battalion S4 and the maneuver brigade S4, with information copies to the FSB support operations section. All reports will follow the chain of command as specified in the unit task organization (UTO). As each unit's report is submitted to the next higher echelon of command, information copies are sent to key personnel. For survivability of the reporting process, key personnel are identified to replace the primary roll-up point duties should the primary roll-up point become non-operational. At brigade level, the maneuver brigade S4 submits company level roll-ups to CSSCS. See Figure 2-2.

2-63. All recipients of the LOGSITREP (action or information message) have the ability to look one level of command down. This gives that user the ability to see the report submitted at that level for each class of supply and any comments that were made. Comments made with the LOGSITREP cannot be rolled-up. Any comments necessary for further processing up the reporting chain must be reentered in the next report.

2-64. The purpose of the LOGSITREP is to provide the unit commanders and key personnel visibility of the latest logistics status of their unit. A secondary purpose of this report is to provide the CSS unit visibility of a unit's logistics status to better anticipate their logistics requirements. Optimally, the user will not have to request resupply of commodities reported through this report. This is because the CSS unit is aware of their requirements and can begin the necessary CSS action prior to the company needing to ask for it.

LOG SITREPS AND ROLL-UP INFO

ADDRESSES

CSSCS

ALT LIST:	ALT LIST:	ALT LIST:	ALT LIST:
1. FSB SPT OPS	1. BN S1	1. CO XO	1. PLT LDR
2. BDE S1	2. BN XO	2. CO CDR	
3. BDE XO	3. FSC SPT OPS		
4. BDE S3	4. BN S3		

CO LEVEL ROLL-UPS

BDE S4 ◄   BN S4 ◄   CO 1SG ◄   PLT SGT ◄   SQ LDR

BDE CDR   BN CDR   CO CDR

BDE XO   BN XO   CO XO

FSB SPT OPS   FSC SPT OPS

- - - ► Information message of total roll-up with one level lookdown capability

───► Primary roll-up address thread (only unit totals sent up)

Figure 2-2. LOGSITREP Digital Report Flow

LOGISTICS CALL FOR SUPPORT

2-65. The purpose of this message is to request immediate CSS support. Any platform with an FBCB2 can request CSS support through the CFS message function. The CFS is a templated message and may be sent directly to the supporting logistics activity, but should be sent to the company first sergeant (1SG). This enables immediate support action on the battlefield, a combat multiplier. Any FBCB2 can send or receive a CFS message. The LOGSITREP reports on hand quantities of classes of supply. However, in the event that the support requirement was not or could not be anticipated, the company may specifically request support through this function.

2-66. The CFS is entered as a templated message and is sent, per unit standard operating procedure (SOP), to the supporting logistics

organization that will provide the service or support. The FBCB2 system hosts six categories of CFS requests; maintenance, transportation, supply, medical, religious and others. Supply Actions include, Class I, III, IV, IX, laundry and bath, and mortuary affairs; Transportation Actions, pick up, deliver, and information; Maintenance Actions, repair, recover, services, and information; Medical Actions, evacuations, medic, Class VIII, and information; Religious Actions, worship, pastoral care, PW/refugee support, funeral services, memorial services, and information; Other, request not covered in the other 5 categories, sent in free text mode.

LOGISTICS TASK ORDER

2-67. Once the appropriate CSS activity receives the CFS, the CSS manager identifies the most appropriate CSS resource to execute the mission. The CSS manager (tasking authority) sends a LTO to the resource. This message is the same template as the CFS message, therefore, the requesting unit and its location are specified in the order. Once the CSS resource receives the message, the FBCB2 will prompt him to return an acknowledgment message (ACK) stating whether he can, can't, or already has executed the mission (WILCO, CANTCO, HAVECO). If the resource replies with a WILCO, he will also be prompted to send an acknowledgment message of IDLE or ACTIVE. This action specifies whether the resource is actively executing the mission or is working on another mission. Once the acknowledgments have been sent, the resource will conduct synchronization with the requesting unit by sending him a free text message stating that he is on the way, will be there, or at a rendezvous point by a specified time, what he understands the mission to be, etc.

PERSONNEL SITUATIONAL REPORT

2-68. The FBCB2 transmits personnel strength information through the PERSITREP. The PERSITREP is a CSS report submitted from platform level through the command hierarchy to brigade headquarters (HQ) level. FBCB2 users at platform level submit duty status changes through their 1SGs. The 1SG forwards these changes simultaneously to the battalion and brigade S1. The 1SG can also initiate a duty status change. The S1s update the duty status changes from FBCB2. The personnel functionality will be added into a future version of the CSSCS.

2-69. The PERSITREP provides commanders digitized updates to personnel status. The PERSITREP also provides changes to the deployed personnel database. When soldiers deploy, the brigade S1 manifests every deploying soldier. The S1 builds the deployed personnel database through the manifest process. This deployed database is the baseline of personnel deployed. The PERSITREP provides information to change the duty status of the deployed personnel. These changes update the deployed database. These

updates give the S1 the capability to retrieve data that they previously required subordinate units to send through recurring reports.

2-70. The PERSITREP follows the NCO support chain. The 1SG receives copies of all reports as they are distributed to the battalion S1 and the brigade S1. All reports will follow the chain of command specified in the UTO. Key leaders receive copies of the PERSITREP as it is transmitted to the next higher echelon of command. For survivability of the reporting process, key personnel are identified to replace the primary recipients in case of operational failure.

2-71. The battalion and brigade S1 use the information provided through FBCB2 to update the deployed personnel database. This database provides commanders the latest information on their soldiers. It also allows the commander to monitor his personnel resources, assess his needs and allocate his resources to maximize combat power. The brigade S1 is responsible for monitoring the status of all personnel within the brigade area and will assign replacements based upon the commander's priority of fill. When replacements arrive they report into the battalion S1 section and then immediately assigned to their unit. Each unit 1SG must assume responsibility or assign responsibility to specific platforms to report personnel not assigned to a specific vehicle with FBCB2. For example, headquarters section personnel not assigned to the 1SG vehicle (unit armored and unit supply sergeant). 1SG must ensure each member within the unit is accounted by an FBCB2 platform. FBCB2 users at platform level submit duty status changes through their 1SGs. The 1SG conducts a rollup of the PERSITREP and forwards to battalion and brigade S1. Subsequent PERSITREPs should only reflect changes in duty status from individual platforms or in accordance with standard operating procedures. The 1SG can also initiate a duty status change

Supply Point and Field Services Status Report

2-72. The supply and field services status report is designed to support the customer with specific information on supply or field service being provided. The supply point and field service report can be used to report on the following: ambulance exchange point (AXP), caches, logistics release points (LRPs), ammunition supply point (ASP), ammunition transfer point (ATP), forward arming and refuel point (FARP), Class I, II, IIIP, IIIB, IV, V, VII, VIII, IX supply points, aviation refuel point, ground refuel point, trailer transfer points (TTPs), water supply point, salvage point, maintenance collection point (MCP), shower, laundry, clothing repair point, and mortuary affairs collection point (MACP). The report can either be broadcast as SA depicting opening/closing times, location, type of supplies or services available, and available quantity of the type of logistics support being provided. Opening and closing times can be

established which will aid both the customer and support operations in management of the supply point types. All direct support stock status will be reported via this report. The LOGSITREP will report organic stocks and supply point and field services status report will be used to provide status on direct support stocks of Class I and water, II, IIIP, IIIB, IV, V, VII, VIII, and IX. Management of supply point and field services status report icons are a responsibility of the owning unit and their respective support operations section at both the FSC and FSB.

SITUATIONAL UNDERSTANDING

Overlays

2-73. The FBCB2 operator can gain situational understanding by activating the overlay feature of the FBCB2. The CSS overlay depicts the various CSS assets in the brigade sector. The overlay has icons depicting CSS assets (for example supply points, CSS CP, logistics release points (LRP)). The brigade S4 posts these points to the CSS overlay. Supply points send their locations to the brigade S4 with an information copy to the DASB support operations cell through free text message for posting or updating the CSS overlay. This feature significantly assists supported elements in locating key CSS supply activities during supply point distribution. It also assists the supporting CSS units in locating supported units when conducting unit distribution.

Icons

2-74. The FBCB2 operator can pick up visibility of assets within the brigade. These assets will automatically transmit position reports that will update each FBCB2 screen within his autonomous system. The updates are frequent and will maintain near real-time position awareness. This feature allows significant asset visibility of key CSS assets with FBCB2. CSS synchronization with the supported element will depend heavily on this feature of FBCB2. For example, if an M2A3 Bradley needs recovery, the driver submits a CFS through the platoon sergeant (PSG) and the 1SG. The CFS messaging will task a recovery vehicle (M88) to recover the track. If the M88 is FBCB2 equipped, the LTO message received identifies the platform requesting recovery. During the synchronization process, the M88 will send a free text message to the supported 1SG stating that it will conduct the recovery mission and will coordinate the most appropriate time to conduct the recovery mission. The M88 then identifies and selects the M2A3's icon on the situational understanding map on the screen. The M2A3 can do likewise to observe the supporting M88 as it approaches the M2A3. This feature prevents any confusion in locating the M2A3 and significantly increases the tempo of CSS support on the battlefield.

ARMY TACTICAL COMMAND AND CONTROL SYSTEM (ATCCS)

2-75. The ATCCS integrates five of the seven battlefield operating systems (BOS), maneuver, fire support (FS), air defense (AD), combat service support (CSS), and Intelligence that the DISCOM/DSB/FSB/DASB has the capability to interface with. Each of these functional areas is supported by a control system designed to provide leaders and planners with information to effectively plan, coordinate, control, and direct the battle. These BOS control systems are oriented toward combat operations and provide the commanders and staffs at corps and below with situational information and decision support in executing operational/tactical battle. A brief description of the various ATCCS listed in Figure 2-1 as part of the DISCOM automation architecture is discussed in this section.

MANEUVER CONTROL SYSTEM (MCS)

2-76. The MCS is the maneuver component of ATCCS. It is the primary information system supporting the BN/TF commander and staff. MCS provides the principal operational interface with necessary applications to access and manipulate the force level database to realize the force level commander concept. There are a wide array of capabilities available, which make planning and executing a battle plan more efficient. Capabilities range from modifying UTOs to creating overlays. Commanders and staffs update the MCS database by entering readiness data, battle plans, and battle plan changes as they occur at each echelon.

2-77. The MCS system consists of window and menu-based software allowing system operators to process, retrieve, store, and send information in textual or graphical form. Reports, operation orders (OPORD), overlays, UTO, and messages are available to the user.

ALL SOURCE ANALYSIS SYSTEM-REMOTE WORKSTATION (ASAS-RWS)

2-78. The ASAS-RWS is a functionally integrated intelligence support system component of ATCCS. It manages sensors and other resources; collects, processes, and fuses intelligence data; stores, manipulates, and displays this data; and quickly disseminates information to the commander by providing situational understanding of enemy activity.

2-79. The ASAS-RWS supports the commander's decision-making process 24 hours a day whether on the battlefield or in rear support areas. It prioritizes and manages collection assets; processes, receives, and correlates data from strategic and tactical sensors and other sources to produce ground battle situation displays. The system then disseminates intelligence information to assist the commander in refining that guidance, aids in target development, and provides recommendations.

COMBAT SERVICE SUPPORT CONTROL SYSTEM (CSSCS)

2-80. The CSSCS is the CSS component of ATCCS. As this is the primary CSS tool used within the DISCOM, it will be discussed below in more detail. CSSCS provides a concise picture of unit requirements and support capabilities by collecting, processing, and displaying information on key items of supplies, services, and personnel that the commanders deem crucial to the success of an operation. The CSSCS does not duplicate STAMIS functions. The management of all items within a class of supply or support function remains STAMIS functions. Items tracked in CSSCS represent a small portion, but critical, list of the items managed by STAMIS.

2-81. The CSSCS also supports the decision making process with course of action (COA) analysis. Staffs can analyze up to three COAs for a 4-day period. Variables include combat posture, unit task organization, miles traveled, and geographical region.

2-82. The CSSCS maintains a database of unit personnel and equipment authorizations by standard requirement code (SRC) similar to table of organization and equipment (TOE) and unit and equipment planning factors. CSSCS includes a database of equipment and personnel called a baseline resource item list (BRIL). The items that a commander identifies as critical to the operation can be selected from the BRIL to establish the commander's tracked item list (CTIL).

2-83. The CSSCS currently provides situation awareness of critical elements within supply Classes I, II/IV, III(B), III(P), V, VII, VIII and personnel strength management. Maintenance, transportation, and medical functionality are a few features to be added as the system matures.

2-84. The commander identifies a CSSCS manager who is responsible for developing and coordinating the plan to establish the CSSCS nodes and network. The CSSCS manager responsibilities include:

- Ensure that each echelon is resourced and trained properly to operate CSSCS.
- Coordinates acquisition of information to build the CSSCS database.
- Ensures that CSSCS operations are integrated into all OPLANS, OPORDS, and annexes.
- Ensures that TSOPs contain current CSSCS operations.
- Coordinates training, maintenance, and fielding of CSSCS.

2-85. The seven critical steps in establishing the CSSCS network and database are:

- Configure the unit task organization (UTO) IAW the current OPORD.

- Develop data flow diagrams and build message handling tables IAW the diagrams.
- Develop the commander's tracked item list (CTIL).
- Establish status threshold percentages.
- Determine and set support to supported relationships.
- Establish reporting procedures and schedules for the command.
- Establish continuity operations (CONOPS) pairing.

CSSCS DATA COLLECTION

2-86.   Units supply status and requirements can be entered manually using standard input forms (screens) at the brigade S4, DSB, DASB, or FSB CSSCS terminal.   Electronic interfaces to systems such as FBCB2 will greatly enhance the entry of unit data. CSSCS tracks unit information down to the company level.

2-87. Battle loss spot reports are input to the CSSCS node at any level (brigade, division, or corps).   Information is inputted either manually, as in the case of Class III, or by electronic transfer as when a STAMIS disk is downloaded into the CSSCS terminal. The CSSCS automatically updates the database.

2-88.   The data is then distributed to other CSSCS nodes. The primary means of communication is MSE.   CSSCS nodes then manipulate the data through a series of algorithms that are based on Army planning factors, the specified task organization, and the established support relationships.   This way, large quantities of data are presented in comprehensive, but useable, decision support information formats.   This information is graphically portrayed to the commander through green, amber, red, and black bubble charts, situational understanding, subordinate unit locations, and supply point status. Status may be projected out to four days using a combination of planning factors and manually generated estimates.   The commander and his staff can further evaluate simplified color status by accessing more detailed numerical data that supports the color status displayed.

2-89.   At the brigade level, two CSSCS devices (or nodes) will exist.   One is located in the brigade S1/S4 operational facility and the other in the DASB support operations section.   The brigade node is the point of entry in CSSCS for all organizational level CSS status and requirements of the brigade and its subordinate units. The brigade S1/S4 can also view the status of its supporting FSB/DASB and higher echelon supply points.   Through interfaces to the other ATCCS, a CSSCS node provides the brigade S1/S4 with the battlefield common picture.

2-90. The FSB, DASB, and DSB CSSCS node serves as the entry point for some supply point data that is not supported by a STAMIS and all organizational status of their elements.   The FSB, DASB, and DSB use CSSCS to:

- Provide common relative picture for CSS.
- Identify CSS commanders logistic posture.
- Enhance C2, decision support, planning, and forecasting.
- Provide CSS status reports for item status, unit status, and supply point status.
- Track and anticipate customer logistics status and requirements.
- Track supply point status, issues, receipts, and dues-in of CTIL items.

CSSCS INTERFACES

2-91. All CSSCS nodes will be able to interface with all other CSSCS devices and are also able to interface with other ATCCS. CSSCS may connect to FBCB2 via LAN at the brigade S1/S4 level. The FBCB2 will serve as a data source for CSSCS by passing aggregate data (LOGSITREP and PERSITREP) that has been rolled up from squad/section, platoon, and company. The LOGSITREP includes roll-ups of Classes I, III(P), III(B), IV, V, VII, and VIII. Class VII data also includes non-mission capable information. The CSSCS consolidates battalion data selected by the commander on the CTIL, up to 120 items. The CSSCS reports to higher HQ and then provides lower echelons the location of supply points via FBCB2. The FBCB2 transmits personnel strength information by officer/warrant officer/enlisted through the PERSITREP. This information is rolled up from platform through battalion to brigade S1 where it may be entered directly into CSSCS. The CSSCS uses this information to update its database on those personnel categories listed on the CTIL. The CSSCS updates supply point locations whenever supply points move in an electronic map overlay format and passes it down to platform level via FBCB2.

Chapter 3

Headquarters And Support Company (HSC)

ORGANIZATION AND MISSIONS

3-1. The HSC consists of a battalion headquarters and a supply company. The battalion headquarters provides command, control and administration support for all organic and attached DASB units. The battalion headquarters plans, directs, and supervises support for the AB and division cavalry squadron. The supply platoon provides receipt, issue, and limited storage of Class II, III(P), IV, and IX (common and air) items in support of the AB and division cavalry squadron. It also receives and issues Class I and VI at the field ration issue point, and receives and issues Class VII as required. The supply platoon maintains the STAMIS (SARSS-1 or GCSS-A). The Class III/V platoon provides Class III(B) and Class V support to its customers. It also operates a division rear aircraft refuel point for divisional and MEDEVAC aircraft. The DASB maintains one day of operational fuel requirements for the AB, division cavalry squadron and the DASB. The company also provides food service support for units organic and attached to the DASB. The DASB receives mortuary affairs support and water from corps units. The medical companies of the FSB and DSB provide level II medical based on METT-TC. See Figure 3-1 for a diagram of the DASB, HSC.
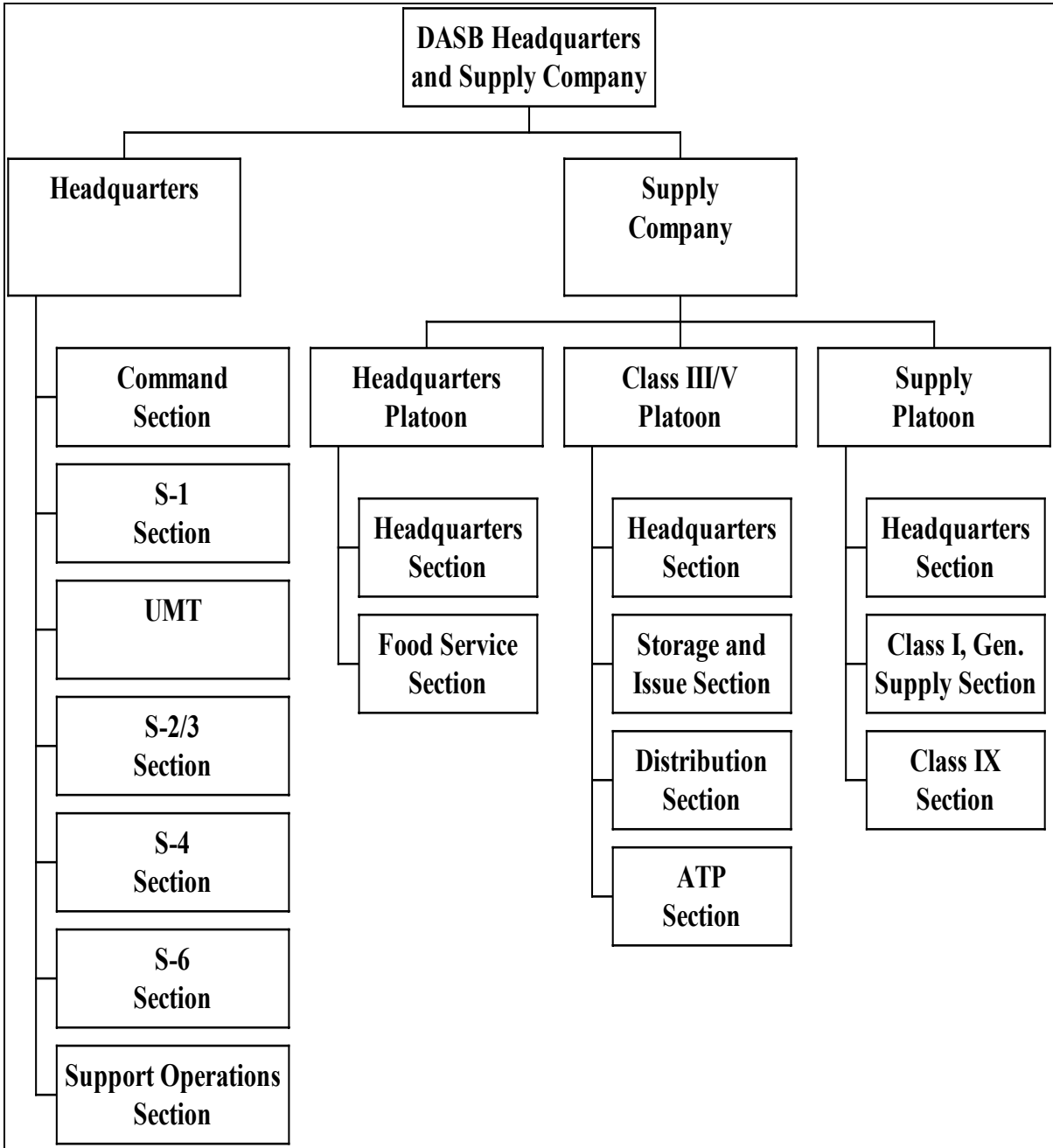
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│                         │ and Supply Company  │                           │
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│  │     UMT      │  │ Food Service │ │ Storage and  │ │ Class I, Gen.│     │
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│  │    S-2/3     │                   │ Distribution │ │   Class IX   │     │
│  │   Section    │                   │   Section    │ │   Section    │     │
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│  │Support Operations│                                                     │
│  │     Section      │                                                     │
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Figure 3-1. Division Aviation Support Battalion HSC

PERSONNEL AND SECTIONS

COMMAND SECTION

3-2.   The command section performs the command, control, communications, computer, intelligence, surveillance, reconnaissance (C4ISR functions). The command section consists of the commander, the executive officer (XO), the command sergeant major (CSM), coordinating staff officers, and special staff. Staff officers supervise and coordinate the functions of subordinate sections.   Command section staff officers perform duties and responsibilities common to all staff officers. FM 6-99 (101-5), Staff Organizations and Operations, chapter 4, discusses in detail these duties and responsibilities which include:

- Provide information.
- Develop estimates.
- Develop recommendations.
- Prepare plans and orders.
- Supervise subordinates actions.

3-3. Command section staff officers conduct staff mission analysis, develop estimates and plans, and implement policies and orders. They develop a reporting and monitoring system for staff operations in their area of expertise. They provide information updates to the battalion commander and exchange information with other staff sections on areas that are critical to mission accomplishment.

DASB Commander

3-4.   The DASB commander, commands all units assigned or attached to the battalion, and is the senior CSS operator for the AB and its attached and opcon units. He also has control of all elements in his assigned area for security and terrain management. He provides subordinate elements with clear missions, taskings, and statements of his intent. Upon receipt of a mission, the commander gives planning guidance to his staff. Once he receives the required information from his staff, he restates the purpose of the mission in a clear, concise statement. He directs the staff to pursue specific courses of action and directs the intelligence/operations officer (S2/S3) to issue the warning order to subordinate elements. The commander with his staff supervises the activities of subordinate units. They implement decisions, directives, and instructions that fulfill the commander's intent. The commander issues fragmentation orders (FRAGO) for required changes. The commander and staff of the DASB also advise the AB commander on DASB support as required.

3-5. The battalion commander's duties include the following:

- Single CSS operator that provides centralized distribution management and the CSS assets required to support the AB.
- Provides commander's intent and mission guidance.
- Reviews staff estimates, course of action (COA) analysis, and recommends the COA that best supports the AB'S mission.
- States his estimate of the situation and announces his decision.

Executive Officer (XO)

3-6. The XO is the principal assistant to the battalion commander. As second in command, he must understand the support operations, the tactical operations, and the non-CSS functions of the battalion. He supervises the DASB staff and coordinates assigned missions with subordinate unit commanders. Following command directives, he formulates staff operating policies. He also oversees the maintenance of the master policy file and supervises tactical operations center (TOC) operations.

3-7. The duties of the XO include:

- Supervises the battalion staff.
- Coordinates staff planning and response to the battalion commander's guidance.
- Disseminates time analysis limitations to all staff sections.
- Supervises staff mission analysis.
- Assumes command of the battalion when required.
- Develops, approves, and monitors staff operating policies.

Command Sergeant Major

3-8. The CSM is the principal enlisted advisor to the battalion commander on all matters pertaining to and dealing with the enlisted members and their families. He is an advisor and personal staff member whose general duties and responsibilities pertain to all levels of the command.

3-9. The CSM serves as the senior enlisted representative for the battalion. As an extension of the eyes and ears of the battalion commander, he maintains frequent contact with his subordinate units and monitors the pulse of the battalion.

3-10. The duties of the CSM include:

- Serves as the battalion commander's principal enlisted assistant.
- Maintains liaison with the AB's command sergeant major.
- Provides the battalion commander information on the status of enlisted matters.

- Serves as the battalion's senior enlisted master trainer. The CSM is critical to identifying training requirements for individuals, crews, battle staff, units and leaders. The CSM ensures training solutions are resourced, executed, and assessed to satisfy mission essential task list (METL) and battle tasks.
- Ensures that new soldiers/leaders replacement training is conducted.
- Ensures training and development of first sergeants, battle staff NCOs, and platoon sergeants within the battalion.
- Emphasizes training in field crafts (command post set up, field sanitation, erect field tents, etc…).
- Emphasizes training in force protection, including marksmanship, fortifications, convoy operations, NBC, and combat lifesaver.
- Demonstrates expertise in operation of battalion equipment such as weapons, vehicles, generators, communications, and automation.
- Demonstrates expertise in FBCB2 (call for support).
- Understands ongoing missions of his unit(s) and supported headquarters.
- Engaged in medical evacuation and mortuary affair operations.
- Identifies and helps resolve any battle field sustainment problems.

S1 Section

3-11.   The battalion personnel officer (S1) is the DASB commander's human resource manager. He advises the commander on administrative and personnel matters. He coordinates personnel service support, including personnel, administrative, finance, combat health services, public affairs, and legal support. The S1 develops the battalion's administrative SOP and, with the S4, prepares the administrative/logistics portion of the battalion tactical SOP. He participates in the OPORD process and develops administrative annex materials. He coordinates personnel service support with other staff elements, including mortuary affairs (MA) and combat health service support. The S1 section consists of personnel services specialists and a legal specialist. Typically, the S1 collocates with the S4 section near the DASB CP. This allows cross training of personnel and makes continuous operations easier. Guidance on S1 layouts is in TC 12-17. The S1 trains PAC personnel to execute their functions and internal procedures. Primary S1 responsibilities focus on strength accounting, casualty reporting, personnel actions, and replacement operations.

3-12. The S1 must coordinate with the S3, S4, support operations officer, and S6 to establish and manage the CSSCS network and database. S1 tasks include:

- Gather, input, and maintain personnel data in the CSSCS database.
- Develop the DASB personnel commander's tracked item list (CTIL).
- Set status thresholds for personnel.

3-13. Other responsibilities include matters dealing with:

- Mail.
- Awards and decorations.
- Soldiers' pay.
- Military justice.
- EPWs and stragglers.
- Publications and forms.
- Hometown news releases.
- Distribution center operations.
- Preparation of soldiers for overseas movement.

3-14. The S1 coordinates preparation for overseas movement with the DISCOM S1, DASB company commanders, CSM, and other battalion staff officers. Medical records must be current, family care plans developed, identification cards and tags available, and security clearances checked. Appendix Y of TC 12-17 presents a thorough preparation for overseas movement (POM) checklist.

3-15. The S1 prepares the DASB personnel estimate. It projects personnel losses and replacement requirements based on the tactical situation. From the DISCOM S1, it gets the DISCOM personnel estimate, which includes replacement projections. The S1 passes this information to the DASB commander, who sets replacement priorities for the battalion. The PAC also provides the DSB and FSB medical companies with projected DASB casualties for evacuation planning. The S1 maintains and processes personnel information through data input to standard installation personnel system (SIDPERS). Information received from subordinate units as hasty strength reports, casualty feeder reports, and battle roster updates is input to SIDPERS. This information updates the personnel summary and personnel requirement report and other SIDPERS data. The S1 prepares a task force personnel summary when subordinate units are task-organized. The S1 sends strength reports to the DISCOM and provides the casualty feeder reports to the supporting personnel service company. In support of the DASB personnel function, the S1 also monitors MA activities and reconciles casualty reports with MA records for DASB soldiers. He also coordinates requirements with the DASB S4 for

MA items for DASB personnel. He also ensures that the section follows proper next-of-kin notification procedures.

3-16. Other functions of the S1 in support of the DASB include:

- Processing personnel replacements.
- Projecting numbers of enemy prisoners of war (EPW) and civilian internees.
- Determining total transportation requirements for losses, replacements, and EPWs and submitting transportation requests to the S4.
- Providing administrative services if the tactical situation permits.
- Observing the tactical situation and preparing to assume the CP's role in an emergency.
- Coordinating through the DISCOM S1 to obtain finance services support from the servicing finance support unit.
- Determining requirements for mail distribution.
- Coordinating and supervising postal operations.
- Coordinating morale, welfare, and recreation.
- Coordinating with the DISCOM medical operation section and DASB S2/S3 to develop a combat lifesaver program for DASB personnel.
- Coordinating civil-military operations and law and order activities within the DASB. Considerations include ensuring that civilian activities do not interfere with DASB operations. The DASB commander understands cultural implications, and the DASB fulfills legal obligations to the local population.
- Functioning as DASB public affairs officer when appointed by the commander.
- Coordinating with the DSB/FSB medical clearing stations for return to duty of DASB personnel.

Unit Ministry Team (UMT)

3-17. The DASB commander is responsible for the religious program in his unit. The DASB UMT is the staff section that provides religious support (RS) to the battalion. Its primary mission is to advise the commander on RS to elements of the DASB and to units located in the ASA. It advises the commander on unit morale and ethical issues and to meet the religious and spiritual needs of the soldiers. It also advises the commander on the role of indigenous religions in the area of operations.

3-18. The team consists of a chaplain and a chaplain assistant. The chaplain provides the clergy-related support to the unit. These include worship and prayer services, funeral and memorial services, and in-depth grief counseling. The chaplain assistant

provides the administrative and logistical management for the team as well as the team's security.

3-19.   Initially, the UMT develops an RS annex for the DASB OPORD/operations plan (OPLAN).   This annex is based on the brigade's RS plan and the commander's intent.   It addresses the priority of RS to the DASB and ASA. This includes UMT support to medical facilities, actions during mass casualty situations, support to EPW, and planning for worship, funeral, and memorial services.

3-20. During operations, the UMT keeps abreast of the situation by maintaining contact with the DASB S1 and S2/3. Through FBCB2, the UMT can receive calls for RS directly from the individual company headquarters sections and the DASB staff through the religious support call for support FBCB2 screen.

3-21.   Because the team is small and the mission sensitive, it is critical that the commander allow the UMT as much autonomy as possible.   This will provide the most responsive and effective support to the soldiers.

S2/3 Section

3-22.   The S2/3 officer is the operations, security, and training officer. He is responsible for internal DASB operations. The S2/3 advises and assists the DASB commander in tactical planning, coordinating, and supervising the communications, operations, training, and security functions of the battalion. The S2/3 is the intelligence officer and informs the DASB commander on all intelligence preparation of the battlefield (IPB) information. His role and that of the support operations officer require that they maintain constant contact. The S2/3 is responsible for writing and reviewing the battalion tactical standard operating procedure, monitoring the tactical operations of the DASB, making recommendations to the commander, publishing orders, and supervising implementation of plans and orders. He maintains the current friendly and enemy situations, and obtains maps and prepares overlays. He positions units within the ASA and plans ASA security, which includes planning the equipment and personnel for the base cluster reaction force. Also, in coordination with the military police (MP) element leader, he develops and implements the traffic circulation plan for the ASA. Ensures the ASA security plan is integrated into the overall brigade rear operations plan. Guidance appears in FMs 55-30 and 19-4.

3-23.   The S2/3 also plans and coordinates tactical movements, conducts route reconnaissance, supervises tactical road marches, receives closing reports, and supervises appropriate staff activities during movement.

3-24.   The nuclear, biological and chemical (NBC) non commissioned officer (NCO) prepares the NBC defense annex to OPLANs/OPORDs and SOPS. He monitors NBC threats and predicts fallout and collects, evaluates, and distributes NBC reports.

He monitors contamination patterns and disseminates NBC data. He prepares vulnerability analyses of significant targets in the DASB's area of operations (AO). The NBC NCO coordinates surveys and determines requirements for NBC protective shelters. He also recommends priorities for decontamination support and monitors and assists in the employment of NBC teams. He develops response procedures for NBC defense and makes recommendations to the commander on mission oriented protective posture (MOPP) levels. He also prepares NBC reports 1 through 6. The duties of the NBC NCO include the following:

- Conducts continuous logistics preparation of the battlefield.
- Supervises the NBC program.
- Prepares tactical NBC plans.
- Conducts weather analysis and nuclear vulnerability assessment analysis.
- Maintains the radiation exposure status for subordinate units.
- Plans for decontamination support to subordinate units.

3-25. The intelligence analyst develops procedures for handling and using or disposing of enemy equipment and documents. He supervises the handling of enemy defectors and materiel, and monitors EPW collection point activities for the DASB. He also is responsible for obtaining classified maps required by DASB units, and is responsible for the preparation of the following documents:

- Intelligence annex to orders.
- Daily intelligence summary for subordinate units.
- Operations estimates.
- Intelligence estimates updates. Paragraphs 2 and 3 of the DASB OPORD/OPLAN.
- Essential elements of information (EEI) for inclusion into the OPORD.

3-26. He is also responsible for the following tasks:

- Coordinates tactical intelligence activities between subordinate units, and brigade S3.
- Maintains a weather factor analysis matrix.
- Performs terrain analysis of the area of responsibility (AOR).
- Prepares situation, event, and decision support templates.
- Supervises preparation of the intelligence portion of OPLANs/OPORDs and maps.
- Develops the intelligence estimate.
- Distributes the analysis of the AO, as appropriate.
- Identifies intelligence collection requirements.

- Assesses enemy vulnerability and probable courses of action.
- Disseminates intelligence to subordinate units.
- Prepares reports on captured enemy materiel.

3-27.   Section chief. The duties of the section chief include the following:

- Operates the rear operations frequency modulation (FM) net.
- Advises on base security.
- Coordinates with explosive ordnance disposal (EOD) detachments/teams.
- Determines which group facilities are vulnerable to damage.
- Supervises rear operations training.

S4 Section

3-28. The DASB S4 provides technical supervision and assistance for unit-level support within the battalion. He is responsible for preparing the logistics estimate and making recommendations to the commander on internal logistics activities. He also writes, in coordination with the S1, the service support annex to the DASB OPORD/OPLAN. He supervises personnel in the S4 section.

3-29. The S4 section supervises and monitors DASB company supply activities. It coordinates with them on locations of internal supply and services activities. It processes requests for replenishing basic loads of all DASB elements, and monitors the request of Class I, II, III, IV, V and VII items. It requests and issues all required common table of allowances (CTA) 50-900 items within the DASB. It monitors requests that DASB elements submit to the battalion maintenance section, of the GMC for Class IX items. The section also monitors the status for all battalion elements in the area of operational readiness of equipment. It prepares the Class III forecast for the DASB and submits it to the support operations section.

3-30. The S4 also reports on the overall internal logistics situation. He reports significant problem areas and major deficiencies in basic loads. He should also include an account of significant incidents, which hinder internal logistics operations.

3-31. The S4 develops and maintains administrative movement plans for all modes of transportation using FM 55-series publications. Unit movement plans should include:

- Security requirements.
- Logistics coordination requirements.
- Load plans for vehicle, aircraft, and rail cars.
- Duties of unit movement personnel.
- Preparation of transportation documents.

- Description (weight, length, width, and height) of outsized, and unusual cargo.
- Coordination with the DISCOM MCO.

3-32.   S4 section coordinates with the S1 on unit strength and replacement data to project logistics requirements. Together they also ensure DASB replacements are issued all authorized equipment. The S4 also coordinates movement plans with the S2/S3 and monitors field feeding and sanitation activities within the DASB. He consolidates transportation requirements for DASB units and passes them to the support operations section. The S4 coordinates through the DISCOM S4 to obtain payment support for local procurement and imprest fund operations from the servicing corps finance support unit.

3-33.   The unit maintenance officer (UMO), in the battalion maintenance platoon of the GMC, coordinates DASB maintenance operations. He is the equipment technical expertise on all ground level maintenance. The UMO works closely with the GMC maintenance control section (MCS). He consolidates DASB unit maintenance reports. He provides the commander and other staff sections with equipment status reports. He also supervises controlled substitution in accordance with (IAW) the commander's priorities. He monitors DASB ASL, PLL, and coordinates recovery of DASB equipment.

3-34. The UMO uses ULLS-G to produce the Army materiel status system (AMSS). The Army material status system (AMSS) replaced manual readiness reporting on the front side DA Form 2406. The ULLS-G box is located in the battalion maintenance platoon headquarters of the GMC. The UMT is responsible for preparing the readiness report for the DASB commander to sign. The duties of the S4 officer include the following:

- Develops the internal logistics estimate.
- Keeps DASB staff informed of mission supportability from an internal logistics viewpoint.
- Monitors the unit supply and unit maintenance operations of subordinate units.
- Acquires and assigns facilities.
- Provides advice on food service operations and the command.
- Monitors property book activities.

3-35. The duties of the unit maintenance officer (UMO) include the following:

- Ensures mission essential equipment is available to accomplish mission support.
- Controls battle damage assessment and repair (BDAR), recovery, and maintenance operations internal to the DASB.

- Determines maintenance priorities for DASB equipment with battalion XO.
- Coordinates with the MCS on AMSS reporting.
- Monitors the battalion's army oil analysis program (AOAP).

S6 Officer

3-36. The communications officer (S6) supervises communications and security (COMSEC) and controlled cryptographic items (CCI) activities. The signal specialists install, operates, and maintains communications equipment. This entails the establishment and operation of the net control station (NCS) for the DASB net. They ensure communication links with higher, adjacent, subordinate, and supported units. They plan and implement backup means of communications and ensure radio communications exist during a move between the start point (SP) and release point (RP), and along the route of march. They also develop and implement an ASA security communications system. The S6 is responsible for the full range of tasks associated with network management, systems administration and systems/software security for all tactical automation IAW FM 24-7.

3-37. As systems administrator and system/software security manager the S6 performs all tasks normally associated with information technology (IT) operations ranging from issuing passwords, installing anti virus software, and performing CSSCS network management functions. The S6 works closely with the combat service support automation officer (CSSAMO) to resolve applications problems with CSS STAMIS and CSSCS. The S6 is also responsible for installing and operating local area networks in support of the DASB operations. He is responsible for determining requirements and exercising staff supervision over communications services related to DASB operations. He advises the commander, staff, and subordinate units on communications matters.

Support Operations Section

3-38. This section, under the direction of the support operations officer, provides centralized, integrated, and automated command, control, and planning for all distribution management operations within the battalion. It coordinates with logistics operators in the fields of supply, maintenance, medical, mortuary affairs, and movement management for the support of all units assigned or attached in the brigade area. Its primary concern is customer support and increasing the responsiveness of support provided by subordinate units. It continually monitors the support and advises the battalion commander on the ability to support future tactical operations. With GCSS-A, CSSCS, FBCB2, and MTS the support operations section has access to more information and receives information near real time. Therefore, support operations possesses the capability to view the situational understanding and combat power in the maneuver units. This allows support

operations to identify problems quicker and allocate resources more efficiently. CSSCS gives support operations the visibility of the logistics status from the DASB back to corps. This battle staff section serves as the POC for supported units. It directs problems to appropriate technical experts within subordinate branches. The duties of the support operations officer include the following:

- Conducts continuous logistics preparation of the battlefield.
- Plans and coordinates for aerial resupply and plans for landing zones (LZs) vicinity of the ASA.
- Develop CSS synchronization matrix.
- Submit CSS forecasts to division support operations.
- Manages all flatracks throughput to and retrograding from the brigade support area.
- Coordinates and provides technical supervision for the DASB's CSS mission; which includes supply activities, maintenance support, combat health support, and coordination of transportation assets.
- Identifies tentative force structure and size to be supported.
- Coordinates the preparation of the support operations estimate on external support.
- Provides support posture and planning recommendations to the DASB commander.
- Sets up and supervises the logistics operations center.
- Provides centralized coordination for units providing support to the brigade.
- Coordinates with AB S3 air for air routes for supply and medical support.
- Analyzes the impact of CSSCS reports.
- Advises the battalion commander on the status of logistics support.
- Coordinates logistics support for units passing through the brigade's area.
- Analyzes contingency mission support requirements.
- Revises customer lists (as required by changing requirements, workloads, and priorities) for support of tactical operations.
- Coordinates external logistics provided by subordinate units.
- Advises the battalion commander on the supportability of DASB support missions and of shortfalls that may impact on mission accomplishment.
- Serves as the single point of coordination for supported units to resolve logistics support problems.
- Plans and coordinates contingency support.

- Develops supply, service, maintenance, and transportation policies.

3-39. The support operations officer will perform functions as the CSSCS manager. The support operations officer must work in conjunction with the S2/3, S4, and S6 to establish and manage the CSSCS network and database. The support operations officer must maintain direct support supply point and maintenance data entered into the system. Specific tasks for the support operations officer are:

- Gather, input, and maintain supply point logistics data in the system. He must also conduct the SAMS-2 and SARSS download to CSSCS to capture DS maintenance data.
- Develop the CTIL to track supply point items of interest to the commander.
- Set message handling tables to correctly route supply logistics messages.
- Set status thresholds for supply point items.
- Establish reporting times for subordinate direct support units.
- Set support to supported relationships to reflect which supply points support which units.
- Establish and set continuity operations (CONOPS) pairing IAW guidance from the division G4.

3-40. The duties of the support operations sergeant include the following:

- Conducts continuous logistics preparation of the battlefield.
- Analyzes trends and forecasts of requirements for supplies and equipment based on priorities and procedures.
- Coordinates major end item resupply activities within the group.
- Coordinates activities internal to the support operations section.

Staff Judge Advocate (SJA)

3-41. The DASB does not have SJA support within its staff. However, the division SJA section supports the division with legal support operations as far forward as required. It provides subordinate brigade and other commanders with a lawyer to serve as a member of the subordinate commander's special staff, as required. In addition to advising on defense and prosecution issues, the DASB commander can call upon the SJA for advice and assistance when dealing with issues such as:

- International agreements regarding the status of forces and installations on foreign soil.

- Contingency contracts and regular acquisitions of goods and services needed for entry into, and sustainment of the force within an area of operations.
- Compliance with the law of land warfare and in the treatment of EPW, retained persons, internees, and refugees.
- Claims against the United States and against soldiers or the unit under Article 139, unified code of military justice (UCMJ).
- Investigation and disposition of allegations of war crimes and violations of the law of land warfare.
- Compliance with the law of land warfare in operational seizure and use of and reimbursement for foreign, real, and private property.
- Compliance with domestic and international environmental law and regulation.
- Coordination of the commander's legal requirements with the SJA in the main CP.

BATTLE STAFF

3-42. The DASB headquarters battle staff is the competent and confident team that allows the DASB commander to be a practitioner of battle command. The combination of the battalion and supporting staff elements form the commander's battle staff. Listed below are the battle staff roles and an example of a portion of a logistics synchronization matrix, see Figure 3-2, that assists the battle staff in the execution of their respective roles:

- Maintain situational understanding.
    - Install information management architecture.
    - Train members of the battle staff.
    - Access available CSS and operational databases.
    - Receive, process and transmit information.
    - Know the current CSS, operational, and geo-political situation.
    - Know current CSS and other key locations.
- Synchronize logistical and operational activities.
    - Analyze data from multiple sources/disciplines.
    - Match capabilities to requirements efficiently.
    - Coordinate CSS activities with all involved.
    - Optimize CSS resources and time.
- Anticipate future operations (branches/sequels)
    - Understand higher/subordinate/supported commanders' intents.
    - Conduct logistics preparation of the battlefield (LPB).

- Know OPLANs/CONPLANs of involved HQ's.
- Conduct intelligence preparation of the battlefield (IPB)
- Employ liaison team(s) at key HQ's.
- Workload battle staff planners.
- Conduct wargaming drills.
- Identify projected CSS capabilities available.
- Identify projected CSS unit displacements.
- Identify external resources/solutions required.

- Make recommendations, decisions; and, execute those decisions.
  - Conduct risk assessments.
  - Employ deliberate decision making process.
  - Employ quick decision making process.
  - Provide clear and understood verbal orders.
  - Provide timely and accurate responses to unit issues.
- Maintain current estimates, status, and data
  - Maintain one continuously updated estimate.
  - Display estimate in the battle staff area.
  - Provide command group with periodic estimate updates.
  - Transmit estimate electronically as needed.
- Maintain secure/non-secure, assured communications with key HQ's.
  - Exploit communications and other technologies.
  - Train battle staff on available technology.
  - Employ alternate means of communications.
  - Coordinate with supporting signal units/HQ's.
  - Provide Assault CP with communications/automation package.
- Receive, prepare, coordinate, and disseminate plans, orders, annexes, reports, and taskings.
- Integrate augmentation forces
  - Coordinate equipment, supply, and soldier link-up.
  - Exchange SOP and policies.
  - Provide/receive SITREP/briefings.
  - Establish command/technical/support relationships.
  - Provide liaison team to assist force.
  - Assess soldier/unit readiness shortfalls.
  - Reduce or eliminate unit readiness shortfalls.
  - Employ augmentation forces.

H HOUR	H+4	H+8	H+12	H+16	H+20
D-DAY	D+1				
DAY/NIGHT					
Phase	Phase I				
ENEMY ACTION	Defends in sector with two brigades. 13th IQ in the west and 14th in the east.	Continues Defense	Continues Defense	Shifts Priority to OBJ APPLE	Shifts Priority to OBJ APPLE
DECISION POINT	What is the level of success that 4AD is having Along Route Jackson?	What is the level of success that 4AD is having Along Route Jackson?	Does 4AD take operational control of 3rd BDE?	Does 4AD take operational control of 3rd BDE?	Is 9LID and 230th SAB attack to seize OBJ apple being successful?
MANEUVER	3rd BRIGADE LD/LC. All other elements areREDCON1.	3rd BRIGADE arrive MCP 2. 1st BRIGADE SP. 2nd Bde REDCON1.	3rd BRIGADE prepared to support 4AD ATK on OBJ Glory.1st BRIGADE LD, 2nd BRIGADE SP	3rd BRIGADE prepared to support 4AD ATK on OBJ Glory.1st BRIGADE MCP2, 2nd BRIGADE LD	3rd BRIGADE arrives TAA Hood. 1st BRIGADE PL Colt. 2nd BRIGADE MCP 2.
FIRE SPT	FSCL is PL NUT and PL Cougar. CFL PL Aqua. RFA TAA Hood/Bragg. NFA OBJ apple.	FSCL is PL NUT and PL Cougar. CFL PL Aqua. RFA TAA Hood/Bragg. NFA OBJ apple.	FSCL is PL NUT and PL Cougar. CFL PL Aqua. RFA TAA Hood/Bragg. NFA OBJ apple.	FSCL is PL NUT and PL Cougar. CFL PL Aqua. RFA TAA Hood/Bragg. NFA OBJ apple.	FSCL is PL NUT and PL Cougar. CFL PL Aqua. RFA TAA Hood/Bragg. NFA OBJ apple.
MOB/SURV	Focus is on Mobility	Focus is on Mobility	Focus is on Mobility	Focus is on Mobility	Focus is on Mobility
C2	Located with 1st Bde. Rear with DISCOM	Located with 1st Bde. Rear with DISCOM	4th AD potentially assumes control of 3rd BRIGADE	4th AD potentially assumes control of 3rd BRIGADE	Located with 1st Bde. Rear with DISCOM
MAN/MED					
SUSTAIN					
FIX					
ARM					
FUEL					
MOVE					

Figure 3-2. Synchronization Matrix

HSC COMPANY HEADQUARTERS

3-43. The company headquarters provides the company with administration, supply, and food services support for the battalion for all assigned or attached personnel. The company provides overhead and billeting support for the HSC, DASB. It is responsible for the command and control, and security of the company. The company headquarters consists of a headquarters section, and a food service section. Functions of the company headquarters are to:

- Maintain load plans.
- Perform route reconnaissance.
- Organize the unit for movement and issue movement orders to HSC personnel.
- Request additional transportation through the DASB S4.
- Coordinate with the DASB S2/S3 on the quartering party.
- Provide C2 of HSC in response to an air or ground attack.
- Coordinate base defense.
- Establish communications.
- Determine placement of NBC assets in the headquarters area.
- Function as the HSC armorer.

Company Commander

3-44. The HSC company commander is responsible to the DASB commander for the discipline, combat readiness, training of the HSC, and direct support to the AB and division cavalry squadron.

3-45. The commander is responsible for everything the HSC does or fails to do. He must be proficient in the tactical employment of the company and its assigned and attached CSS elements. The commander must also know the capabilities and limitations of the company's personnel and equipment in performing the CSS mission as well as those of CSS elements attached to him. Additionally, his responsibilities include leadership, discipline, tactical employment, training, administration, personnel management, supply, maintenance, communications, and sustainment activities of the company.

3-46. These duties require the commander to understand the capabilities of the company's soldiers and equipment and to know how to employ them to best tactical and CSS advantage. At the same time, the commander must be well versed in enemy organizations, doctrine, and equipment.

3-47. Using this knowledge, the commander prepares his unit for combat operations using troop-leading procedures. Ultimately, he must know how to exercise command effectively and decisively. He must be flexible, using sound judgment to make correct

decisions quickly and at the right time based on the higher commander's intent and the tactical situation. He must be able to issue instructions to his subordinate leaders in the form of clear, accurate combat orders and then he must ensure that the orders are executed.

3-48. The company commander's responsibility in combat is twofold. He will:

- Accomplish all missions assigned to the HSC in accordance with the DASB commander's intent and will support the BN/TF commander's scheme of maneuver with CSS.
- Preserve the fighting capability of the supported units and the HSC. Must maintain continual communications with higher, lower, and adjacent units.

First Sergeant (1SG)

3-49. The 1SG is the company's senior NCO and normally is its most experienced soldier. He is the commander's primary CSS and tactical advisor and he is an expert in individual and NCO skills. He is the company's primary internal CSS operator and helps the commander and support operations officer to plan, coordinate, and supervise all logistical activities that support the company's mission. He operates where the commander directs or where his duties require him. The 1SG's specific duties include the following:

- Execute and supervise routine operations. The 1SG's duties may include enforcing the tactical SOP; planning and coordinating training; coordinating and reporting personnel and administrative actions; and supervising supply, maintenance, communications, and field hygiene operations.
- Supervise, inspect, and/or observe all matters designated by the commander. For example, the 1SG may observe and report on the company's base, proof fighting positions, or designing and ensuring emplacement of the defensive perimeter.
- Assists in planing, rehearsing, and supervising key logistical actions in support of the tactical mission. These activities include resupply of Class I, III, and V products and materiels; maintenance and recovery; medical treatment and evacuation; and replacement/return to duty (RTD) processing.
- Assists and coordinates with the support operations in all critical functions.
- As necessary, serves as quartering party NCOIC.
- Using FBCB2 transmit company rollup reports LOGSITREP and PERSITREP. Transmit call for support (CFS) for immediate resupply for Class III, IV, V or reovery misions suing FBCB2 (as required).

- Conduct training and ensures proficiency in individual and NCO skills and small-unit collective skills that support the company's mission essential task list (METL).
- Receives incoming personnel and assigns them to subordinate elements as needed.
- He is responsible for the medical evacuation of sick, injured, and wounded soldiers to the supporting medical treatment facility.
- He is responsible for the evacuation of soldiers killed in action to the supporting graves registration collection point.

3-50. In conjunction with the commander, establish and maintain the foundation for company discipline.

CLASS III/V PLATOON

3-51. The Class III/V platoon provides Class III(B) and Class V support to its customers. It also operates a division rear aircraft refuel point for divisional and MEDEVAC aircraft. The DASB maintains one day of operational fuel requirements, in tankers and one fuel system supply point (FSSP), for the AB, division cavalry squadron and the DASB. The platoon is responsible for receipt, storage, issue, and quality control of bulk Class III/V. The platoon must be able to maintain 24 hours operation of organic equipment. The platoon contains FBCB2 and movement tracking system (MTS) to increase control and efficiency of support assets. The platoon consists of a headquarters section, a storage and issue section, a distribution section, and an ammunition transfer point (ATP) section.

Storage and Issue Section

3-52. This section is responsible for establishing and operating the Class III point in the DASB. It provides supply point distribution for the general support aviation support battalion and the DASB. The section has the capability of establishing one fuel system supply point (FSSP) and is able to refuel aircraft in the division rear. In an emergency it may refuel aircraft outside the ASA. This section is capable of refueling 8 aircraft simultaneously.

Distribution Section

3-53. The Class III/V distribution section provides unit distribution of bulk fuel and ammunition to the AB and the division cavalry squadron. This section also has the capability to conduct refuel on the move operations using the hot tactical aircraft refuel system (HTARS) equipment. The section is manned for only two systems at a time. There are two HTARS in the section. The systems are used for refuel on the move (ROM) of the unit. The section does not operate a forward area rearm/refuel point (FARP) operation.

Ammunition Transfer Point Section

3-54.   The Class V ATP section provides ammunition transfer capability to the units supported by the DASB.   It provides unit distribution of ammunition to the AB and the division cavalry squadron.   This section DOES NOT have the capability to arm aircraft. Emergency arming must be coordinated externally.

SUPPLY PLATOON

3-55.   The supply platoon headquarters provides coordinated supervision of the distribution of Class I, II, III(P), IV, VII, and IX coming to or passing through the DASB. This section operates the SARSS for the DASB. Class IX requests are received via ULLS-G/A and SAMS.

Class I, General Supply Section

3-56. The general supply section provides Class I, II, III(P), and VII direct support to units supported by the DASB. The section receives, stores and issues Class II, IIIP, and IV; receives and issues Class VII. It also receives and issues Class I at the field ration issue point. It provides supply point distribution.

Class IX Section

3-57. The Class IX section supports the AMC and GMC by receiving, storing and issuing Class IX common and air. Prepares common, and aviation repair parts and components for retrograde.

Chapter 4

Ground Maintenance Company(GMC)

ORGANIZATION AND MISSION

4-1.   The GMC consists of a company headquarters, a battalion maintenance platoon, and a direct support maintenance platoon. The GMC provides field level maintenance for all DASB non-air items and direct support maintenance for all AB, and division cavalry squadron non-air items, including automotive/tracked vehicles, turrets, land combat missile systems, communications and electronics; and engineer, utility, power generation, and small arms equipment.
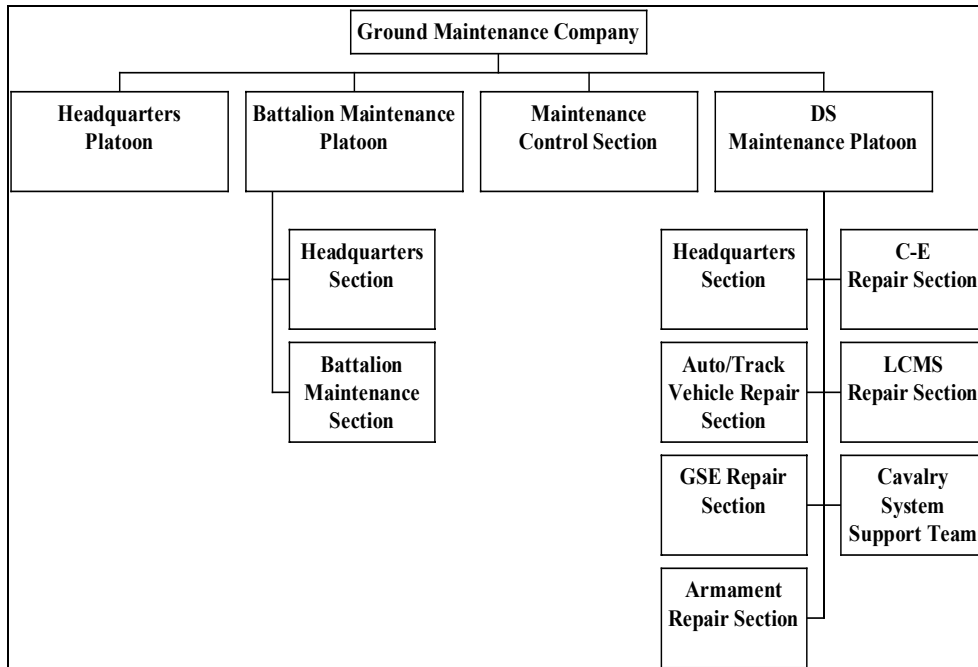
Figure 4-1. Ground Maintenance Company

PERSONNEL AND SECTIONS

COMPANY HEADQUARTERS

4-2.   The company headquarters provides the company with administration, supply, and food services support for the battalion for all assigned or attached personnel.   The company provides overhead and billeting.   It is responsible for the command and control, and security of the company.   Functions of the company headquarters are to:

- Maintain load plans.
- Perform route reconnaissance.
- Organize the unit for movement and issue movement orders to GMC personnel.
- Request additional transportation through the DASB S4.
- Coordinate with the DASB S2/S3 on the quartering party.
- Provide C2 of GMC in response to an air or ground attack.
- Coordinate base defense.
- Establish communications.
- Determine placement of NBC assets in the headquarters area.
- Function as the GMC armorer.

BATALLION MAINTENANCE PLATOON

4-3.   The platoon headquarters provides C2 to accomplish the platoon's mission. It provides unit-level administrative, supply, and technical maintenance support to elements of the platoon.

Maintenance Section

4-4.   The   section   conducts   consolidated   organizational maintenance for DASB units, including the army maintenance management system (TAMMS) functions, dispatching of DASB equipment,   scheduled   services,   diagnostics/troubleshooting, unscheduled maintenance, quality assurance, organic recovery, and repair parts supply (limited to prescribed load list (PLL) items. The section personnel also serves as the nucleus for BDAR. The purpose of BDAR is to make on-site determinations on whether an inoperable piece of equipment should be repaired on-site, recovered to a maintenance collection point, or evacuated to a maintenance activity with the capability of making the repairs. The battalion maintenance section utilizes ULLS-G to perform the unit level maintenance management functions.

MAINTENANCE CONTROL SECTION

4-5.   The maintenance control section performs the DS maintenance management functions in support of all assigned maintenance sections.   The MCS performs its maintenance management functions using SAMS-1. The section controls work flow through the shop sections and ensures the sections maintain appropriate equipment accountability. The MCS also includes an inspection section responsible for technical inspections and quality control of all DS maintenance functions. These inspectors also serve on the BDAR teams.

4-6. The maintenance control officer is the primary manager of DS maintenance within the GMC. He controls, coordinates with, and supervises each of the maintenance shops and the CSST.

DIRECT SUPPORT MAINTENANCE PLATOON

4-7. The platoon headquarters provides administrative control for personnel in the six sections that make up the GMC DS maintenance platoon.   The platoon consists of six sections; automotive/tracked vehicle repair, ground support equipment repair, armament repair, communications and electronics repair, land combat missile systems repair, and the cavalry system support team (CSST).

Automotive/Tracked Vehicle Repair Section

4-8.   The section performs base shop and on-site DS level maintenance in support of elements of the aviation brigade, division cavalry squadron, and DASB.   It performs repairs through replacement of major components, including major assemblies and line replaceable units (LRU). Examples of components this section replaces include engines, transmissions, power train components, electronic components, hydraulics, and steering controls.

Ground Support Equipment Repair Section

4-9. The GSE repair section performs base shop and on-site DS level maintenance on power generation equipment, construction equipment, air conditioner units, refrigeration equipment, heaters, utility packs, water purification units, and NBC equipment.

Armament Repair Section

4-10. The armament repair section performs base shop and on-site DS level maintenance on the following:

- Tank turrets; turret, cupola, loading, firing, and recoil mechanisms.
- Fire control systems; laser range finders, electronic ballistic computers, and tank thermal sights.
- Fire control instruments; binoculars, telescopes, aiming circles, and range finders.
- Armaments; rifles, mortars, pistols, and machine guns.

- Test, diagnosis, and repair armament using DSESTS.

Communications and Electronic Repair Section

4-11. The CE repair section performs base shop and on-site DS level maintenance on the following:

- Radio receivers, transmitters, and associated equipment.
- Computer terminals and facsimile equipment.
- Manual/semiautomatic and some transportable automatic electronic telephones, and central office equipment.
- Night vision equipment.
- Certain electronic fire control and alignment devices.

4-12. The bulk of the section's mission is normally performed within the base shop facility. However, the maintenance control officer may tailor the section to support specific on-site maintenance missions.

LAND COMBAT MISSILE SYSTEM (LCMS) REPAIR SECTION

4-13. The LCMS repair section provides field maintenance support for all land combat missile Systems within the aviation brigade. The section has the capability to tailor itself to perform on-site test, repair and/or direct exchange of LCMS-related assemblies.

CAVALRY SYSTEMS SUPPORT TEAM (CSST)

4-14. This cavalry system support team provides habitual DS level maintenance support to the division cavalry squadron. The team normally works in the cavalry squadron field trains area. It is reinforced with other GMC elements as required. The team's repair capabilities include: automotive/tracked vehicles, armament/fire control systems, ground support equipment, and communications-electronics equipment.

Chapter 5

Aviation Maintenance Company (AMC)

ORGANIZATION AND MISSIONS

5-1. The AMC provides intermediate level aviation maintenance to the division's aviation brigade, the division cavalry squadron, and corps medical aircraft operating in the division area. The AMC provides intermediate level avionics maintenance support, aircraft airframe, power plant, armament, and component repair. The AMC's mobile maintenance support teams (MSTs) perform AVIM forward maintenance support. These forward repair/recovery teams provide on-site technical assistance, backup aircraft recovery, to include rigging support, and retrograde of repairable aviation equipment by ground or by air. The AMC provides maintenance test flight evaluator support to supported AVUM units. The AMC will form a collection and classification point for aircraft peculiar materiel and provide fueling and defueling service for supported aircraft while in AVIM maintenance. This unit performs unit level maintenance on all organic equipment, except for communications and electronics (CE) and communications security equipment. See Figure 5-1. The aviation maintenance company consists of:

- Company headquarters.
- Production control section.
- Maintenance test flight section.
- Quality control section.
- Tool crib/shop stock section.
- Systems repair platoon.
  - Attack systems repair section.
  - General support aviation battalion (GSAB) systems repair section.
  - Cavalry systems repair section.
  - MEDEVAC systems repair section.
- Aircraft maintenance operations platoon.
  - Armament repair section.
    ⇒ Fire control system shop.
    ⇒ Weapons system shop.
  - Avionics repair section.
    ⇒ Communications and electronics shop.
    ⇒ Navigation/flight control/radar shop.
  - Electric repair section.
    ⇒ Electrical repair shop.
    ⇒ Battery repair shop.

- Sub-systems repair section.
    ⇒ Power plant shop.

  Structural shop.
    ⇒ Power train/NDI/pneudralic shop.
- Aircraft service/fuel section.

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                    ┌──────────────────┐
                    │      DASB        │
                    │ Aviation Maintenance │
                    │     Company      │
                    └──────────────────┘
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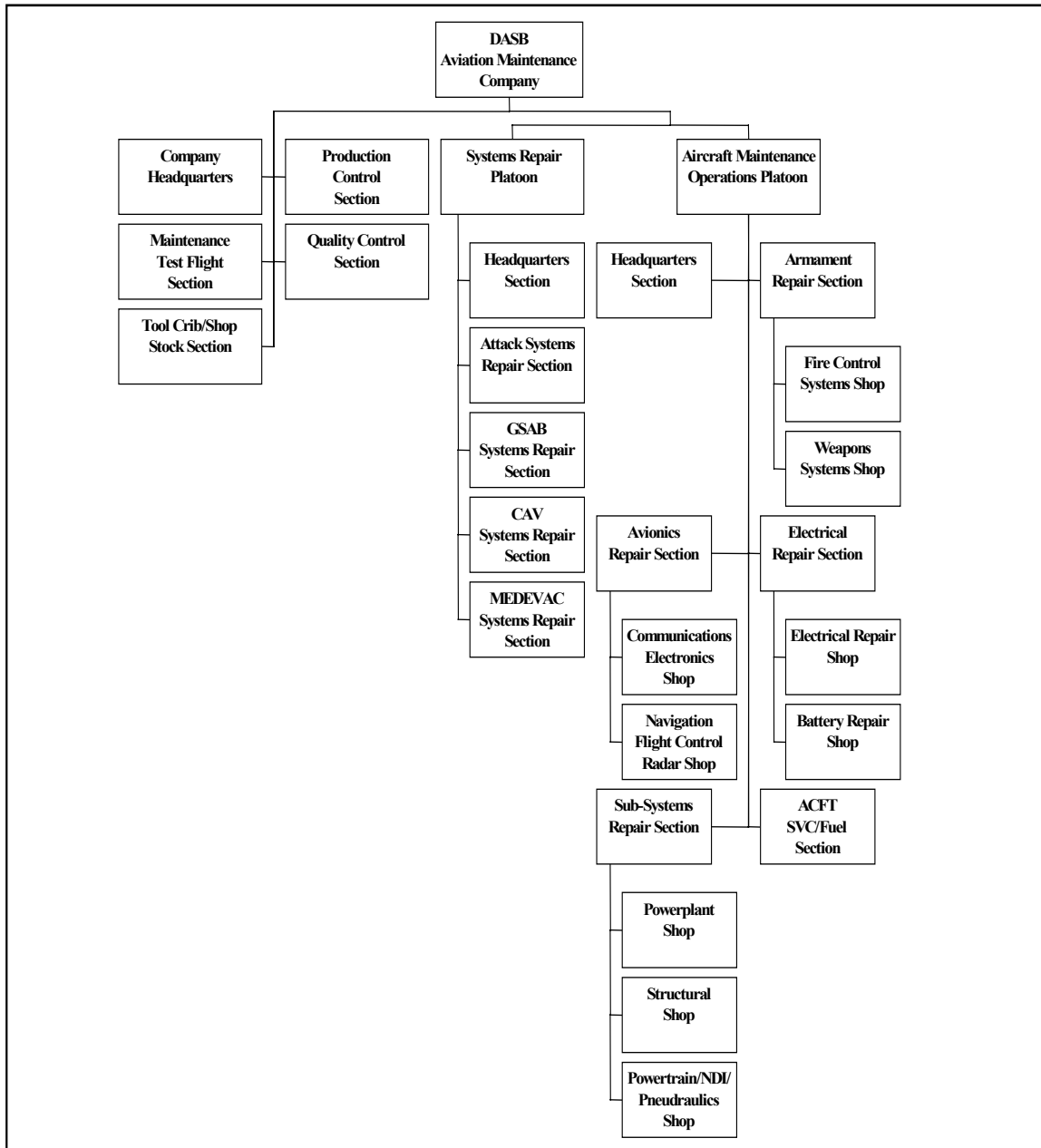
Figure 5-1. AMC Company

PERSONNEL AND SECTIONS

COMPANY HEADQUARTERS

5-2.   The company headquarters provides command, control, administration, and logistical support required to conduct AVIM operations. The commander has direct control over all the company's administrative functions. This section coordinates all training and operational support requirements. The section also ensures that all equipment in the unit is accounted for and maintained. Functions of the company headquarters are to:

- Maintain load plans.
- Perform route reconnaissance.
- Organize the unit for movement and issue movement orders to AMC personnel.
- Request additional transportation through the DASB S4.
- Coordinate with the DASB S2/S3 on the quartering party.
- Provide C2 of AMC in response to an air or ground attack.
- Coordinate base defense.
- Establish communications.
- Determine placement of NBC assets in the headquarters area.
- Function as the AMC armorer.

PRODUCTION CONTROL SECTION

5-3. The production control officer is the principal AVIM manager. He is the single point of contact between AMC and supported units on aviation maintenance matters. The section establishes formal standing operating procedures (SOPs) to maximize the efficient use of maintenance resources. It receives and processes work requests, coordinates and schedules jobs into various shops, and maintains the status of aircraft parts and shop reports. It coordinates inspection and test flights as well as the return of repaired aircraft and equipment to supported units.

MAINTENANCE TEST FLIGHT SECTION

5-4. The maintenance test flight section performs test flights on aircraft to troubleshoot problems, confirm repairs, and conduct initial break-in of major components.

QUALITY CONTROL SECTION

5-5. This section enforces standards in repair, overhaul, modification, safety of flight, and other required maintenance functions. It is also responsible for safety in all maintenance areas. The quality control (QC) section reports directly to the company commander, this reduces conflicts of interest between the production control section, the maintenance shops, and the supported units. It also allows the inspectors to maintain objectivity in the performance of their inspection duties.

Tool Crib/Shop Stock Section

5-6. The tool crib section maintains all special tools, tool sets, special equipment, test sets, and assigned ground support equipment (GSE) used in aircraft maintenance. The section also obtains, stores, and issues bench stock for the different maintenance sections and shops.

SYSTEMS REPAIR PLATOON

5-7. This platoon performs intermediate-level aviation maintenance on aircraft systems operated in the division. It consists of a headquarters section and four repair sections: attack, GSAB, cavalry, and MEDEVAC systems repair sections. The platoon sends forward repair/recovery teams to the supported units as required. The teams are task-organized and provide mobile, forward maintenance support and on-site technical assistance. Personnel and equipment from this platoon are the nucleus for aircraft recovery and evacuation teams. When needed, the platoon receives assistance from other AVIM company platoons.

AIRCRAFT MAINTENANCE OPERATIONS PLATOON

5-8. This platoon consists of a headquarters section and five repair sections: armament, avionics, electrical, sub-systems, and aircraft service/fuel sections. Together, these sections perform the majority of AVIM and repairs to the aircraft assigned to the aviation brigade. Because the mix of aircraft in the ABs varies, the structure of the AVIM can also vary.

Armament Repair Section

5-9. This section has two repair shops; the fire control and weapons systems shops. The two shops provide the capability for intermediate level maintenance on electrical and electronic components of aircraft weapons fire control systems and on mechanical and hydraulic aircraft weapon systems.

Avionics Repair Section

5-10. This section has two repair shops; the CE and navigational and flight control radar shops. This section is responsible for repair of avionics communication equipment, avionics navigation and flight control items, and radar equipment.

ELECTRICAL REPAIR SECTION

5-11. This section has two shops; the electrical repair and battery repair shops. The section is responsible for aircraft electrical and battery repair.

SUBSYSTEM REPAIR SECTION

5-12. This section has four shops; the power plant, structural, and power trains and pneudraulics shops. This section is responsible for component, airframe, turbine engine, pneudraulic, rotor, and other subsystem repairs. Much of the platoon's workload involves repairing aircraft assemblies supporting the reparable exchange (RX) program.

AIRCRAFT SERVICE/FUEL SECTION

5-13.   The aircraft service/fuel section gives the platoon 24-hour capability to fuel or defuel aircraft during maintenance operations. It also services organic helicopters and provides bulk and packaged POL. The section also maintains the AMC spill contingency plan.

Chapter 6

Combat Service Support Planning

COMMAND, CONTROL, COMMUNICATIONS, COMPUTERS, INTELLIGENCE, SURVEILLANCE, RECONNAISSANCE (C4ISR)

6-1. To be successful in battle, commanders must make sound decisions rapidly. Battle staffs assist the commander in making these decisions and translating them into coherent changes to the concept of support. Units must act quickly and decisively once changes are received to maintain logistical support.

6-2. This chapter describes C4ISR techniques and procedures that exploit the unique capabilities of digitized forces. It will assist the battalion commander and his battle staff in realizing the advantages of automated information exchange during the planning, preparation, and execution phases of combat operations.

BATTLE COMMAND

6-3. Battle command is the art and science of battle decision-making and leading. It includes controlling operations, and motivating soldiers to accomplish the mission. Armed with the knowledge of the current state and the desired end state, commanders visualize those actions necessary to achieve the desired future state and then translate that battlefield visualization into action. It also includes the following:

- Assigning missions.
- Prioritizing and allocating resources.
- Selecting the critical time and place to act.
- Knowing how and when to make adjustments during the fight.

The Army Battle Command System (ABCS)

6-4. The ABCS is designed to provide the commander and his battle staff with the needed information to effectively plan, coordinate, control, and direct the battle. To achieve the desired actions the battle staff utilizes the army battle command systems (ABCS), which includes the global command and control system-Army (GCCS-A), the army tactical command and control system (ATCCS), and the Force XXI command brigade and below (FBCB2) system. ABCS provide the battle staff with the information they require to ensure the battalion commander sees the battlefield with unprecedented clarity in near-real time.

6-5. The key echelon in knowledge base is the battalion HQ. Currently, FBCB2 data is received at MCS. The information is provided to the battalion TOC via the tactical internet. From the

battalion it is transmitted to the companies for their common, relevant picture and brigade, for its knowledge base. This system places a significant burden on the battalion battle staff to analyze and move information from one location to the other.

BATTLEFIELD VISUALIZATION

6-6. The definition of battlefield visualization is the process where the commander develops a clear understanding of the current state with relation to the enemy and environment, envisions a desired end state which represents mission accomplishment, and then subsequently visualizes the sequence of activities that moves the commander's force from its current state to the end state.

6-7. Battlefield visualization is the mental process that supports the commander's decision-making process and his ability to anticipate support. Using a vision of proposed support of the battle allows the commander to know when, where, and if a decision should be made. It is a continuous process that commences with the receipt of the first warning order and continues through the end of an operation. It provides the key to where and how the commander can best support the AB.

6-8. Digital information systems have the capability of providing a clearer picture to the commander. Digital systems enhance the commander's ability to have an understanding of the current state of friendly and enemy forces. This extends beyond the knowledge of their physical location and includes environmental, readiness, and human considerations. It includes the ability to see and understand the dynamic relationship between opposing forces as the commander leads his forces through the sequence of events.

6-9. The available digital information systems enhance the commander's situational understanding by providing him with an unprecedented level of friendly and enemy information. Commanders must recognize that the common, relevant picture that is produced by a myriad of information systems represents both known and estimated information, and is possibly flawed by human input. The commanders must tailor this information with his judgment, intuition, and experience.

COMMAND AND CONTROL SYSTEM

6-10. The C2 system refers to the arrangement and functions of personnel, equipment, communications, facilities, and procedures a commander employs in planning, directing, coordinating, and controlling forces and operations in the accomplishment of a mission. Command and control are two dependent concepts that have distinctive meanings rather than one word or system. Command is the art and science of assigning missions, prioritizing resources, guiding and directing subordinates, and focusing the entire division's energy to accomplish clear objectives. Control is defining limits, computing requirements, allocating resources,

prescribing requirements for reports, monitoring performance, identifying and correcting deviations from guidance, and directing subordinate actions to accomplish the commander's intent. The C2 system must support the ability of the commander and his battle staff to anticipate plans for future operations even while focusing on current support requirements. The related tools for implementing command decisions include communications, computers, and intelligence.

6-11. There are two types of control; procedural and positive. The ABCS will allow us to move from procedural to positive control. Procedural control is indirect. Commanders use regulations, policies, doctrine (principles and graphic control measures), techniques and procedures, and SOPs to impose procedures that control subordinate unit actions. Digitization of the battalion's C2 systems will increase the commander's situational understanding and reduce the requirement for excessive control measures. Positive control requires the active involvement of all leaders. The dangers of positive control are that it will also lend itself to information overload, increase in fatigue, and the risk of allowing the commander to over control the situation. Commanders must guard against robbing subordinates of their latitude by micromanaging the movement of small units.

INFORMATION FOCUS

6-12. The common relevant picture is derived from multiple databases and can be tailored to specific unit needs. The systems, which provide input to the commander's maneuver control system (MCS) terminal, include the following:

- Force XXI battle command brigade and below system. Provides situational understanding of friendly ground maneuver elements from individual weapons platforms through battalion echelons with near-real time information. Unit databases continuously exchange information producing the common relevant picture. The friendly situation is automatically updated with current unit locations, their CP locations, and logistical status.

- All source analysis system (ASAS). Combines the information from many sources to include space and aerial platforms, sensors, and reports from other units, human intelligence, and information derived from computer-assisted intelligence analysis to provide a detailed picture of the enemy's situation and intent.

- Combat terrain information system (CTIS). Engineer terrain visualization gained through CTIS and MCS will allow the commander to view terrain represented digitally in three dimensions, showing percent of slope, types of vegetation and trafficability and other man-made features (including known and templated obstacles).

6-13. The ATCCS, with MCS as the central focus at the battalion level, will enhance mission planning, rehearsal, and execution. Simulation will facilitate the decision making process by assisting the commander in the wargaming process and evaluating courses of action. The MCS will also allow the commander to conduct rehearsals remotely using distributed communications on digital terrain. During execution of the operation, MCS provides the commander the tools to monitor, coordinate and revise execution across the entire spectrum of his battlespace.

6-14. The key to the experienced and intuitive commander's effective exercise of battle command is information management. All information that is produced and processed, whether by automated or manual information systems, has one overriding purpose: to help the commander formulate and answer sustainment requirements and then make timely decisions.

Commander's Critical Information Requirements (CCIR)

6-15. The digital information system employed by the commander and battle staff is as sophisticated as the weapon systems they employ. The information available to the commander is only valuable if it can be focused to a manageable level. Information that the battle staff generates focuses on and is driven by the commander's critical information requirements (CCIR). The commander and his battle staff prepare it. They are based upon the commander's continuously evolving vision for the concept of support (current, future, and sequel to the future) and the commander's continuing, independent estimate of the situation. The battle staff supports the commander's development of CCIR, develops the common, relevant picture in response to the CCIR, and other parameters the commander identifies. The battle staff manages the type and volume of information fed to the commander based upon satisfying the commander's CCIR. In response to the CCIR, information systems focus on getting the right information to the commander or decision-maker as soon as possible. The battle staff processes most information into an information product (knowledge) that enables the commander to quickly grasp the meaning of the information and its impact. This should not imply that the commander does not receive any unanalyzed data. He does, in the form of spot reports, situation reports and other combat information from his subordinate commanders.

6-16. The use of CCIR focuses the information gathering process for the battle staff. It is that information which the battle staff will notify the commander, regardless of his location or time. They vary with each phase of an operation and consist of only those essential information requirements that the commander must know to make a decision concerning logistical support of a particular phase of a battle. The battle staff must continuously update the CCIR so that they are current with the ongoing operation. The following sources normally feed the CCIR:

- Priority intelligence requirements (PIR) - What we want to know about the enemy?
- Essential elements of friendly information (EEI)- Crucial information on enemy and environment needed by commander by a specific time.
- Essential elements of information (EEFI) - How the enemy sees the friendly unit?
- Friendly forces information requirements (FFIR)- Information commander needs on forces available for the operations such as personnel, maintenance, supply, ammunition, POL, experience and leadership capability.

6-17. How can the commander anticipate logistics requirements to best support the AB's combat mission? The CCIR allows the commander to define information needs and, in turn, focuses the battle staff (and subordinate commanders) on information acquisition, fusion, and analysis. They can be further described as being:

- Logistics preparation of the battle field (LPB) process.
- Dependent upon the situation.
- Specified by the commander for each operation or phase.
- Generally time-sensitive in terms of the decision point on a decision support template or the event requirements of the synchronization matrix driving their collection.
- Applicable only to the commander, who specifies and publishes them; normally published in the applicable operations plan/order; and transmitted via specified means.
- A link between current, future, and sequel to the future operations.

LOGISTICS PREPARATION OF THE BATTLEFIELD (LPB)

6-18. Logistics preparation of the battlefield is the process of gathering data against pertinent battlefield components, analyzing their impact on sustainment, and integrating them into tactical planning so that support actions are synchronized with maneuver. It is a conscious effort to identify and assess those factors which facilitate, inhibit, or deny support to combat forces. Just as intelligence preparation of the battlefield is important to the conduct of actual combat operations, logistics preparation of the battlefield is equally important to sustaining the combat power of the force. Although it may be true that even the most optimal support plan may not win the battle, it is also true that poorly planned support can certainly lose it! Working together, leaders must synchronize support actions with maneuver in a unified plan so that logistics is a factor in the success of a mission rather than a cause of failure. In addition to mission, enemy, terrain, troops and time available and civilians (METT-TC), logistics preparation of the battlefield focuses on determining the status and impact of the specific components

that make up tactical logistics. It assesses how time and space requirements and restrictions of the battlefield affect support. This section shows how battlefield data, when systematically collected and processed, provide meaningful information for the development of effective logistics estimates.

6-19. The process requires tacticians to understand the data needed by logisticians to plan and provide timely, effective support. It requires TF logisticians to understand the mission, the tactical plan, and the battlefield's time and space implications for support. It is a coordinated effort to prepare the battlefield logistically. The basic steps in systematizing the process are:

- Determine battlefield data pertinent to support actions.
- Determine sources from which raw data can be derived.
- Gather pertinent data.
- Analyze collected data elements and translate them into decision information by assessing their impact on the mission and the competing courses of action.
- Integrate decision information into tactical planning by incorporating it in logistics estimates and TF plans and orders.

6-20. When determining what battlefield data are relevant to sustainment, it's helpful to break down CSS operations into certain key elements against which data can be collected for study and analysis. These data elements are called the components of tactical logistics. The following descriptions of the components of tactical logistics are not intended to be all-inclusive. They are offered here, however, to stimulate thought and to facilitate an understanding of those factors which impact on tactical logistics support:

- Logistics resources are the wherewithal to effect support, including CSS organizational structures, command and control, task organizing for support, communications, information automation systems, medical facilities, and materiel such as transportation assets and supply, maintenance and field services equipment.
- Logistics capabilities include soldier and leader skills and the personnel staffing which, collectively, activate logistics resources and bring to life the required support. Capabilities are degraded in adverse situations such as severe climatic conditions, night operations, or elevated mission-oriented protective postures (MOPP).
- Logistics capacities include reception and clearance capacities, carrying capacities of transportation assets, volumes of storage facilities, maintenance production output rates, and supply route characteristics such as surface composition, tunnels, overhead obstructions, bridge weight limits and traffic circulation rates.

- Materiel stocks include the quantity and status of weapon systems, ancillary equipment, ammunition, repair parts and consumable supplies required or available to sustain or reconstitute combat power of deployed units. Also included are logistics status reports and known or projected shortfalls.

- Consumption and attrition rates include experienced or expected usages of consumable supplies and weapon systems which must be considered to anticipate support requirements.

- Time and space factors are those requirements and restrictions of the battlefield which influence whether logistic support is provided to deployed forces at the right place and time. Included here are plans, orders, rehearsals, priority of support, positioning for support, tempo of support (intensity of demand), security, risk assessment, the effects of terrain, weather, contaminated areas, minefields, nighttime, enemy threat on logistics operations, and the battlefield signatures of logistic resources. Time and space factors, especially, impact on the synchronization and integration of logistics on the battlefield.

6-21. Sources from which relevant battlefield data are derived include:

- Higher headquarters briefs, plans and orders.

- The commander's planning guidance. This is made up of the restated mission, initial concept of the operation, scheme of maneuver, deception objective, rear operations priorities, time plan, type of order to be issued, and type of rehearsal (back brief, reduced force, full force). It may indicate what support tasks are required before, during, and after the mission.

- The commander's intent (or concept). The intent may indicate when and where support actions are to be synchronized with maneuver, thereby suggesting logistics triggering mechanisms.

- Operations and intelligence briefings and overlays. These provide locations of friendly and enemy forces, weather, terrain, likely logistics release points, resupply routes and distances.

- Modified table of organization and equipment (MTOEs) of task force units. These provide data on logistics resources, capabilities and capacities.

- Logistics status reports. These reports from CSSCS and FBCB2 provide data on the readiness of primary weapon systems and materiel stocks.

- Scouts. They are especially helpful if the need to gather data against the components of tactical logistics is included in their collection requirements (such as airlift resupply landing zones).

- Engineer route reconnaissance overlays.
- Traffic circulation and highway regulating plans.
- Personal reconnaissance. Logistics battle staff members may be required to collect data on likely resupply routes, obstructions, bridge weight limits or the composition of stream beds.

6-22. Logisticians routinely apply, more or less, available battlefield data in developing logistics estimates without thinking of it as a formal process. By focusing on the components of tactical logistics while collecting, analyzing, and applying this critical information in planning, logisticians systematically help prepare the battlefield for their commanders. This stimulates a reciprocal understanding among tacticians and logisticians of the interdependency that exists between maneuver and support in planning, preparing, and executing combat missions.

6-23. Logisticians should treat the components of tactical logistics as essential factors that should be assessed for each plan. By doing so, they bring a professional approach to the contributions they make in the planning process. The components are variables. Some are dynamic and change with METT-TC so they should be validated daily, even hourly, if necessary. Commanders should appreciate the unique contributions their logisticians make in the planning process and when they've done a thorough job of collecting and analyzing pertinent battlefield data. Commanders must not accept less.

6-24. The commander and staff conduct LPB. Successful LPB contributes immeasurably to the favorable outcome of battle. Logistics preparation of the battlefield is an on-going process by which logisticians analyze:

- Tactical commander's plan/concept of operation.
- Tactical commander's intents.
- Supported force CSS requirements.
- Available CSS resources.
- Combat servce support shortfalls.
- The enemy (intentions, capabilities, weaknesses, doctrine).
- Terrain and weather.
- Intelligence preparation of the battlefield (IPB) products.
- Transportation infrastructure.
- Host nation support available.
- Time/distance factors.

6-25. Some LPB products are:

- A logistics estimate.
- A visualization of the pending battle and logistics activity required by phase of operation.

- Anticipated logistics challenges and shortfalls.
- Solutions to logistics challenges and shortfalls.
- How, when, and where to position logistics units to best support the tactical commander's plan.
- A synchronized tactical and logistical effort.

INFORMATION MANAGER

6-26. The battalion commander appoints an information manager because of the importance and quantity of information in the digitized DASB. The information manager oversees the battle staff in the processing of information to support the operation and that feeds the force level knowledge system. Because the CCIR are directly linked to current, future, and sequel operational situations and previously identified decision requirements, the XO ensures that the battle staff collects, analyzes, and presents information meeting the CCIR on a timely and accurate basis. In particular, he supervises the DASB TOC in maintaining and disseminating the brigade's knowledge base which is a logical data base that contains information meeting the commander's common relevant picture requirements. The common relevant picture is a comprehensive view of the commander's battlespace, consisting of a graphic portrayal of the enemy and friendly situation on the same display. In the digital CP, these are typically computer-generated flat board displays. The operations section of the TOC CP generates specific requests for information from BOS or other sources to answer the commander's CCIR. The S2/S3 or support operations section generates requests to answer specific planning questions. Specific queries can be initiated within MCS and CSSCS or flags placed on select information to ensure that it is rapidly forwarded to the commander.

SUPPLY OPERATIONS

SUPPLY SUPPORT OPERATIONS

6-27. The two types of support operations are shown below. These operations include regular resupply of all classes of supply:

- **Mission support**. Mission support is designed for a specific maneuver operation. The designated maneuver CSS elements conduct mission support to ensure maximum unit resources are available to support the fight and the specific operation is not hampered by a lack of supply support.
- **Continuous Support**. Continuous support operations keep the maneuver unit's resources sustained over a period of time. Continuous support operations are conducted as close to the supported unit as practical.

BASIC LOAD

6-28. For classes of supply other than ammunition, basic loads are supplies kept by units for use in combat. The quantity of each item of supply in a basic load is based on the number of days the combat unit may have to sustain itself without resupply and on available transportation assets. For ammunition, the basic load is the quantity of ammunition required to be on hand to meet combat needs until resupply can be accomplished. The basic ammunition load is specified by the service component commander/Army forces commander (ASCC/ARFOR) and is expressed in rounds, units, or units of weight, as appropriate.

MISSION LOAD

6-29. Mission loads consist of those materials required for a specific mission (for example, a standard fixed minefield). The basic load can be used for missions to save time; however, it is to be replenished from the materials in the mission load.

6-30. Mission loads normally stretch or exceed the transportation assets available. Palletized standard loads/flat racks help solve the planning and distribution problem. Class IV/Class V resupply for the defense is one of the most demanding mission load operations the unit must carry out and requires all the assets that can be made available. A total cooperative effort by the unit, including engineers, is required if the defense is to be adequately resourced.

CLASSES OF SUPPLY

6-31. There are ten classes of supplies. During defensive operations Class IV/Class V supplies require special considerations. During offensive operations Class III(B) requires special consideration.

Class I

6-32. Class I consists of subsistence and gratuitous health and welfare items. Quantities are determined by the unit strength sent forward on digitized reports.

Class II

6-33. Organizational clothing and individual equipment (OCIE) support is not normally available at battalion. The supply platoon of the HSC in the DASB provides supply point distribution of limited quantities of OCIE in the aviation support area (ASA). The HSC also provides supply support for other Class II items, such as tentage, tool sets, and administrative and housekeeping supplies. These items are moved to forward locations when dictated by the tactical situation and METT-TC.

Class III

6-34.   Class III consists of POL, including petroleum fuels, lubricants, hydraulic and insulating oils, preservatives, liquids and gases, bulk chemical products, coolants, deicer and antifreeze compounds.   Refueling operations are conducted using a combination of unit distribution and supply point distribution.

Class IV

6-35. Cache or throughput of the Class IV to the barrier site s a procedure used in preparation for defensive operations.   The following items are normally throughput from corps assets based on unit requirements:

- Construction materials.
- Barrier materials.

Class V

6-36.   Technological advancements in real-time forecasting of Class V sustainment requirements allow more effective planning of this support. In addition, throughput distribution of Class V items, packaged to weapon system requirements, reduces the need for stockage of ammunition at ASP and the resultant use of ATP.

Class VI

6-37. This class covers personal demand items, such as candy, and toiletry articles that are normally sold through the exchange system during peacetime. In a combat environment, these items are sent with Class I as health and comfort packs (sundry packs).

Class VII

6-38. This class includes major end items. These are major pieces of equipment, assembled and ready for intended use, such as radios, tool sets, combat vehicles, and other major end items. Major end items that are destroyed or become inoperative are reported immediately to CSSCS by means of the FBCB2 LOGSITREP. The supporting CSS unit replaces them, as they become available.

Class VIII

6-39.   This class includes medical equipment sets and their components, medical supplies, which are provided through the forward support medical company of the DSB or FSB. Included are individual medical supplies such as first-aid dressings, refills for first-aid kits, water purification tablets, and foot powder. Combat lifesaver bags are reported to CSSCS using the FBCB2 LOGSITREP or LOGSTAT.

Class IX

6-40. Repair parts, air and ground, are stocked at the Class IX section of the supply platoon in the HSC. The DASB's HSC maintains the Class IX (air & common) ASL. Organizational Class IX requests are submitted from the ULLS-Gs or ULLS-As and DS parts are requested via SAMS. ULLS-G and SAMS requests are forwarded to the SARSS-1 in the HSC. If the HSC has the item on hand it is released to the customer via supply point distribution, otherwise it is forwarded to the corps support operation's SARSS-2AC via wireless modem. The SARSS-2AC will locate the item within the SSAs and release it or forward the request to the theater.

Class X

6-41. Class X consists of materials and all other classes of supply to support nonmilitary programs, such as agriculture and economic development.

LOGISTICS RELEASE POINT (LRP) OPERATIONS

6-42. A logistics release point (LRP) is the point along the supply route where the supported unit meets the supporting unit to transfer supplies. Likely functions performed at the LRP are:

- Synchronization.
- Load adjustment and cargo diversion.
- Transfer of responsibility.
- Updating battlefield intelligence.
- Driver briefing/vehicle maintenance.
- Decision making/C2 node.
- Link-up point for convoy guides.
- Empty flatrack backhaul.
- Human remains transfer

6-43. Within a division's battlespace, one LRP is normally established in the vicinity of the BSA for each FSB, one for the DSB, and one for the DASB. Additional LRPs may be established based on METT-TC.

6-44. Optimally, the LRP is located along a well-protected supply route. The exact location takes advantage of cover and concealment. The LRP is large enough to accommodate expected inbound and outbound convoys under all weather conditions. At the LRP, dry cargo, liquid cargo, and flatrack transfer may occur. Trailer transfer may occur also. If practical, convoys may proceed past the support area LRP to the vicinity of the supported unit where supplies are then transloaded on to customer vehicles or downloaded on to the ground. When rotary wing aircraft are available for logistics resupply, the forward LZ may also be at or near the LRP.

6-45. Security and C2 of the LRP are critical. Routes into and out of each LRP must be secure. Security arrangements must be preplanned, synchronized, and executed. Convoys must include self-protection measures such as a combination of gun trucks, military police escort vehicles, armed helicopters, and combat vehicle escorts. Field artillery, engineer, and air defense unit support may also be required.

6-46. Logistics release point C2 considerations include:

- Which HQ is in charge?
- Assured, secure communications.
- Dissemination of LRP location to all CSS and supported units.
- Requirement for LNOs from supporting and supported units.
- Twenty-four hour operations.
- Situational understanding and situational understanding mechanism.
- Decision making authority or access to key decision makers.
- Need for linguists at LRPs.
- Location(s) of future LRPs.
- Frequency of LRP displacement.

FLATRACK COLLECTION POINT (FRCP) OPERATIONS

6-47. Flat rack collection points are predetermined points conveniently located to facilitate the harvesting and management of common user flatracks. Flatrack employment, management, and retrograde operations are the responsibility of distribution managers integrated at each echelon of support throughout the distribution pipeline.

6-48. Proposed FRCP locations are identified and reported to higher headquarters early in the planning process. Exact locations are reported immediately upon occupation. FRCP location considerations include:

- Collocation with existing logistical nodes (SSAs, ATP vicinity, other supply points and collections points) or consolidation with other FRCPs on an area basis.
- Access to supply routes, feeder routes to supply routes, and traffic circulation.
- Maximize force protection, cover and concealment, and other security resources.

METHODS OF RESUPPLY

6-49. A company uses voice or digital means to request resupply and report status. The method used is determined after an analysis of the factors of METT-TC. The two distribution methods of resupply are:

- **Supply point**. Supply point distribution requires unit representatives to move to a supply point to pick up their supplies.
- **Unit**. Unit distribution provides delivery of supplies directly to the unit. A unit representative meets the resupply package at the LRP and guides the package to the company's position.

6-50. Throughput to forward areas leverages configured loads, containerization, information, force structure design, technological enablers, and command and control relationships to deliver sustainment from the operational level directly to the customer or its direct support unit. Throughput bypasses one or more echelons in the supply system to minimize handling and speed delivery forward. Direct throughput relies on unity of command and situational understanding.

TECHNIQUES OF RESUPPLY

6-51. The tactical situation will dictate which technique of resupply the company will use: tailgate, service station, a variation of one type, or a combination of both types. The situation will also dictate when to resupply. Generally, the company should attempt to avoid resupply during offensive operations; resupply should be done during mission transition. Resupply is unavoidable during defensive missions of long duration.

6-52. In the tailgate technique, fuel and ammunition trucks, which have been handed off to the PSG, are brought to individual vehicles. This method is used when routes leading to vehicle positions are available, and the company is not under direct enemy observation and fire. It is time-consuming, but it is useful in maintaining stealth during defensive missions because the vehicles do not have to move. If necessary, certain supplies can be hand-carried to vehicle positions to further minimize signatures. See Figure 6-1.
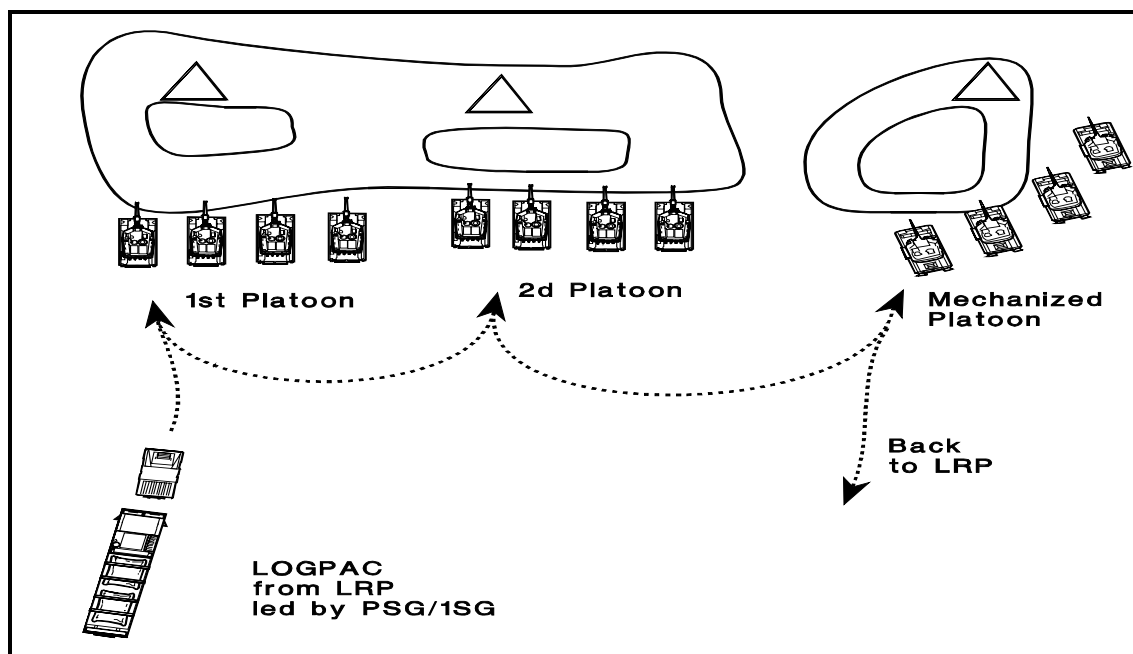
Figure 6-1. Tailgate LOGPAC

6-53. In the service station technique, vehicles move to a centrally located point for rearming and refueling, either by section, platoon, or an entire company. Service station resupply is inherently faster than the tailgate method, because vehicles must move and concentrate, however, it increases the security risk. See Figure 6-2.
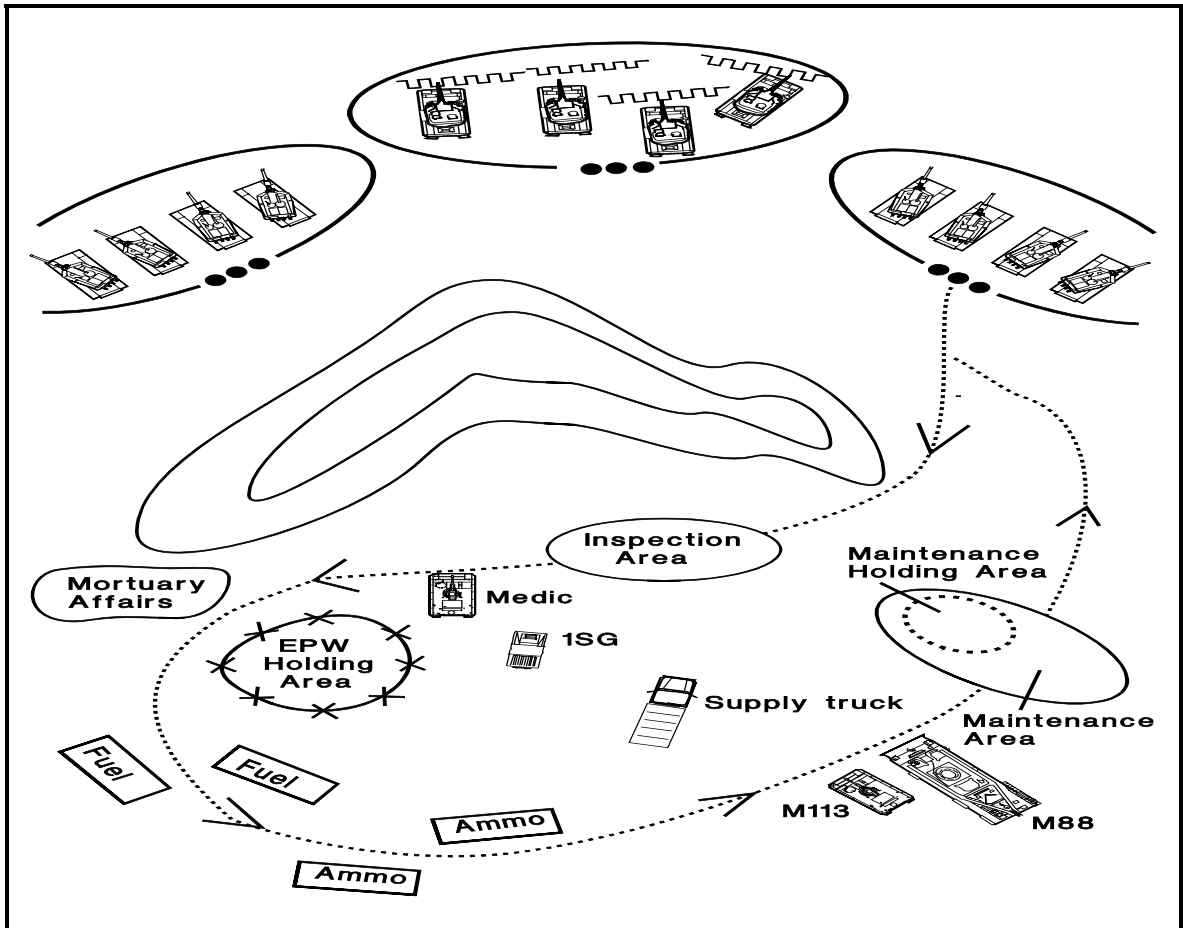
Figure 6-2. Service Station LOGPAC

6-54.   A company commander can vary the specifics of the two basic techniques, or he can use them in combination for various platoons. During a defensive mission, for example, he may use the tailgate technique for selected forward observation points (OP), and the service station method for the remainder of the company located in their positions. See Figure 6-3.
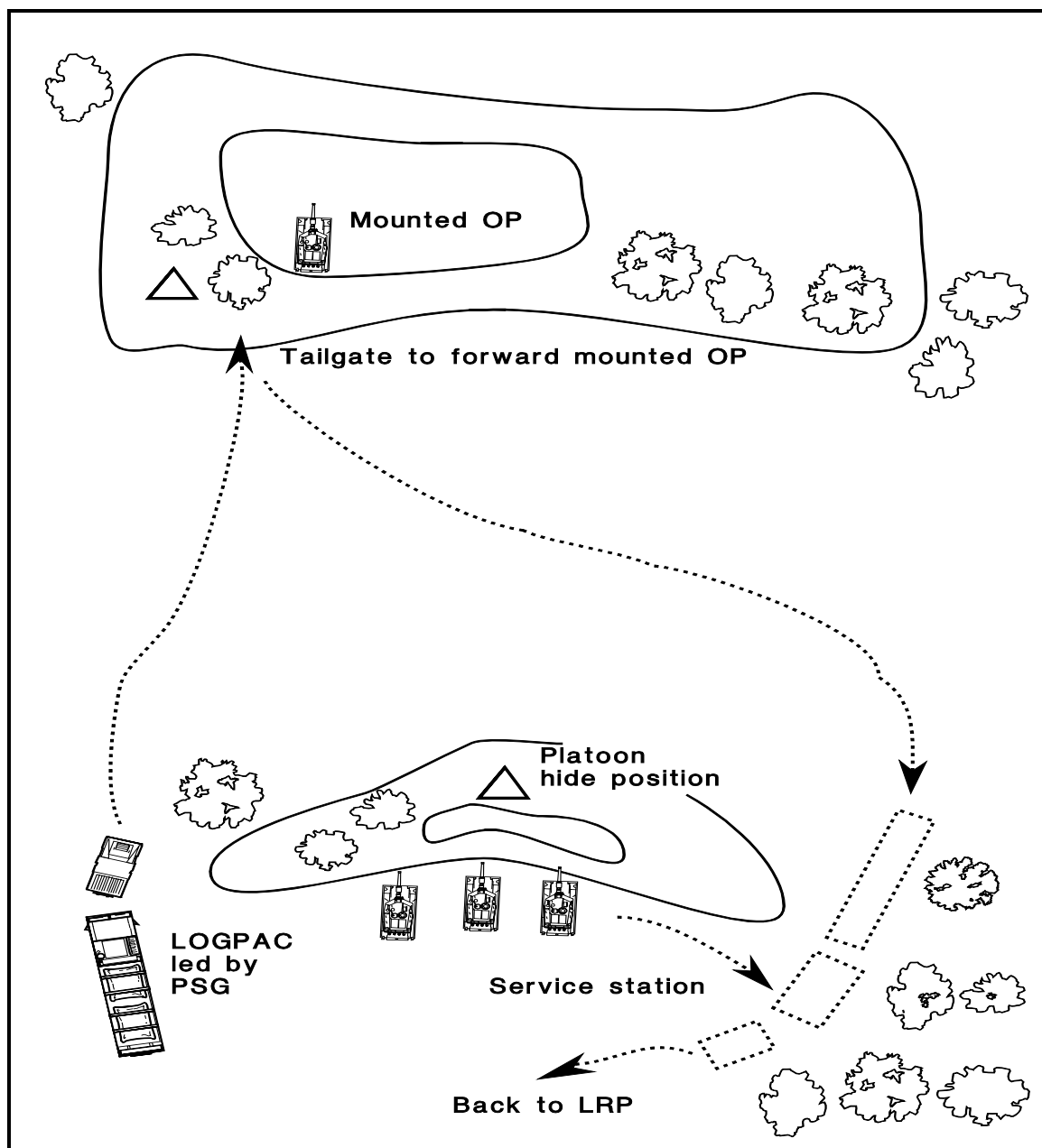
Figure 6-3. Modified Tailgate LOGPAC

IMMEDIATE RESUPPLY

6-55. Immediate resupply, normally involving Classes III, IV, and V, is executed when the company has such an urgent need for resupply that it cannot wait for the routine logistics package (LOGPAC). Immediate resupply procedures starts with the distribution of supplies, for example, the redistribution of ammunition in individual vehicles, followed by cross leveling of

ammunition within the platoon. It is better to have four bradley fighting vehicles (BFV) with 50 rounds of 25 millimeter (MM) ammunition each than two BFV with 100 rounds and two others with none.

6-56. The commander XO or 1SG transmits a CFS for Class III/IV/V through FBCB2 , FM, MSE, or most expedient means to the support operations section of the HSC. Immediate supplies are brought forward by the distribution section HSC. Based on the enemy situation, the platoon may conduct resupply while in contact with the enemy. Two techniques are used to resupply platoons in contact:

- Limited supplies are brought forward to the closest concealed position, where the tailgate technique of resupply is used.
- Individual vehicles or sections disengage and move to a resupply point, obtain their supplies, and then return to the tactical mission. This is a version of the service station technique.

OFFENSIVE OPERATIONS

6-57. The planning for offensive operations must be well developed and complete. Accurate offensive CSS planning, and tracking of consumption, will reduce the immediate resupply focus to the individual combat vehicle. Conducting sustainment operations during the offensive is critical to the success of the attack. By identifying the point of consumption by the warfighters, the AB S4 and DASB support operations will be able to position mission tailored support.

6-58. The two most critical supplies for offensive operations are Class III and V, but all aspects of support must be addressed. The DASB support operations will direct the movement of resources to designated LRP to resupply planned or forecasted requirements, as stated in the logistics support matrix.

6-59. The DASB commander may find it necessary to echelon his assets to better support the AB operation.

6-60. The AB S4 produces the CSS overlay. The DASB commander and the support operations personnel assist with this overlay. The overlay ensures that both the supported units and the DASB know the location of all support assets in relation to the maneuver units and maximize the support given

DEFENSIVE OPERATIONS

6-61. Combat service support defensive plans are developed to support the defensive battles and facilitate rapid transition to the offensive. Defensive operations take many forms. They range from static, relying on firepower from fixed positions, to wholly dynamic, based on maneuver to disrupt and destroy the attacking force. The CSS commanders must be involved early in the

defensive planning. This allows for planning for the right support and to anticipate changing priorities. Some planning considerations that should be addressed while planning for defensive operations are:

- Plan for the support to be provided to the covering force and the counter recon units.
- Anticipate the amounts of ammunition, fuel, food and barrier material that must be delivered and have it positioned forward at LRP to minimize resupply turn around times.
- Conduct resupply operations during periods of limited visibility to the maximum extent possible to reduce the CSS signature and the opportunity for enemy observation and interference.
- Develop control measures that will allow the support personnel to switch from a support role to defense, force protection, and survivability operations at the appropriate time.

6-62. For defensive operations, throughput supply will be used to expedite deliveries as far forward as possible. Class IV may be pushed from corps directly to the emplacement site. Class V is given the highest priority of all critical supplies during defensive operations. The increased expenditures of ammunition will significantly impact transportation assets.

6-63. In the same manner as described in the offensive section, the AB S4 must prepare the CSS overlay. This overlay should have everything on it that the offensive overlay had with the addition of any LRP designated and the locations of any prestockages of Class IV and Class V.

URBAN WARFARE CSS OPERATIONS

6-64. There is an increased likelihood of U.S. forces fighting in urban environments which is the preferred battlespace for many potential adversaries. Most wars have included major battles in and around urban areas with U.S. deployments being centered on or in the vicinity of urban areas. Combat service support organizations must have the capabilities to support units in combat, and peace operations in urban environments. Mechanized and armored divisions, although not ideally suited for urban operations, may have to conduct various missions in or in the vicinity of urban areas.

CSS SITUATIONAL UNDERSTANDING IN URBAN OPERATIONS

6-65. Knowledge of the urban battlespace as it pertains to logistics preparation of the urban battlefield (LPB) is critical in terms of the following:

- Supported commanders' intents and concepts of operation.
- Transportation infrastructure (air, rail, waterways, pipelines, subway).

- Telecommunications and automation network posture.
- Traffic patterns/flow/selection of main and alternate supply routes.
- Local resources with military sustainment value.
- Local population sentiments (friendly/non-friendly).
- Contracting, bartering, and trading capabilities.
- CSS commanders' access to intelligence preparation of the battlefield (IPB) products.

6-66. Other CSS factors in an urban environment:

- Expect increased consumption of small arms ammunition and explosives.
- Expect increased consumption of precision munitions.
- Expect decreased consumption in certain large-caliber and area-type munitions.
- Expect increased usage of non-lethal munitions.
- Expect increased aerial resupply requests.
- Expect increased medical workload (increased casualties).
- Expect increased mortuary affairs workload.
- Routes within an urban area can be denied easily.
- Movements control is more complex.
- Force protection of CSS nodes and convoys is exacerbated in urban areas. Vertical ambushes and other terrorist-type attacks are real threats to CSS activities. Close fight may be fought between 1st and 2nd floors of a building.
- Smaller resupply vehicles (HEMTT/PLS) may be in greater demand than tractor-trailers.
- Gun trucks are required to protect convoys.
- Expect the operation to be asymmetric (not linear) and multi-dimensional (building tops can be the high ground).
- Adequate CSS C4ISR may be nearly impossible within a large urban area. Avoid sites where communications are severely degraded.
- Urban areas afford numerous CSS hide locations (warehouses/industrial parks).
- Understanding The Law of Land Warfare (FM 27-10) and applicable rules of engagement (ROE) are imperative.
- Expect refugee and displaced person sustainment missions.
- Expect support requirements from other services, combined or coalition organizations, non-governmental organizations (NGO), and private volunteer organizations (PVO).

Chapter 7

CSS Operations

CSS SUPPORT STRUCTURE

7-1.   The DISCOM is a multi-functional organization capable of providing, coordinating, and synchronizing logistical support to the division.   The DISCOM's mission of sustaining the division's combat power is more critical than ever. The DISCOM consists of FSBs, a DSB, a DASB, and the HHC. The DISCOM provides CSS for the division. It provides arming through its Class V operations, fueling through Class III operations, fixing through its maintenance operations, transportation through the truck company in the DSB and the supply and transportation sections in the FSBs, and sustaining through the provision of rations, individual equipment, and medical support.   The personnel sections throughout the division provide the manning function. This chapter will discuss the six tactical logistics functions throughout the DISCOM to give the DASB commander and battle staff an understanding of what and how CSS integrates from higher, DISCOM and EAD, laterally, with the DSB and FSB, and to the lower supported units. The DISCOM organization is shown in Figure 7-1. Shown in Figure 7-2 are the non-divisional CSS assets, their command and support relationship, and their location in the divisional battlespace.
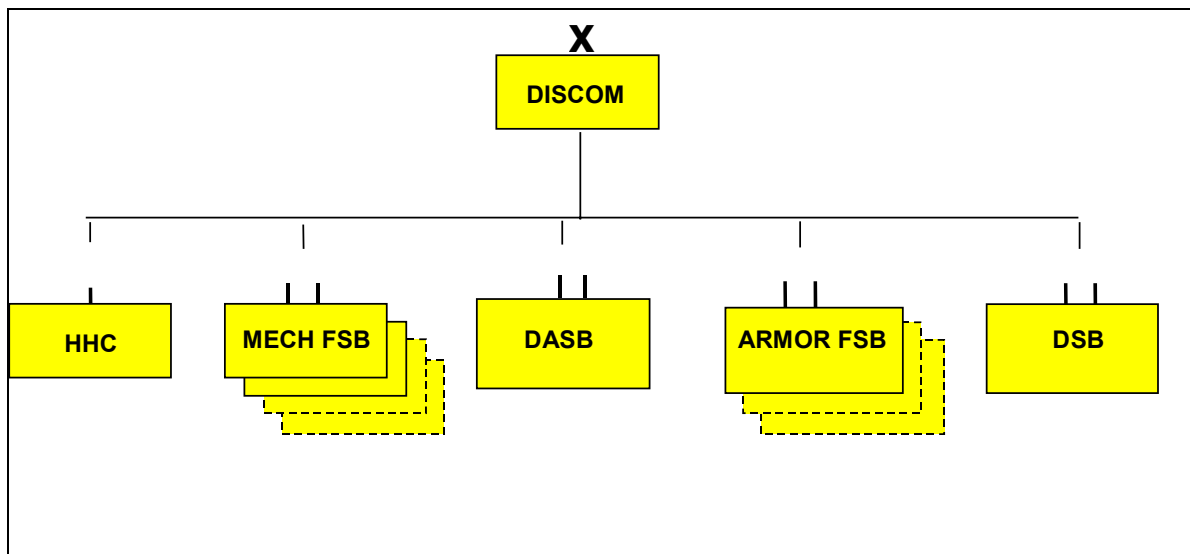
Figure 7-1. DISCOM Organization

Non-divisional CSS Inside FXXI Divisional Battlespace

(METT-TC)

Command and Support Relationships May Vary Based on METT-TC, as well as Availability of EAD CSS Capability

In Support of the Division

*MST	+Air MEDEVAC
F&E Rpr	+Gnd Ambulance
Allied Trades	+FST
DS Reinf Trk&Whl	+Cbt Stress Ctrl Tm
	+ Contingency K Tm
*Wtr Purif Det/Tm	+AMC-LSE/LAO Tm
*ASP	+CA Tm
*MCT	
*MA Plt	
*Trk Co(PLS/POL)	

In Support of Corps Trps/Div Area Spt

Trailer Transfer Point	FDRP
TMDE/Cal Tm	EOD Det
PSB&Fin Bn elements	Field Svc Co

In Support of Corps Trps In Div Rear

*CSB HQ/HHC	*DS Supply Co
*DS/GS Mt Co	Perishable Sub Plt
Wh/Trk Veh Rpr	DS Ammo Co
Arm/FC Rpr	Trk Co(PLS/POL)
FA/ADA/Msl Rpr	MCT
Pwr Gen Rpr	MA Sect
Commel/F&E Rpr	
Allied Trades	+Area Spt Med Co
Recovery	+Air MEDEVAC
Comp/GS Reps	+Gnd Ambulance
	+FST

In Spt of the Div in Brigade Battlespace

*Commel Repair
*Wtr Purif Det/Tm
*MA Tm

+Air MEDEVAC Element
+Gnd Ambulance Element
+FST

In Spt of Corps Trps in Brigade Battlespace

*FLE FA Bde	*FLE Engr Bde
Log C2	Log C2
MST	MST
Supply	Supply
Trans	Trans

*Log Tsk Force ACR
Log C2
MST
Supply
Trans

+Air MEDEVAC Element
+Gnd Ambulance Element
+FST

Note: Med units denoted by + will likely be C2 by Med HQ; CA/AMC by their respective command

Figure 7-2. Non-divisional CSS Assets Inside FXXI Divisional Battlespace

ARMING THE FORCE

7-2. The division operates four ATPs. These are usually arrayed to support one maneuver brigade each and one to support the AB and division cavalry squadron. A DAO representative manages each ATP. In addition to the division ATPs, the corps DS ammunition company establishes an ATP which provides Class V support to both divisional and non-divisional troops in the division rear area. The corps DS ammunition company also operates an ASP to provide support to the ATPs in the division and as an alternative source of Class V to units not supported by an ATP. Both the ASP and rear ATP are corps assets.

UNIT LEVEL AMMUNITION STATUS REPORTING

7-3. Using the LOGSITREP, via FBCB2, unit ammunition on-hand status is reported per unit SOP to the 1SG, with information copies going to the company commander. The 1SG consolidates the unit's on hand quantities and forwards them via the LOGSITREP, via FBCB2, to the BN/TF S4, with information copies to the BN/TF commander and S3. Company commanders will indicate in their LOGSITREP remarks about any critical ammunition shortages or forecasted changes in ammunition requirements. At the discretion of the CO/TM commander cross leveling on-hand ammunition within platoons or throughout the company is accomplished.

DETERMINING/REQUESTING BATTALION AMMUNITION REQUIREMENTS

7-4. The BN/TF S4 will determine ammunition resupply requirements based on information provided in the LOGSITREP and guidance received from the battalion commander and S3. The BN/TF S4 will consolidate the entire battalion ammunition requirement. He will then submit the company roll up ammunition resupply to the brigade S4. The brigade S4 will consolidate the ammunition request and pass that request to the support operations officer located in the supporting DASB.

7-5. Units in the division rear submit their requests through the LOGSITREP/LOGSTAT to the support operations officer located in the DSB. The support operations officer for the FSB, DASB and DSB will request the ammunition support from the division ammunition officer (DAO) in the Class V section of the division support operations section. The DAO will compare the request with the controlled supply rate (CSR). If the request is within the limits of the CSR, the DAO will order the ammunition from corps either to be shipped directly to the FSC, or to replace stocks that will be issued from the ATPs located in the FSBs, DASB, or the rear ATP.

7-6. The ATP, operated by the HDC in the FSB, is responsible for supporting all units located in the brigade that are assigned, attached, have established a support relationship, or as directed by the DISCOM commander. The ATP in the DASB supports the AB and division cavalry squadron. The rear ATP, operated by corps, is

responsible for supporting all divisional and non-divisional units in the division rear.

7-7. The ATP is designed to provide the required lift and transload capability associated with high-volume and high tonnage. The support operations officer of the FSBs and DASB, in conjunction with the DAO NCO representative, will coordinate directly with those nonorganic units that will be supported by the ATP. The support operations officer/DAO representative will consolidate their ammunition requirements, and their request for resupply will be "rolled-up" with the brigade's request. Ammunition and explosives will be accounted for and provided proper physical security at all times.

AMMUNITION REQUEST VALIDATION

7-8. The DAO validates the brigade's ammunition requests by comparing the amount of ammunition requested against the CSR and the on-hand stocks in the FSB's ATP, DASB ATP, and the rear ATP. The DAO will take into account the current mission posture, scheduled/future mission posture, and operational guidance. Once all of these factors have been considered, the DAO will either validate the request or adjust it to meet the situation in coordination with the brigade S4 and supported units. The DAO will then determine, based on METT-TC and transportation availability, whether the ammunition resupply will be throughput to the DASB's ATP, or a forward rear point. Ammunition can be throughput to a cache (a storage location where corps transportation drops flatracks loaded with ammunition, the ammunition will be closer to the maneuver unit to reduce transit time) unless the tactical situation does not allow delivery that far forward. "Prep-fire" ammunition will be delivered as close to the batteries as possible to prevent the artillery ammunition carriers from having to up-load after the "prep-fire." The ammunition resupply requests and transportation requests are then sent to the corps materiel management center/corps movement control center (CMMC/CMCC), with information copies to the brigade DAO representatives, and the brigade and battalion S4s. The brigade DAO representatives will notify the HDC ATP (FSBs), HSC ATP (DASB), or rear ATP section (run by corps) of any scheduled ammunition deliveries.

AMMUNITION RESUPPLY

7-9. The CMMC, using SAAS-MOD and recommendations from the division support operations Class V section, determines whether the ammunition resupply will come from the ASP or the corps storage area (CSA). The DAO will use the CSSCS Class V-ATP's CS5-016 report to determine the ammunition status of the ATPs in the division. This information will determine if ammunition within the division can be cross-leveled to meet ammunition requirements. If the ammunition is coming from the ASP, the

CMMC cuts a materiel release order (MRO) directing the ammunition shipment. If the ammunition needs to be brought forward from the corps storage area (CSA), the CMMC will submit a request for ammunition resupply to the corps G4. Ammunition will arrive in theater in strategic configured loads (SCLs). The supporting activity, either the corps ASP in the division area or the CSA, will reconfigure the SCLs into mission configured loads (MCLs) prior to transportation asset arrival. The CMCC will schedule transportation IAW priorities. The ASP is then notified of where and when transportation will arrive by the CMCC. After ammunition has been loaded, the RF tags will be verified along with the correct cargo and destination. All ammunition shipments will be tracked through the MTS. Delivery coordinates and time will be sent by FBCB2 or CSSCS free text message to the receiving unit/activity, with information copies furnished to the DAO, brigade S4, DAO representative, the BN/TF S4, and respective FSB/DASB/DSB support operations. In the event an ammunition shipment needs to be diverted within the brigade, the brigade commander or designated representative will retain the sole authority to do so. This will be done through the DASB support operations officer using the CSSCS, MTS or FBCB2 through free text. Ammunition shipments that need be diverted within the division will be directed by the DISCOM commander or designated representative. See Figure 7-3 for Class V distribution within the DISCOM.
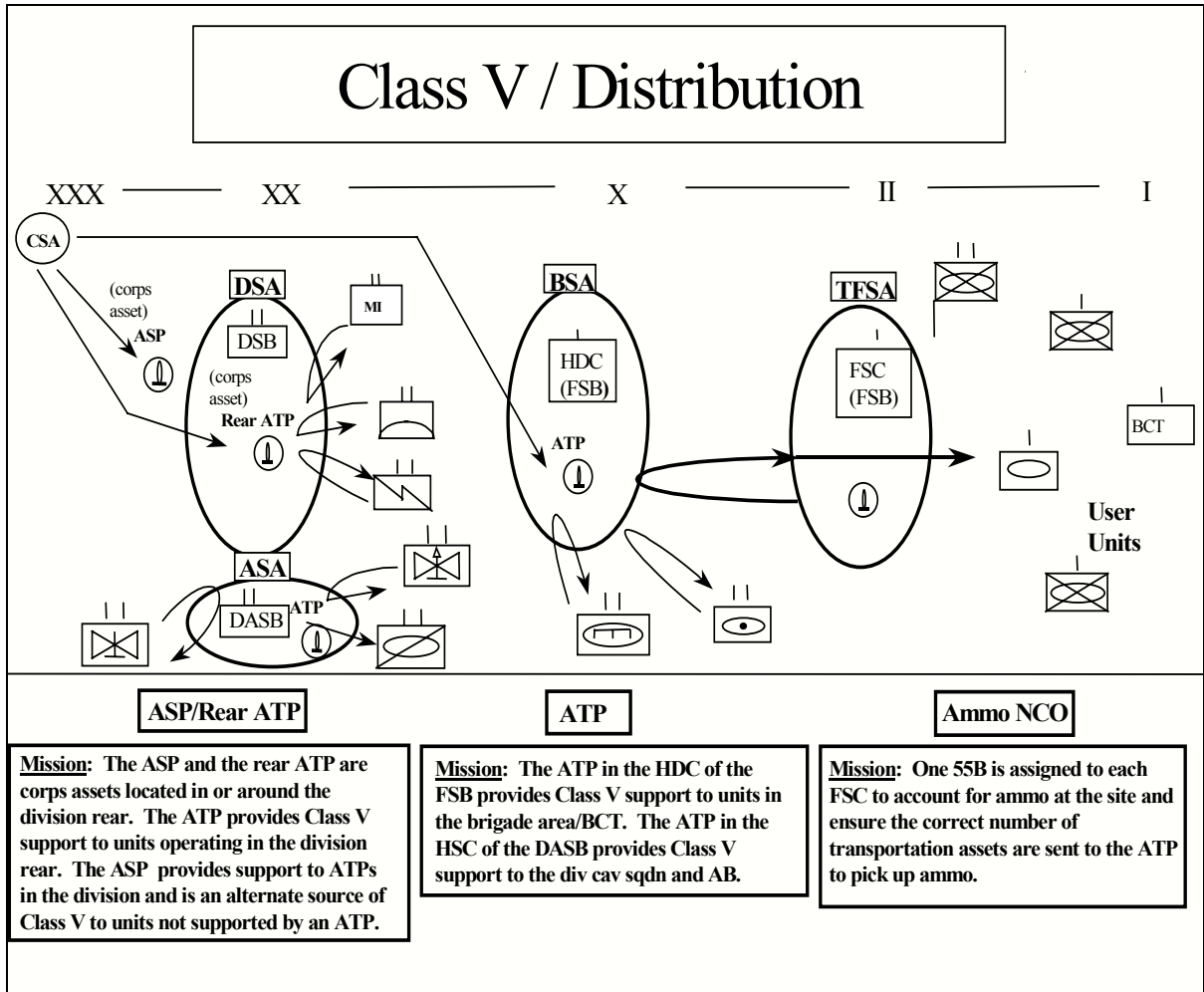
Class V / Distribution

XXX —— XX —— X —— II —— I

CSA

(corps asset)
ASP

DSA
DSB

MI

(corps asset)
Rear ATP

BSA
HDC (FSB)

ATP

TFSA
FSC (FSB)

ASA
DASB ATP

User Units

BCT

ASP/Rear ATP	ATP	Ammo NCO
Mission: The ASP and the rear ATP are corps assets located in or around the division rear. The ATP provides Class V support to units operating in the division rear. The ASP provides support to ATPs in the division and is an alternate source of Class V to units not supported by an ATP.	**Mission:** The ATP in the HDC of the FSB provides Class V support to units in the brigade area/BCT. The ATP in the HSC of the DASB provides Class V support to the div cav sqdn and AB.	**Mission:** One 55B is assigned to each FSC to account for ammo at the site and ensure the correct number of transportation assets are sent to the ATP to pick up ammo.

Figure 7-3. Class V Resupply

ATP OPERATIONS

7-10. The ATPs act mainly as a temporary distribution point, conveniently located to facilitate rapid issues to the users. The ATPs are operated by the HDCs (FSB) for the maneuver brigades and the HSC (DASB) for the aviation brigade and division cavalry squadron. The rear ATP, when utilized, is located vicinity of the DSA. It is established and operated by the corps DS ammunition company. The rear ATP is responsible for providing Class V support to divisional and non-divisional assets located in the division rear. One DAO representative will be located at each ATP. These DAO representatives will manage the issues of ammunition. The ATP will be used when forward deliveries are not required. Units that are directed to pickup ammunition from the ATP will follow the normal request procedures outlined above, and will also prepare a DA Form 581 to be sent to the DAO representative at the ATP. The requesting unit will submit the DA Form 581 through the BN/TF S4 who will approve the request and either forward it to the brigade S4, or have the unit hand carry it to the brigade S4 for approval. The DAO representative will confirm the request through the DAO prior to issue. If the unit has PLS, it will be directed to the appropriate "rack" to be picked up. If the unit requires "break bulk" issue, the ATP section will issue based upon the DA Form 3161 provided by the DAO representative. The DAO representative goes to the respective support operations section and uses CSSCS or MSE to coordinate and confirm. Coordination on the location, amount, and type of ammunition to be received at the ATP will be made among the DAO, CMCC, and the respective support operations officer based on guidance from the DISCOM commander, Division G4, and G3. Ammunition will be delivered on flat racks by corps transportation assets using PLS trucks and trailers. Ammunition transfer point personnel will interrogate RF tags of arriving PLS shipments to gain immediate visibility of the shipment and enable it to immediately identify the organization it is to be issued to. Units arrive at the ATP to pick up ammunition; drop off empty, or partially empty, ammunition flat racks and retrieve fully loaded flat racks. ATP personnel will assist units PLS in transloading ammunition. The ATP section will reconfigure loads to meet mission requirements on a limited basis only. The flat racks will normally be issued as shipped. If partially empty flat racks are returned and the returned ammunition is required within the brigade, the ATP section may consolidate the ammunition from the partially empty flat racks and make full loads for issue within the brigade. All empty flat racks will be shipped back to the ASP or CSA as soon as possible. The ATP representative will report all issues and turn-ins. Corps transportation assets used to deliver ammunition resupply will pick up the unit turn-ins to respective support operations and to the DAO. for immediate retrograde. When time and equipment permits, the ATP representative will attach RF tags to the retrograde shipments. The MTS will track the ammunition vehicle returns as they are retrograded to the rear.

The MTS provides the ability to redirect the shipment if needed. The ATP will maintain only those limited ammunition stocks that they can transport.

ASP OPERATIONS

7-11. The ASP is located in the vicinity of the DSA, but is non-organic to the division and is run by corps assets. The ASP is run by the corps DS ammunition company and provides support to the ATPs in the division and also serves as an alternative source of Class V to units not supported by an ATP.

FUELING THE FORCE

7-12. Bulk fuel, Class III(B) is handled by the corps petroleum distribution system, along with ½ DOS of reinforcing bulk fuel support to the FSBs and DASB handled by the fuel platoon of the quartermaster (QM) company in the DSB. The reinforcing fuel in the DSB provides capability for surge or pursuit and exploitation operations. This fuel is also a contingency reserve in case the EAD fuel is interdicted.

7-13. The Class III(P/B) and water supply branch of the general supplies section in the division support operations controls and manages the supply of bulk fuels to division elements. It determines fuel requirements and recommends priorities, allocations, and other controls for bulk fuels.

7-14. Fuel distribution will be a combination of unit distribution and supply point distribution. The fuel platoon of the QM company (DSB) will provide distribution of Class III(B) to the DSA, and reinforcing support to the FSBs and DASB. The distribution section of the supply and transportation platoon (HDC) is responsible for reinforcing distribution of Class III(B) to the BSA, and distribution to the HEMMT fuel tankers of the FSCs. The distribution section of the supply and transportation platoons (FSC) are responsible for distribution of Class III(B) to the supported BN/TF. The distribution section of the supply platoon of the HSC in the DASB is responsible for distribution of Class III(B) to the AB and division cavalry squadron.

7-15. Fuel status is initiated at the platoon or company level, and reported daily to the 1SG using the LOGSITREP report in FBCB2. Information copies will be furnished to commanders at each echelon. The 1SG consolidates on hand quantities and submits the fuel status report via FBCB2 to the BN/TF S4, with information copy to the FSC support operations section. The BN/TF S4 consolidates the fuel status report for the CO/TM and submits by company rollup on hand quantities via FBCB2 to the brigade S4, with information copy to the FSC support operations. The brigade S4 consolidates the BN/TFs and brigade troops fuel status reports and submits the report to the FSB support operations via FBCB2, with information copy to the division G4 via CSSCS. The FSC and HDC, using FBCB2, submits their bulk fuel status report to the FSB support operations section. The FSB support operations section consolidates the bulk fuel status reports for the brigade and slice elements, and submits it to the division support operations section

using CSSCS. Units supported by the DSB submit their bulk fuel status reports to the DSB support operations using LOGSITREP/LOGSTAT. The DSB support operations consolidates the bulk fuel status report for the division troops and submits it to the division support operations using CSSCS. The DASB support operations consolidates the bulk fuel status report for the AB and division cavalry squadron and submits it to the DISCOM support operations using CSSCS. The division support operations uses the bulk fuel status reports from the FSBs, DSB and DASB to compute the Class III(B) requirements for the division. The division support operations submits the consolidated division requirements to the corps support command (COSCOM) CMMC using CSSCS, with information copy to the division G4.

7-16. The COSCOM resupplies the division with bulk fuel twice daily based on METT-TC. It may be transported into the division by tanker, railway, or pipeline. A transportation medium truck company usually makes deliveries directly to the DSB, DASB and FSB units. The division support operations, with guidance from the division G4, will coordinate the bulk fuel distribution into the division. Throughput will be maximized down to the lowest level whenever practical. The preferred method of distribution is via LRP operations as coordinated with the DSB, DASB, and FSB support operations.

7-17. Bulk fuel will be issued based on priorities established by the division G4 with guidance from the division commander. The QM company of the DSB provides DS fuel to division troops and reinforcing support to the FSBs and DASB. The QM company provides supply point and unit distribution to the division troops, as determined by fuel consumption/distances/METT-TC. The DASB HSC provides bulk refueling to the AB and the division cavalry squadron. The FSB support operations is responsible for coordinating the resupply of bulk fuel to the FSCs and the HDC. The location of the bulk refueling site and the quantity of issue is transmitted using FBCB2 to the receiving unit and the supply and transportation platoon. The HDC provides DS support to the brigade troops and backup/reinforcing support to the FSCs. The FSC support operations and the BN/TF S4 will coordinate the refueling site and quantity of issue for the maneuver companies using FBCB2. Fuel HEMTT tankers located in FSC accomplish the tactical refueling operations for the maneuver companies. Figure 7-4 depicts Class III(B) operations.
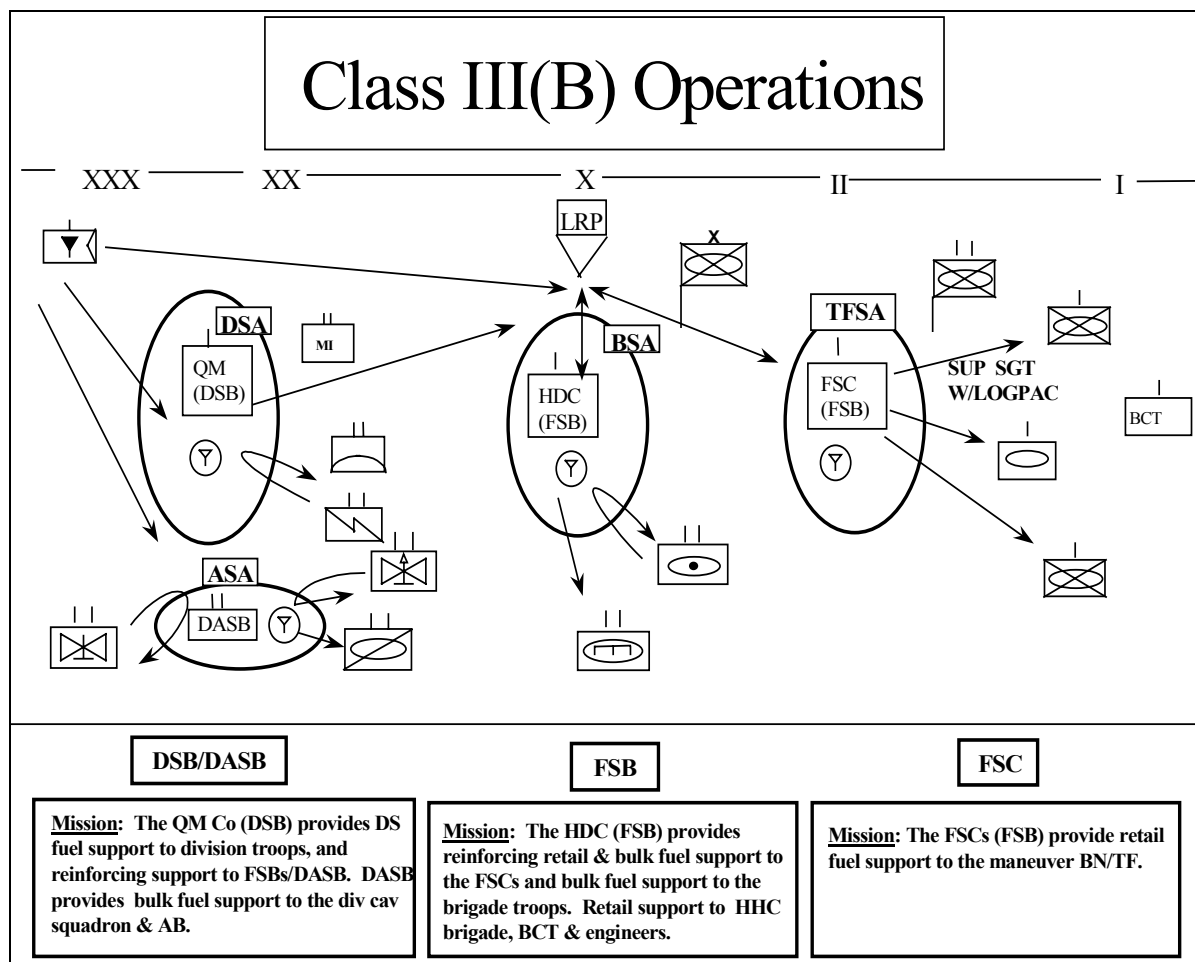
Class III(B) Operations

XXX — XX — X — II — I

DSA
QM (DSB)
MI

ASA
DASB

BSA
HDC (FSB)

LRP

TFSA
FSC (FSB)

SUP SGT W/LOGPAC

BCT

DSB/DASB	FSB	FSC
Mission: The QM Co (DSB) provides DS fuel support to division troops, and reinforcing support to FSBs/DASB. DASB provides bulk fuel support to the div cav squadron & AB.	**Mission:** The HDC (FSB) provides reinforcing retail & bulk fuel support to the FSCs and bulk fuel support to the brigade troops. Retail support to HHC brigade, BCT & engineers.	**Mission:** The FSCs (FSB) provide retail fuel support to the maneuver BN/TF.

Figure 7-4. Class III(B) Operations

FIXING THE FORCE

7-18. The overarching principle of performing maintenance as far forward as possible on the battlefield remains unchanged. Maintainers accomplish their mission by using advanced diagnostics and prognostics to diagnose to the major component fault, at which point, the component is replaced under the "replace forward" concept. "Replace forward" focuses on "on-system" maintenance tasks or those tasks that can be performed at the breakdown site, if possible, or UMCP. In the redesigned division, maintenance doctrine and procedures have been changed to gain greater effectiveness and efficiencies. One area that will require greater attention is automation maintenance.

AUTOMATION MAINTENANCE

7-19. The digitized division depends on a significant number of automated systems to accomplish its missions in both peacetime and wartime operations. Automation is a critical component of gaining information dominance, shaping the battlespace, conducting decisive combat, and protecting the force. The number of automated systems in the division, which will include ABCS systems, FBCB2, GCSS-A, laptop and desktop computers, and computers designated as servers, will increase drastically.

7-20. A major part of the success in leveraging all this automation involves the development of an integrated maintenance plan for keeping all the associated hardware and software operational and functioning. The maintenance plan must be integrated to maximize operator level, organizational, and direct support maintenance capabilities within the division and the reinforcing direct support and contractor maintenance capabilities at echelons above division.

7-21. Development of a successful automation maintenance plan at the DASB level in support of a brigade combat team's battlespace involves the following considerations:

7-22. A viable PMCS program for all automated systems that can be executed at operator level (this may entail the local development of automation PMCS kits that consist of compressed air, keyboard covers, lint sheets, and disk drive cleaners for CD ROM disks, magnetic optical disks, and floppy disks). This must be coupled with an established maintenance cycle for automation that focuses on periodic checks and services.

7-23. Clearly defined levels of maintenance responsibility for soldiers (31U/74B/35J) and contractor personnel that define who is authorized to perform certain maintenance related functions as well as identification of any warranty exceptions that may be required.

7-24. Proper positioning on the battlefield of automation related "combat spares"/ASL (cables, T-connectors, keyboards, disk drives, motherboards, UPS, etc…) that supports the replace forward/fix rear maintenance concept.

7-25. Identification of applicable tool sets and kits needed to support automation maintenance and equipping maintainers at appropriate levels with the proper tools to perform their mission.

7-26. A clearly defined division automation evacuation and repair plan that contains procedures and SOPs for contacting "Help Desks", packaging and preparation of hardware for evacuation to higher echelons, and issuance of spare or "float" automation equipment. The focus of this plan must be on maximum reduction of repair cycle time.

7-27. Other considerations at division level for automation maintenance include:

- A comprehensive training plan for exposing soldiers to automation maintenance at the operator level. This must parallel vehicle maintenance programs to the degree that maintenance of automation becomes a periodic, sustained process. Automation, like vehicles, must be viewed as combat systems and cared for accordingly.

- Increase operator confidence in troubleshooting and repairing automation systems. Reduce operator dependency on contractors and logistics assistance representative (LARs) from AMC electronic systems support center (ESSC) to solve operator and organizational problems. Free ESSC personnel to focus on isolation and repair of maintenance faults that cannot be resolved by division's organic maintenance assets.

- Proper positioning of contractor personnel and LARs from AMC ESSC in the division area. Consider establishment of various "Help Desks" at different echelons within the division battlespace (i.e. at brigade level).

- Identify duties and responsibilities of various personnel, units, and battle staff sections regarding automation maintenance. Clearly define what tasks and functions that the operators, the CSSAMO, the various S6 sections at different echelons, maintenance units, and contractors are responsible for.

- Rehearse evacuation and replacement procedures for combat critical automation systems such as FBCB2, ABCS (MCS, CSSCS, AFATDS, ASAS, AMDWS, and selected GCSS-A systems.

DIVISION AVIATION SUPPORT BATTALION MAINTENANCE CAPABILITY

Aircraft Maintenance

7-28. The AMC is an integral component of the DASB that provides aviation intermediate level maintenance for divisional aircraft. The company is structured to support the aircraft assigned to the division, specifically the observation, utility, and attack helicopters. The objective of aircraft maintenance is to ensure maximum availability of mission-capable aircraft. The purpose of aircraft maintenance is to return the maximum number of aircraft to mission capable status through the accomplishment of maintenance where it can be most effectively and economically performed. It is normally located in the aviation support area (ASA). The AMC performs extensive on-aircraft systems maintenance. This maintenance includes:

- Making structural and airframe repairs.
- Repairing components for immediate reinstallation on aircraft or to support its organic reparable exchange program.
- Performing scheduled AVIM-level inspections.

- Serving as the next-level processing agency for aviation brigade (AB) supply transactions under an automated system. This includes the receipt, storage, and issue of repair parts. It also includes the control and distribution of aviation intensively managed items (AIMI).
- Performing pass-back unit level aircraft maintenance support to the AB's aircraft

7-29. The AMC employs mobile, weapon system-oriented forward repair/recovery teams to perform authorized intermediate maintenance in the forward areas.

7-30. The AMC provides limited collection, classification, and recovery of serviceable and unserviceable materiel. It also maintains an aircraft combat maintenance/battle damage assessment and repair (BDAR) capability.

7-31. The AMC sends teams forward to assist with onsite aircraft combat maintenance, battle damage assessment and repairs, and to recover downed aircraft. The AMC provides support, as required, for all recovery missions. The intent is to return damaged aircraft to the battle as quickly as possible using specialized assessment criteria, repair kits, and specially trained personnel. The aircraft combat maintenance and BDAR team is formed from AVUM/AVIM assets and at a minimum includes a trained inspector for damage assessment, two or three repairers, and a maintenance test pilot. The composition of the team is dictated by specific mission requirements. Upon notification of a damaged aircraft, the AMC commander will dispatch a recovery crew to conduct an initial on-site inspection. The recovery crew makes an assessment of the situation and performs one of the following actions based on the condition of the aircraft. The order of recovery method is as follows:

- Apply temporary repairs to return the aircraft to the battle in less than a fully mission capable (FMC) status.
- Apply temporary repairs to allow a one-time flight to a more secure maintenance area.
- Rig for aerial or ground recovery.
- Cannibalize critical components and as directed, abandon or destroy the aircraft.

7-32. When a downed aircraft cannot be flown out under its own power, the recovery team determines the best method of recovery and implements that recovery action.

7-33. Aerial recovery is accomplished by preparing the aircraft for movement, attaching suitable airlift recovery equipment and connecting it to the lifting helicopter, and flying the aircraft to the maintenance area. Planning for aerial recovery entails a thorough analysis of the recovery site characteristics and the threat associated with relatively slow air movement over the battlefield.

Aerial recovery, when compared to ground recovery, has both advantages and disadvantages. Advantages are:

- Reducing the amount of time recovery assets are exposed to possible enemy contact.
- Requiring less aircraft sling load preparation.
- Normally, reducing the amount of security required to protect and defend the recovery site.

7-34. The disadvantages are the risks associated with exposing additional aviation assets.

7-35. Ground recovery and evacuation utilizes ground equipment and wheeled vehicles to deliver a disabled aircraft to a maintenance facility. The planning of a surface recovery follows logical steps. After evaluating the aircraft to be recovered, choose the type of equipment and transportation means required for the recovery. Then conduct a thorough reconnaissance and evaluation of the available ground routes to and from the recovery site. Further considerations include the characteristics of the recovery site and factors concerning the tactical situation. Ground recovery advantages include:

- Reducing the enemy's visibility of recovery asset movements.
- Reducing the risk associated with the recovery operation because executing a ground recovery of an aircraft is generally easier to accomplish than an aerial recovery.

7-36. Disadvantages include the amount of time required to conduct a ground recovery to include the amount of aircraft preparation required.

Ground Maintenance

7-37. The GMC provides field maintenance for all DASB non-air items and direct support (DS) maintenance for AB division cavalry squadron non-air items, including automotive, engineer, utility, power generation, C-E equipment, and small arms.

7-38. The GMC's mission is to provide support as far forward as possible to return ground combat systems to the battle rapidly. Based on METT-TC, parts availability, tools, test equipment, and mechanic expertise, mechanics perform maintenance at the point of breakdown or the equipment is recovered to a maintenance collection point (MCP) for repair. Repairs are accomplished through the replacement of major component items, i.e. major assemblies or line replaceable units (LRU). When time is limited, maintainers may perform battle damage assessment and repair (BDAR) IAW BDAR technical manuals (TMs) to return the combat system to the fight. After the mission is completed, mechanics return to the combat system and complete the required maintenance IAW equipment's TM. The GMC maintenance control section coordinates the recovery and/or evacuation of equipment that can not be repaired due to the tactical situation, extent of

damage, and/or limited availability of resources. Equipment may be recovered or evacuated to a MCP, the ASA, or other maintenance activity capable of performing the repairs. The GMC:

- Performs DS maintenance for the aviation brigade and supported elements, including repair of small arms and of communications, engineer, power generation, automotive, and utility equipment.
- Operates a collocated ASL for ground and air Class IX to support the aviation brigade. Though collocated, air and ground ASL stocks will not be intermingled.
- Performs consolidated unit maintenance for all DASB units.
- Provides technical assistance to supported unit maintenance operations within the brigade.
- Provides limited recovery assistance to supported units.
- Provides reparable exchange (RX)

7-39. The cavalry system support team (CSST) is structured to support the division cavalry squadron. This team normally operates out of the cavalry squadron combat trains area. It is reinforced with other GMC elements as necessary. The team repair capabilities include automotive/tracked vehicles, armament/fire control systems, ground support equipment, and communications-electronics equipment. The CSST also has an organic recovery capability. Figure 7-5 depicts how the division will fix the force.

CONTROLLED EXCHANGE

7-40. Controlled exchange is the removal of serviceable parts, components, or assemblies from unserviceable, but economically reparable equipment and their immediate reuse in restoring a like item of equipment to combat operable or serviceable condition. Guidance for the use of controlled exchange should be addressed in the unit TSOP.

CANNIBILIZATION

7-41. Cannibalization is the authorized removal of parts, components, or assemblies from economically nonrepairable or disposable end items. Cannibalization supplements and supports the supply operation by providing assets not readily available through the normal supply system.
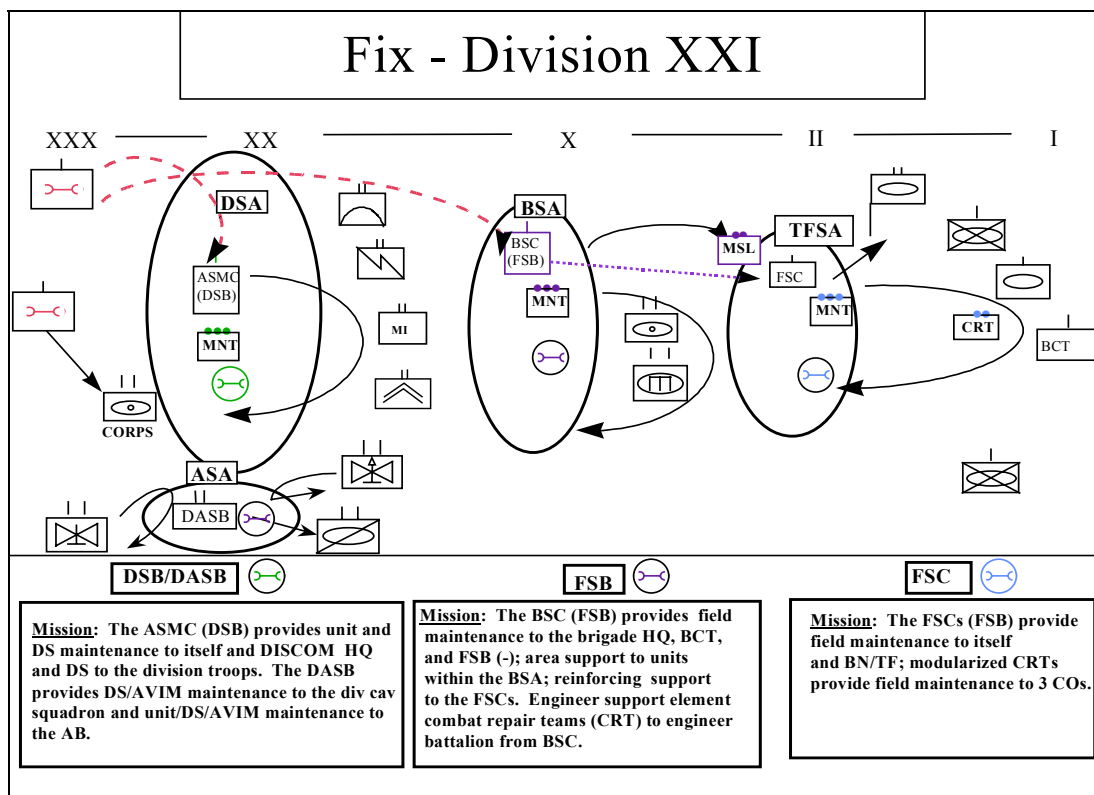
Figure 7-5. Fix Division XXI

MOVING THE FORCE

DIVISION TRANSPORTATION OPERATIONS

7-42.   The division support command (DISCOM) provides direct support CSS to the division. The foundation of this support is a single CSS operator providing unity of command and centralized distribution management at all echelons to meet the maneuver commander's intent.   Under Force XXI operations, this doctrinal premise is dependent upon battlefield distribution, throughput to forward areas, and improved situational understanding through the application of enabling technologies.

7-43.   Significant changes in division transportation operations under Force XXI operations include: an improved division transportation motor transport (TMT) company design that replaces the M931 tractors/M871 trailer combinations with palletized load handling systems (PLS); merger of movements and materiel management at the DISCOM distribution management center (DMC); reliance on corps throughput for sustainment resupply; transportation assets forward in the supply & transportation platoons of the support companies (HDC and FSCs); and movement managers located in the FSB support operations section

to provide movement control and transportation coordination for the maneuver brigade.

7-44. In order to maximize division transportation capability, planners and operators must employ the Force XXI CSS integrating imperatives discussed below as the basis for all transportation operations.

Unity of Command, Centralized Distribution Management

7-45. Synchronizing movement and materiel management and maintaining integrated end-to-end visibility of transportation assets is key to the successful operation of an efficient, fully integrated transportation system at the division level. The DISCOM movement control officer (MCO) performs this function for the division as a member of the DISCOM commander's staff and is located in the DISCOM's distribution management center. The movement control NCO performs this function for the maneuver brigade and is located in the FSB support operations section.

Increased Velocity, Throughput to Forward Areas

7-46. Throughput operations bypass one or more echelons in the distribution pipeline to minimize handling of cargo and improve velocity on the battlefield. Direct throughput relies on unity of command and situational understanding to effectively implement the use of transportation assets and to divert, re-route; and ensure continuous movement of supplies into through, and out of the division area. The DISCOM MCO maintains constant in-transit visibility (ITV) of corps sustainment resupply convoys entering the division rear boundary through MTS and other ATCCS. The movement control NCO in the FSB support operations section maintains constant ITV of all corps (or division) sustainment resupply convoys in/out of the BSA through movement tracking system (MTS). The FSB movement control NCO also synchronizes delivery schedules via Force XXI battle command brigade and below, FBCB2 with customer units to complete throughput to forward areas.

Increased Velocity, Minimize Load Handling

7-47. Minimizing load handling of cargo and reducing materiel handling equipment requirements are essential to successful throughput to forward areas under Force XXI CSS doctrine. Transportation corps materiel enabling technologies such as the PLS, HEMTT-LHS, and CROP significantly reduce handling requirements over break-bulk methods. These systems extend distribution throughput capability and enhance velocity through flatrack exchange at the division, brigade, and task force support areas. Transportation managers will coordinate efficient flatrack exchange and maximize flatrack load capacity and retrograde operations.

MOTOR TRANSPORT AND MOVEMENT CONTROL OPERATIONS IN THE DIGITIZED DIVISION

7-48.   Movement and maneuver of combat forces are normally given priority over other movements, even though CSS traffic is essential to the success of battles.   Movements planning and execution in the division are staff responsibilities, rather than being vested in operational units found at corps and above. Transportation mode operators and movement control elements at division level manage the movement of noncommitted units in the division area and requires close coordination between the division's G3 and G4. The G3 plans and directs maneuver. The G4, through the division transportation officer (DTO), DISCOM distribution management center (DMC), and DISCOM MCO coordinates and controls division transportation operations. Planning and regulating movement requires close coordination among the division staff and the commanders and staffs of brigades, separate battalions, and separate companies.

7-49.   The division G4 DTO is the primary advisor to the division commander, the coordinating staff, special staff for transportation matters, and is the formal link between the division and corps. The DTO plans for movement of the division by all modes based on the division commander's guidance.   The DTO develops and coordinates movement control and highway planning with division staff, the corps transportation officer (CTO), and division support command movement control team (MCT), habitually supporting from corps. The division G3 prioritizes CSS movement and tactical maneuver missions in support of the division operation and the DTO incorporates these priorities into all movement planning. The DTO participates in the military decision making process as a member of the division planning staff and recommends the allocation of division transportation assets and establishment of MSRs. The DTO will provide the DISCOM MCO with broad policy guidance and basic plans for the division road network written in the highway regulation and traffic circulation plans (movement annex) of the division OPLAN/OPORD.

7-50.   The DISCOM MCO supports movement control through planning, and controlling the taskings to the TMT company. The TMT company commander provides a current status of fleet availability to the MCO.   The FSB, DASB, and DSB support operations sections, as well as separate companies and battalions supported by the DISCOM pass requests for movements to the MCO. The MCO balances the requests to the availability of TMT company assets, then assigns the missions to the TMT.

7-51.   When transportation requirements exceed capabilities, the MCO must decide whether to wait for TMT company assets to become available or forward the mission to corps for support. If forwarded to the corps, the request is submitted through the DTO to the division MCT.   The supporting division MCT submits the request to the CSG(F)'s supporting area MCT. The transportation

support will come from the supporting corps support group's (CSG) transportation units. The MCO is responsible for ensuring that transportation assets are properly employed and promptly released when missions are completed.

7-52. The DISCOM MCO develops the division movement program based on the G4 logistics planner's combat service support annex of the division OPLAN/OPORD and adheres to guidance within the division movement annex. The MCO coordinates with the materiel managers of the DISCOM DMC to determine and plan for transportation of materiel and assists in the development of the CSS synchronization matrix.

7-53. The MCO coordinates with subordinate support operations movement/materiel managers to ensure delivery of sustainment supplies to the correct location and integrates retrograde movement of equipment, flatracks, and personnel. Throughput distribution is the preferred method of delivering commodities and supplies to requesting supply support activities or to the user. Sustainment materiel delivered to the DSB, DASB, and FSB will normally be scheduled deliveries and synchronized with subordinate support operations sections and customer units. Corps transportation assets contact the movement managers (MCO and DSB/DASB/FSB distribution managers) through MTS when entering the division/brigade rear boundary(s) and delivering to the DSA, ASA, or BSA logistics release points (LRPs). The movement managers will forward the coordinating information through their supporting area MCTs to the division via MTS. All divisional and non-divisional units operating in the division rear area will submit transportation requests and movement clearance requests to the DISCOM MCO. Figure 7-6 depicts the division movement control flow.
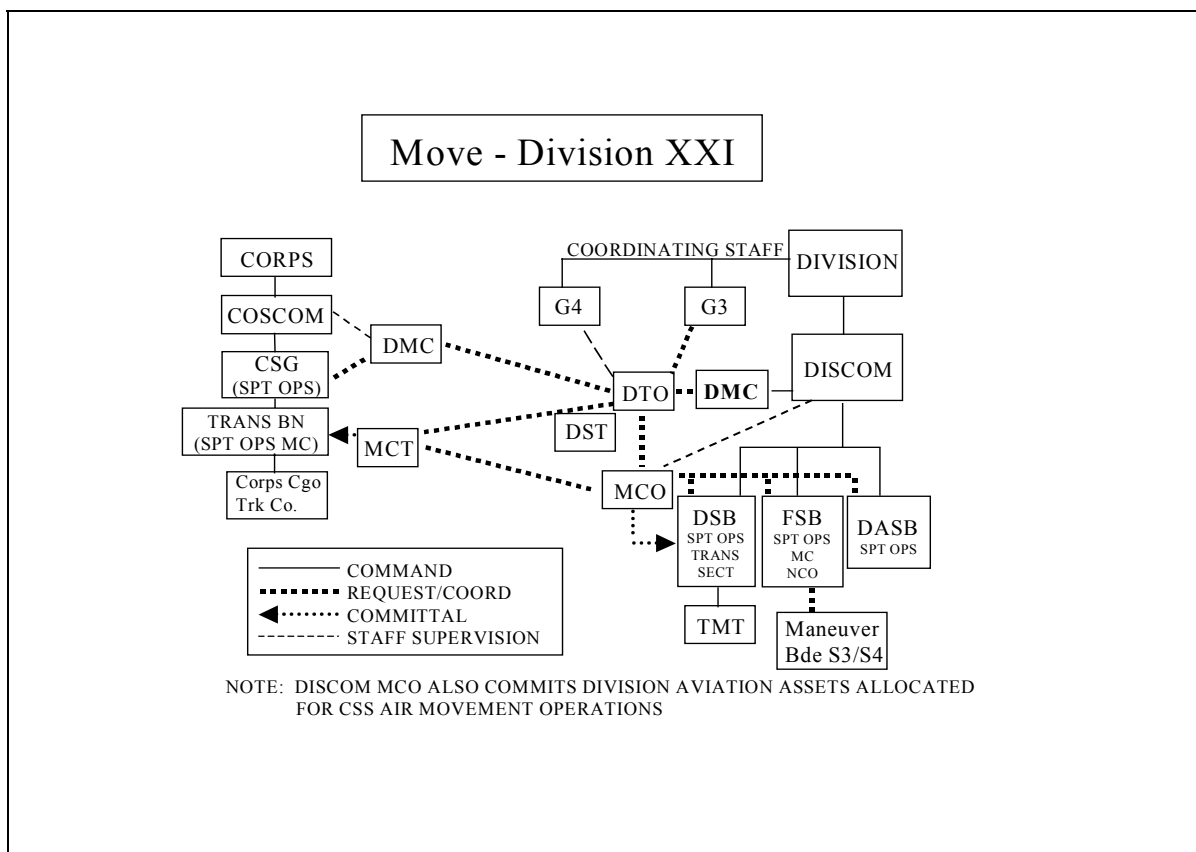
Figure 7-6. Division Movement Control

7-54.   Transportation operations and movement control in the maneuver brigade is a CSS staff responsibility The brigade S4 provides the brigade commander with overall staff responsibility for highway regulation and MSR/ASR establishment in the brigade area in coordination with the brigade S3's priority of movement and the DTO's highway regulation and traffic circulation plans. Movement control at the brigade level requires close coordination between the brigade S4, DISCOM MCO, FSB support operations officer, and the battalion S4/FSC support operations officer at the BN/TF level.

7-55.   The movement of the maneuver brigade is coordinated and synchronized with the division G3, G4, and the DTO. Unless the movements are planned concurrently with the tactical plan, the best plans can be thwarted by road congestion.   The brigade S3 approves all tactical movements in the brigade's battlespace. The brigade S3 must also maintain visibility of CSS movements to ensure they are synchronized with the scheme of the tactical movement. The brigade S4 plans, and manages all movements with assistance from the FSB support operations.

7-56. The FSB support operations section assumes the distribution management center's role in providing continuous and responsive sustainment to the brigade through a variety of STAMIS and ATCCS managed by the section. The FSB's limited distribution capability relies heavily on support from the DISCOM and corps for sustainment throughput. The FSB's distribution manager synchronizes the delivery schedule with customer units and transfers information between the brigade S4 and the battalion S4/FSC support operations section (via MTS) to schedule and synchronize transportation requirements within or in direct support of brigade or battalion operations. For supplemental transportation support and coordination on inbound and outbound shipments the FSB movement control NCO coordinates with the DISCOM MCO through MTS

7-57. The FSC support operations section assumes the movement and materiel management and maintenance (evacuation) functions of a DMC at the lowest echelon of support to a battalion task force. The FSC support operations officer coordinates with the task force S4 and synchronizes the delivery of all classes of supply with customer units and transfers requirements and capabilities to the FSB support operations officer (info copy to FSC Cdr.). The FSC support operations officer schedules and synchronizes transportation support, and the FSC rear CP coordinates inbound and outbound shipments with the FSB movement control NCO through MTS.

FIRST DESTINATION REPORTING POINT

7-58. A first destination reporting point (FDRP) is normally established along a MSR at or near the division rear boundary. The FDRP is a point manned by a movement regulating team, a movement control team, or military police that diverts a driver and cargo to an alternate consignee or destination. Basically, FDRPs are logistical information checkpoints. FDRPs support velocity management and situational understanding.

7-59. Even though the division is digitized, a FDRP is routinely required since many echelon above division (EAD) supporting units, host nation support, and/or contractors will be non-digitized. Either the division or an EAD unit can operate the FDRP. Optimally, both the division and supporting EAD headquarters have representatives located at the FDRP continuously. Security arrangements, command and control, and communications support must be addressed prior to FDRP establishment. Further amplification of FDRP operations can be included in unit SOPs. Some tasks performed at the FDRP are below:

- Track location of critical supplies.
- Perform movement control functions.
- Provide instructions to convoys.
- Provide and receive latest intelligence.

- Reroute convoys/vehicles.
- Provide information on routes and weather.
- Establish division "light line" for black-out driving.
- Linkup point for armed convoy escort vehicles.

FLATRACK MANAGEMENT OPERATIONS

7-60.   Flatracks offer tactical efficiencies that serve an increased pace of logistical operations and significantly alter the speed at which service support is provided to the warfighters.   The key to sustaining these efficiencies and maintaining improved throughput velocity is flatrack employment, management, and retrograde procedures at each echelon of support.   An increased battlespace depth and a reduction of CSS force structure challenge flatrack management and ultimately sustainment of combat power within the FXXI division area of operations.   Flatrack management is a challenge that must be met in order successfully sustain combat power on the FXXI battlefield.

7-61.   Flatrack employment, management, and retrograde operations are the responsibility of distribution managers integrated at each echelon of support throughout the division area.   Flatracks will be dispersed throughout the distribution pipeline, particularly from the division rear boundary to the combat trains command post of a maneuver task force.   It is imperative that stringent flatrack management procedures be implemented at the tactical level on an area basis.

Task Force Support Area Flatrack Management Operations

7-62.   The FSCs operating TFSAs face increased flatrack management challenges they are mobile units with limited transportation assets to move supplies and retrograde flatracks. Flatrack management responsibilities within the TFSA rest with the FSC support operations officer and the FSC S&T platoon leader. The FSC support operations officer flatrack responsibilities include:

- Identifying a proposed flatrack collection point (FRCP) upon occupation of the TFSA in coordination with the FSC S&T platoon leader.
- Managing all common user flatracks on an area basis.
- Ensuring flatrack exchange (providing a back hauled flatrack for every received) procedures are adhered to as a matter of priority.
- Maximizing the use of FSC S&T LHS for retrograding flatracks from the FRCP back into the distribution pipeline.
- Reporting flatrack on-hand quantity by location, status, and condition to the FSB support operations office movement control (MC) NCO.

- Coordinating with the FSB support operations MC NCO for supplemental transportation support when retrograding flatracks from the TFSA FRCP.

7-63. The FSC S&T platoon leader flatrack responsibilities include:

- Identifying a proposed flatrack collection point (FRCP) upon occupation of the TFSA in coordination with the FSC support operations officer.
- Ensuring flatrack exchange procedures are adhered to as a matter of priority.
- Collecting and consolidating empty flatracks across the BN/TF sector.
- Reporting flatrack on-hand quantity by location, status, and condition to the FSC support operations officer.
- Back hauling/cross leveling items on flatracks such as ammunition residue, trash, remains, unserviceable parts/assemblies, as directed by the FSC support operations officer.

7-64. Flatrack exchange is the preferred method for retrograding flatracks from the TFSA. Flat rack collection points are designated for flatrack consolidation purposes when required and this proposed location is reported to the FSB support operations officer. Logistics release points (LRPs), supply routes, feeder routes accessing supply routes, other collection points, and force protection measures are considered when selecting these locations. Flat rack collection points can also be collocated within the existing TFSA FSC perimeter or consolidated with adjacent FSCs to maximize force protection resources.

Brigade Support Area Flatrack Management Operations

7-65. A FSB operating in the BSA has flatrack management responsibilities for all flatracks throughput to and retrograding from the brigade area. Flatrack management responsibilities within the BSA rest with the FSB support operations office, supply & services movement control (MC) NCO and the HDC S&T platoon leader.

7-66. The FSB support operations MC NCO flatrack responsibilities include:

- Identifying a proposed flatrack collection point (FRCP) upon occupation of the BSA in coordination with the HDC S&T platoon leader.
- Managing all common user flatracks on an area basis.
- Ensuring flatrack exchange procedures are optimized using division and corps throughput assets as a matter of priority.
- Maximizing the use of HDC S&T LHS for retrograding/back hauling flatracks from the FRCP back into the distribution pipeline.

- Reporting flatrack on-hand quantity by location, status, and condition to the movement control office (MCO), DMC, DISCOM.
- Monitoring the status and location of FSC FRCPs.
- Coordinating with the DISCOM MCO for supplemental transportation support when retrograding flatracks from BSA FRCP.

7-67. The HDC S&T platoon leader flatrack responsibilities include:

- Identifying a proposed flatrack collection point (FRCP) upon occupation of the BSA in coordination with the FSB support operations office MC NCO.
- Ensuring flatrack exchange procedures are adhered to as a matter of priority.
- Collecting and consolidating empty flatracks/back haul items across the brigade rear area and at TFSA FRCPs.
- Reporting flatrack on-hand quantity by location, status, and condition to the FSB support operations MC NCO.
- Retrograding unserviceable assemblies/parts, supplies, trash, remains, or any back hauled/cross-leveling item on flatracks as directed by the FSB support operations office MC NCO.

7-68. The preferred method for retrograding flatracks from the BSA is flatrack exchange with the FSCs, division rear support units, and corps sustainment resupply convoys. Flat rack collection points are designated for flatrack consolidation purposes when required and this proposed location is reported to the DISCOM MCO. Logistics release points (LRPs), supply routes, feeder routes, accessing supply routes, supply support activity, and other collection point locations, and force protection measures are considered when selecting these locations. They can also be collocated within existing logistical nodes to maximize force protection resources.

Division Rear Area Flatrack Management Operations

7-69. The division support operations office has flatrack management responsibilities for all flatracks throughput to and retrograding from the division rear area. Overall flatrack management responsibility within the division rear area rests with the DISCOM MCO. The DISCOM MCO has flatrack management and status reporting responsibility to the supporting area movement control team (MCT) of the supporting corps support group.

7-70. Within the division rear area, flatrack management responsibilities are delegated further on an area support basis. The DSA and the ASA assume flatrack management responsibilities for their respective areas. The DSB support operations office, transportation section (in the DSA) and the DASB support operations office (in the ASA) are charged with collecting empty flatracks within their area of responsibility and providing a daily flatrack status report to the DISCOM MCO.

7-71. The preferred method for retrograding flatracks for the DSB and the DASB is flatrack exchange with corps sustainment resupply convoys. The DISCOM MCO, in coordination with the DSB and DASB, identifies proposed FRCPs upon occupation within the division rear area. The FRCPs are designated for flatrack consolidation purposes when required and this proposed location is reported to the supporting area MCT. Supply routes, LRP, feeder routes accessing supply routes, supply support activity and other collection point locations, and force protection measures are considered when selecting these locations. FRCPs can also be collocated within existing logistical nodes to maximize force protection resources.

7-72. The DISCOM MCO, DSB, and DASB manage all common user flatracks on an area basis, ensure flatrack exchange procedures are optimized using division and corps assets as a matter of priority, and maximize the use of TMT company PLS for retrograding flatracks from the FRCPs back into the distribution. The DSB and DASB support operations offices coordinate with the DISCOM MCO for supplemental transportation support for flatrack retrograding from their respective areas. DISCOM MCO submits requests for supplemental transportation support to the supporting area MCT for flatrack retrograding from the division rear support area FRCPs.

Flatrack Reporting Procedures

7-73. Accurate daily reporting of flatracks in a unit's area of responsibility by location, status, and condition is critical to efficient management of this crucial asset within the distribution pipeline. A separate report is not required for reporting flatrack status. Flatrack managers roll flatrack status into existing reports. Requests for supplemental transportation to retrograde flatracks on the battlefield are submitted as routine transportation requests through support operations channels. Flatrack procedures outlined in this appendix will be incorporated into unit tactical standing operating procedures (TACSOPs). Figure 7-7 depicts the digitized division's flatrack management flow.
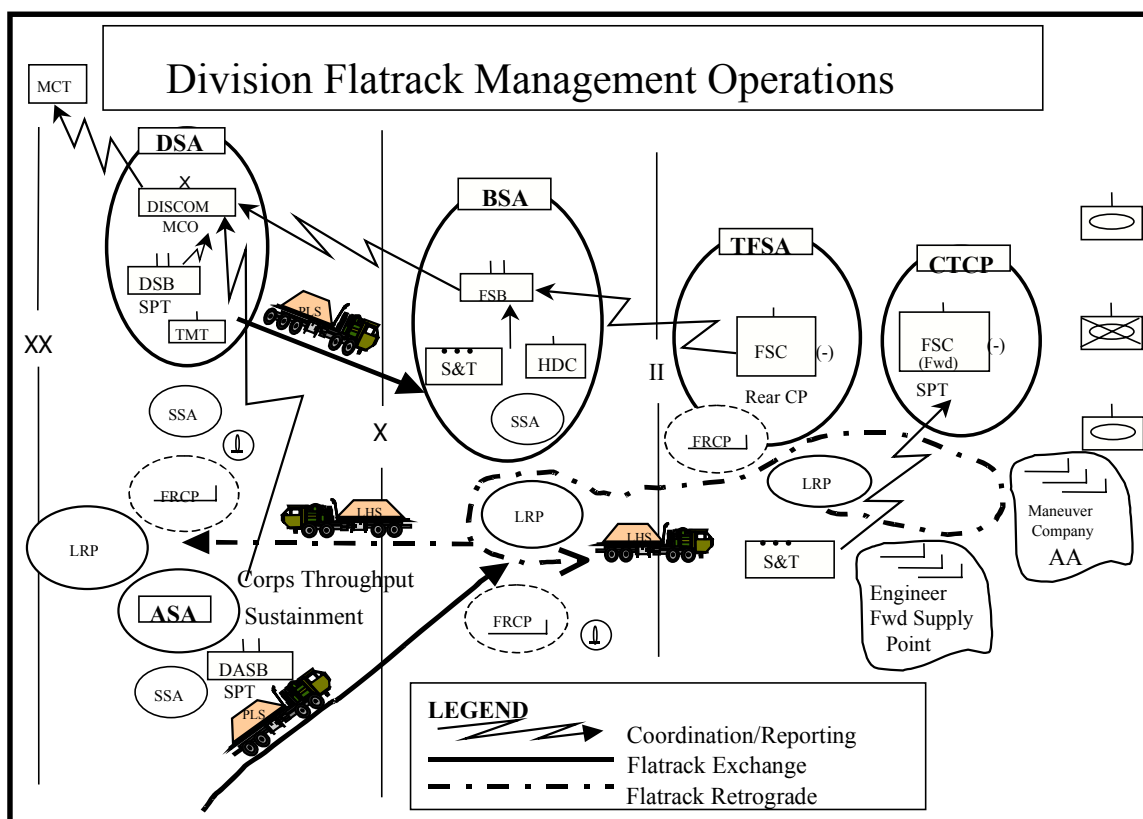

Figure7-7. Division Flatrack Management Operations

ARMY AIRCRAFT SUPPORT

7-74. Logistics planners categorize air movements request as preplanned or immediate. Units submit preplanned requests to satisfy programmed requirements 24-hour or more in advance. Immediate requests are initiated when there is less than 24-hour notice, support is absolutely essential to the survival of the unit, or when lack of support will result in complete mission failure.

7-75. Units submit requests to the DASB movement control NCO who forwards requests to the MCO at the DISCOM DMC. If the MCO determines use of aviation assets is appropriate, the request is forwarded through the DTO to the division G3 air officer. The G3 air officer allocates helicopter lift support by balancing combat, combat support, and CSS requirements. If divisional assets are not available the DTO submits a request through the CMCC to higher headquarters. For immediate requirements the DTO coordinates through division G3 air to corps G3 air.

7-76. When aviation assets are dedicated to CSS distribution missions for certain periods of time, the aviation brigade sends a liaison officer to the DMC movement control office of the DISCOM support operations. If aviation assets are required for CSS distribution missions, the MCO submits preplanned requests for these assets from the flight opns/S3 of the aviation brigade through the liaison officer (info copy to DTO). This liaison officer advises the MCO on capabilities and limitations of the aircraft, particularly the lift capability for current environmental conditions.

7-77. The MCO provides movement requirements including size of the load, pickup and delivery times, location of landing zones, and any special handling requirements pertinent to aircraft operations. The MCO also coordinates with the appropriate commodity manager within the DMC for transportation of supplies. If the aviation brigade is unable to support requirements, the MCO contacts the DTO. The DTO coordinates with the G3 air officer for verification and forwards the request to the corps through the division support MCT.

7-78. Units submit immediate requests for resupply and transportation through the same logistics channels as preplanned requests. However, the requests are submitted simultaneously through command channels from the unit to G3. The MCO will submit the request through the DTO, who verifies the request. Once verified, the DTO forwards the request to the G3 air via CSSCS. At the same time the G4 coordinates for immediate resupply with the DMC commodity manager to identify the appropriate supply company to prepare the immediate shipment (reference FM 55-450-5). If the aircraft is equipped with FBCB2 the pilot contacts the supported customer to finalize coordination. Information is passed to both the supporting and supported units as well as the responsible operations center/staff proponent.

GENERAL HELICOPTER CSS MISSION AREAS

Transition to War

- Self-deploy to area of operations.
- Provide early in-theater transport.
- Move priority cargo, weapons, ammo, POL and barrier material forward from ports/staging areas to establish supply points.

Deep Battle

- Move troops, equipment, weapons systems, ammo, POL, priority supplies from rear to forward staging areas to support deep battle operations.
- Deploy reinforcing units; evacuate wounded, recover battle-damaged equipment, and forward repositioning of artillery.

Covering Force and the Main Battle

- Support air assault units with rapid resupply of ammo and POL.
- Augment reaction forces into blocking positions to contain enemy.
- Rear battle.
- Move forces and equipment to counter operations in rear.
- Augment reaction forces into blocking positions to contain enemy.

Combat Support

- Emplacement, repositioning, resupply of forward area refueling points (FARPs).
- Rapid repositioning of reinforcement troops, equipment, artillery (etc.).
- Transport barrier materials, mines, bridging equipment for engineering support.

Combat Service Support

- Provide logistical air transport of cargo from rear to as far forward as brigade rear areas meeting time sensitive and surge demands.
- Deliver critical loads to areas not accessible by ground or Air Force airlift.

- Employed to move priority cargo to overcome congestion and enemy inflicted gaps in transportation system.

SUSTAINING THE FORCE

7-79. Sustainment is the provisioning of personnel, logistics, and other support required to maintain and prolong operations or combat until successful accomplishment or revision of the mission or of the objective.

CLASS I

7-80. Food is one of the most important factors affecting a soldier's health, morale, and welfare. However, the acquisition, storage, transportation, distribution, preparation, and serving of food have always been a logistics challenge. The Army field feeding system (AFFS) is based on three basic rations. The MRE is the individual combat ration. The T ration is a group-feeding ration, and the B ration is also a group feeding ration but one that must be prepared. the requirement to serve "three quality meals per day", with the capability to distribute, prepare, and serve a unitized group ration "A" (UGR-A), a "heat and serve" UGR meal, and a meal, ready to eat (MRE) individual ration" (Chapter 1, FM 10-23) after initial entry into the theater.

7-81. As the operational situation permits, efforts are made to distribute, prepare and serve the UGR-A introduce the A ration into the theater. This requires extensive planning and coordination. Some key points planners need to consider with the UGR-A rations are: refrigerated storage, distribution equipment, and the availability of ice for unit storage.

7-82. The FSC provides consolidated food preparation for the FSC and BN/TF. The FSC has the ability to prepare meals forward in each CO/TM area based on METT-TC. The food service section cooks the UGR-A, A, and B rations or heats the heat and serve meal T rations in its organic mobile kitchen trailer (MKT). Food can be packed in insulated food containers and sent with the LOGPAC to CO/TM location where CO/TM personnel serve the meals. The HDC, FSB provides food service support to itself, BSC(-), HHC brigade, brigade cavalry troop and FSMC. The engineer support element, BSC provides food service support to the engineer battalion. Food and beverage containers are sent back for reuse. Where practical, small units are fed by unit, designated on an area basis.

7-83. The Army field feeding standard for combat is one UGR-A(heat and serve), meal prepared (A or B), and an MRE each day. The wartime feeding policy assumed theater-wide use of MREs for the first several days of combat with the eventual transition to distribution and preparation of UGR meals, prepared T and B Rations.

7-84. The DISCOM receives headcount data for Class I from the FSB, DSB, and DASB support operations sections from CSSCS, and in turn sends it to CMMC. Corps or EAC will configure rations

in BN/TF sets and push them forward to the FSB, DSB, and DASB field ration issue point IAW the ration cycle. The FSB, DSB, and DASB support operations sections coordinate with supported units for the location of ration issue point and pick-up schedule. Figure 7-8, shows Class I resupply.

7-85. Rations are pushed forward to the FSB, DSB, and DASB field ration issue point based on personnel strength reports, planned operations, and anticipated task organization. The support operations Class I section converts this data to line requisitions that are sent to the CMMC. The Class I field ration issue point verifies shipping documentation with the shipment received. They also inspect shipments of ration for type, number, and condition or items received.

7-86. When the division is engaged in combat, the ration supplement health care package (HCP) is usually issued with the rations. Issue is to division troops and those attached troops operating in the division area. These supplement HCPs should not be confused with Class VI supplies. The HCP is composed of items essential to the health and comfort of troops. These items include toilet articles and confections. Pending establishment of adequate service facilities, this packet is made available in theaters of operations for issue.
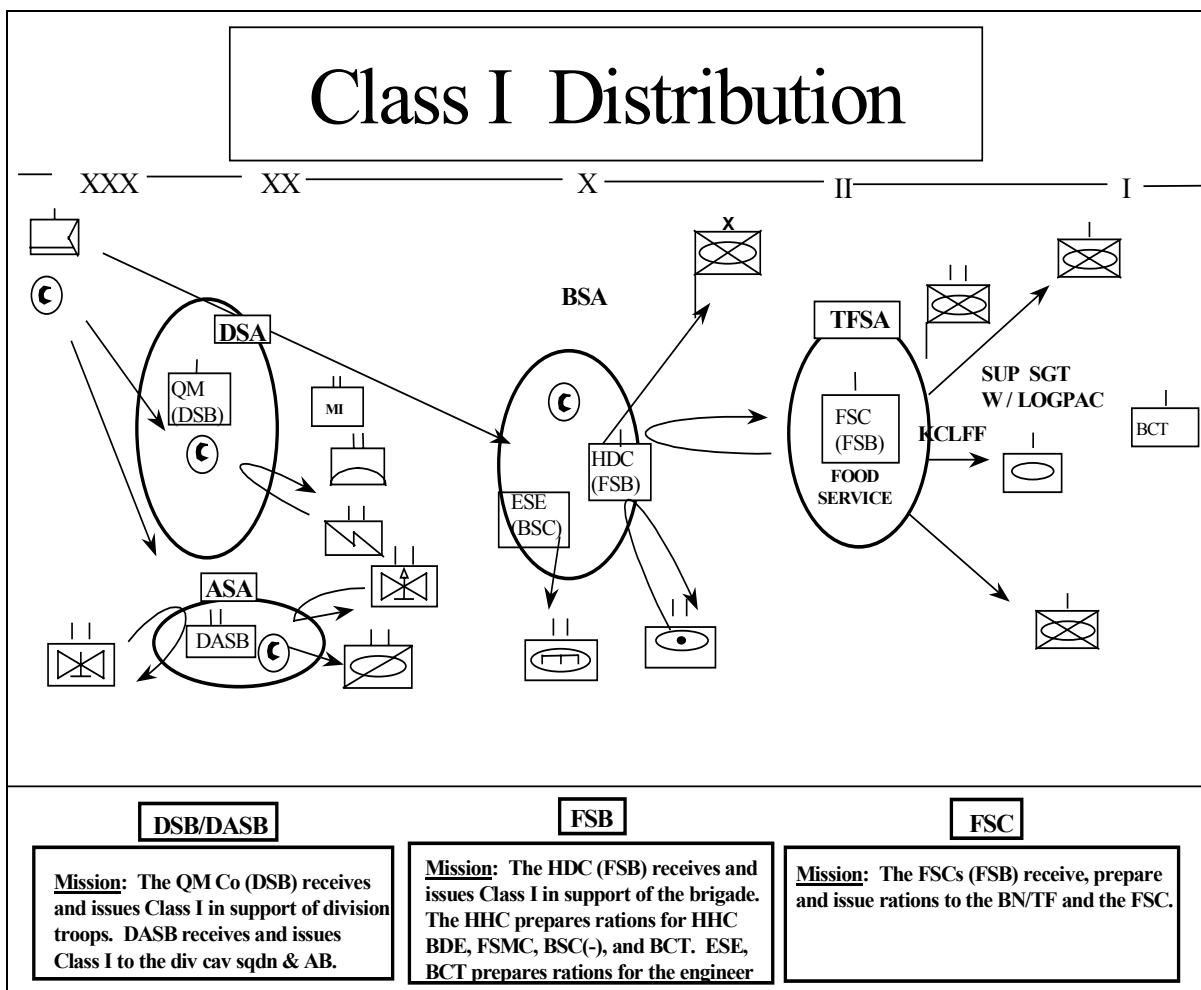
Class I Distribution

XXX —— XX ———————— X —————————— II ——————————— I

BSA

DSA

QM
(DSB)

MI

ASA

DASB

TFSA

FSC
(FSB)

FOOD
SERVICE

ESE
(BSC)

HDC
(FSB)

**SUP SGT
W / LOGPAC**

KCLFF

BCT

DSB/DASB	FSB	FSC
Mission: The QM Co (DSB) receives and issues Class I in support of division troops. DASB receives and issues Class I to the div cav sqdn & AB.	**Mission:** The HDC (FSB) receives and issues Class I in support of the brigade. The HHC prepares rations for HHC BDE, FSMC, BSC(-), and BCT. ESE, BCT prepares rations for the engineer	**Mission:** The FSCs (FSB) receive, prepare and issue rations to the BN/TF and the FSC.

Figure 7-8. Class I Distribution

WATER

7-87. The Class III and water supply branch of the division support operations will manage water distribution within the division. Figure 7-9 shows the DISCOM water distribution organization. Water production and storage is provided to the division by an augmentation team from the modular water unit within the COSCOM. This water augmentation team is capable of establishing water points that produce, store and issue potable water. The augmentation team will establish water points in the DSB, DASB and each FSB. The team is dependent on the division for life support and force protection. Water points are normally attached to the support battalions.

7-88. Water points may produce, store, and issue or (without the availability of a suitable water source) simply store and issue potable water. In an arid environment, water points will receive additional storage capacity from the COSCOM. Within an arid environment or where there is no suitable water source, the COSCOM will deliver water as part of normal sustainment pushes. An adequate water source should be a consideration when selecting the division, aviation, and brigade support areas. Limited water sources may require massing production assets from the augmentation team and transporting the water to support area water points. Water distribution within the DSA, ASA and BSA will be through supply point distribution at the water points. The headquarters and support company's hardwall tankers will be used to distribute water to maneuver battalions. Maneuver company supply sergeants fill their water trailers at the TFSA according to an established schedule. Figure 7-9 shows water purification and distribution.

7-89. Bottled water may be locally procured or shipped from outside of the theater of operations. Bottled or packaged water is particularly well suited for reception, staging, onward movement, and integration (RSOI) and initial operation, however (situational dependent) may be routinely issued throughout an operation or conflict. It is normally distributed along with Class I. The Army Medical Command has the responsibility for quality surveillance and quality assurance for bottled water.
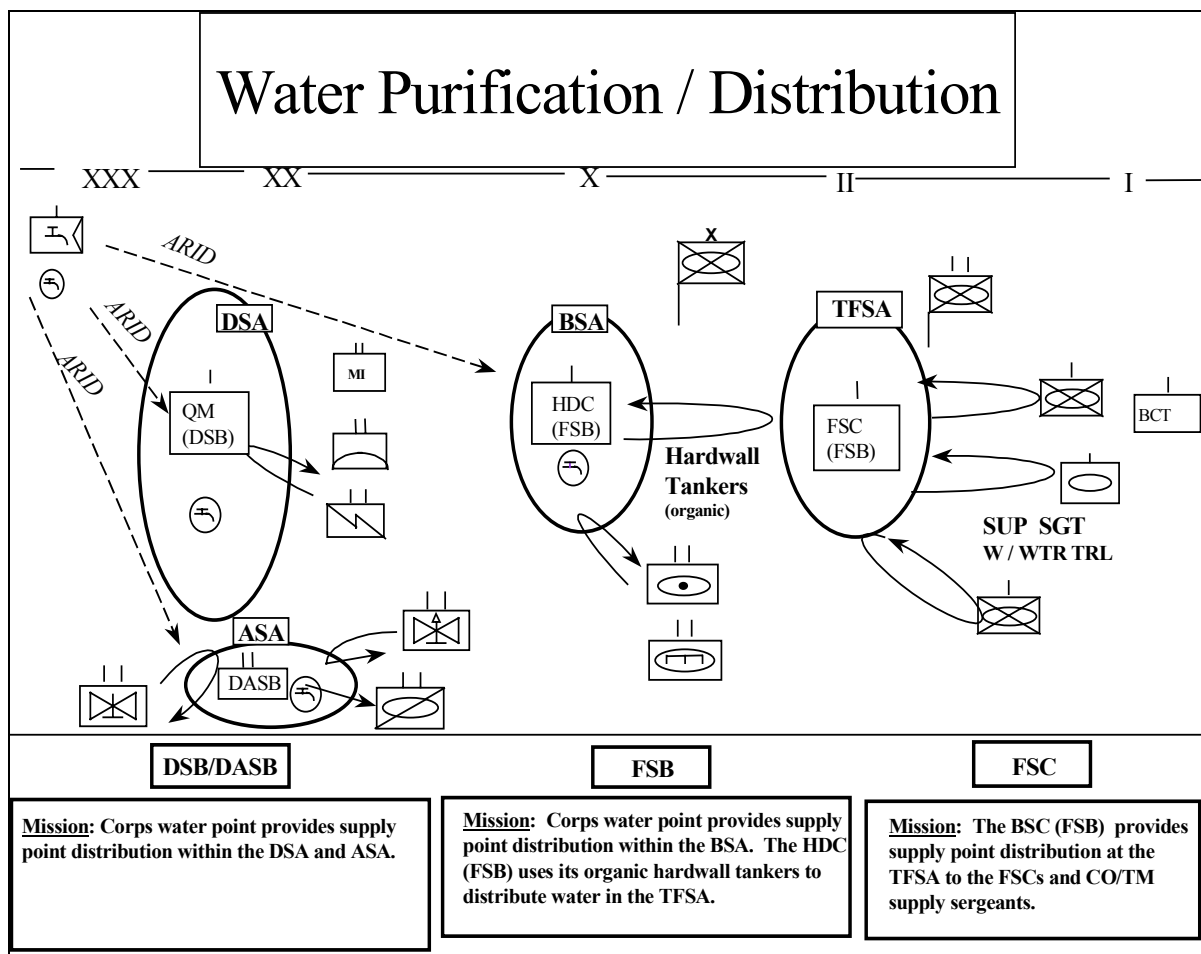
Figure 7-9. Water Purification/Distribution

CLASSES II, III(P), AND IV

7-90. Classes II, III(P), and IV and unclassified maps include a wide variety of supplies and equipment from clothing to tools, to packaged petroleum products, to barrier materials. The FSC of the FSB issues Class II, III(P), and IV to units in the maneuver BN/TF. The HDC of the FSB will maintain limited stockage for support of the brigade supply point distribution to brigade troops. The QM company out of the DSB will issue Class II, III(P), and IV to division troops. Stockage for the support of division troops is kept in the supply platoon of the QM company. This stockage is not based on maneuver brigade consumption. The HSC of the DASB will maintain stockage for support of the AB and division cavalry squadron.

7-91. Unclassified maps follow the same requisition flow as Classes II, III(P), 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.

7-92. Units in the brigade area submit their requests for Class II, III(P), and IV items through the appropriate STAMIS (ULLS-S4), to their supporting FSC. The supply and transportation (S&T) platoon issues the item to the customer. If supplies are not on hand at the FSC, the request is sent to division support operations (SARSS-2A). Personnel in the Class II, III(P), and IV supply branch of division support operations check within SARSS-2A. If they find the items are on hand in the SSAs, they will release it or forward the request to the corps SARSS-2A. The division support operations can also direct cross leveling of items within FSBs. The supporting COSCOM activity delivers the supplies to the respective SSA according to the department of defense activity address code (DODAAC). Units in the division rear submit their Class II, III(P), and IV request through the appropriate STAMIS (ULLS S4) to their supporting QM company in the DSB. Units in the aviation brigade and division cavalry squadron submit their Class II, III(P), and IV request through the appropriate STAMIS (ULLS S-4) to their supporting HSC in the DASB. Figure 7-10 shows the DISCOM supply operations for Class II, III(P), and IV as well as Class VII and IX supply operation, and Figure 7-11 shows the requisition flow for Classes II, III(P), and IV.
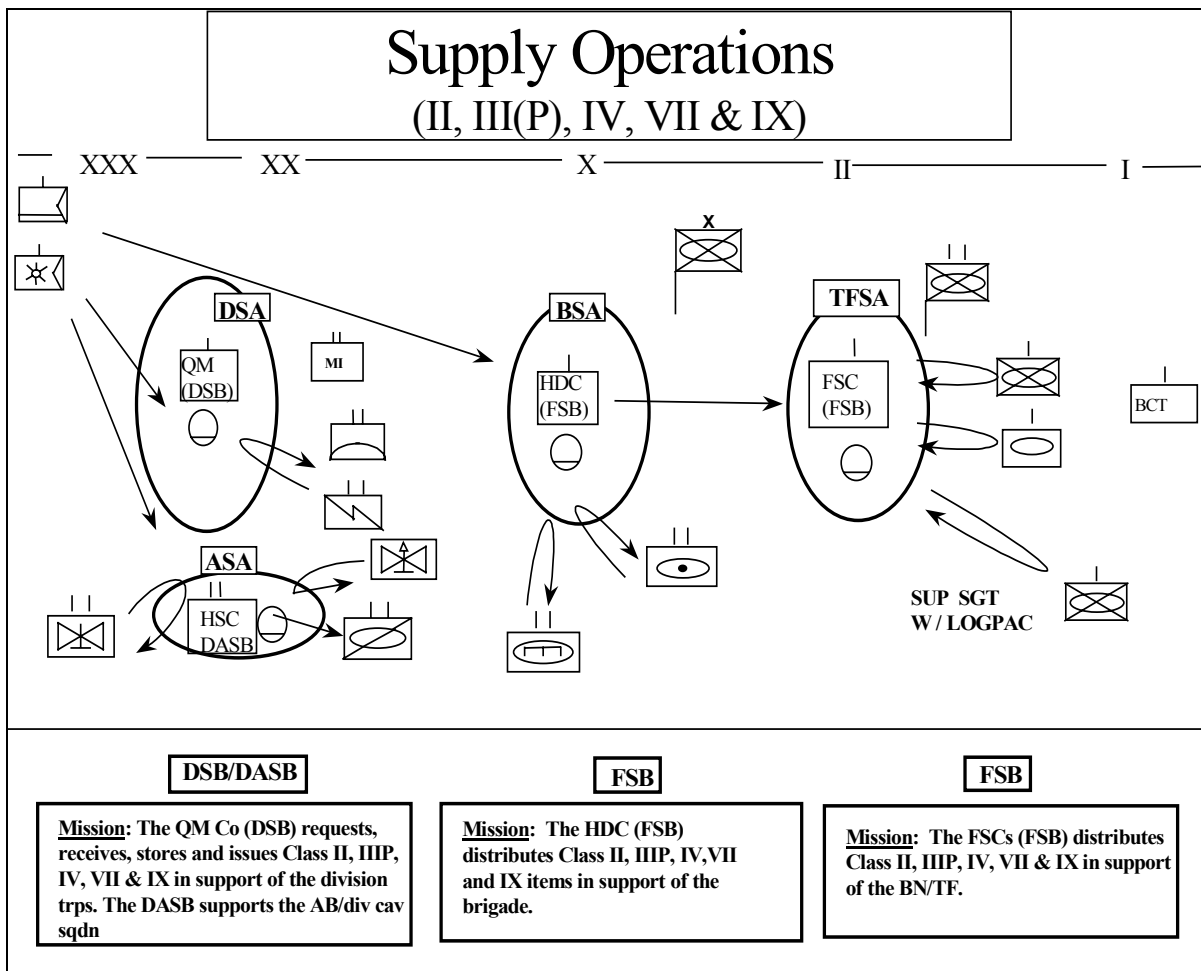
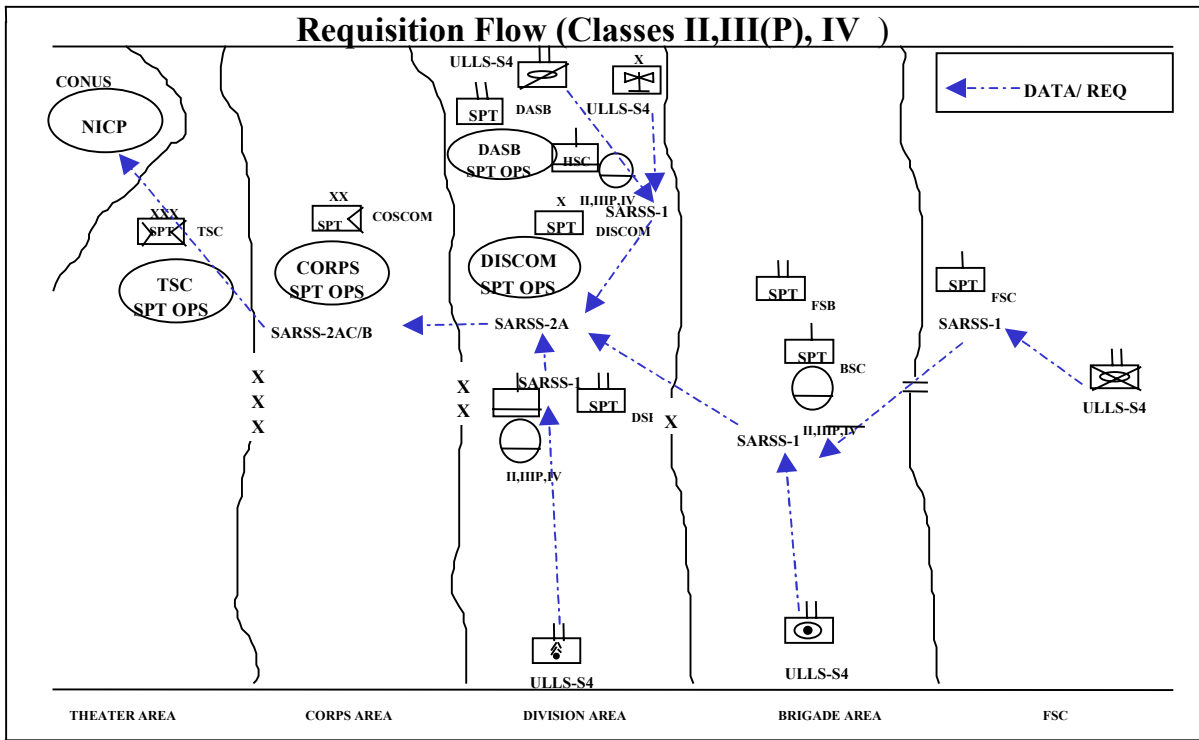**Figure 7-10. Classes II, III(P), IV, VII, IX Resupply**

Figure 7-11. Requisition Flow for Classes II, III(P), IV

7-93. The limited stockage of Class II items may include MOPP gear, environmental protection items (boots, overshoes, parkas, and helmets), and mechanics' tools. Distribution plans for protective clothing and equipment must consider the threat and the service life of protective overgarments and filters. Unit priorities for issue must be established.

7-94. The QM company in the DSB, the HSC in the DASB, and the HDC in the FSB or, if appropriate, the gaining unit's supply element, re-equip soldiers returning to duty from medical treatment facilities (MTFs) in the division rear area. The FSB/DASB may re-equip return to duties (RTDs) in the brigade area. If the gaining unit has support elements operating in the vicinity of the MTF, SOP may require that the unit bring personal equipment when it picks up personnel returning to duty. If the gaining unit does not have elements operating near the MTF, SOP may require medical personnel to pick up clothing and essential protective gear at the supply point to provide minimum protection before the soldier returns to duty. The MTF cannot issue individual weapons.

CLASS VI

7-95. Class VI supplies are those items used for personal hygiene, comfort, and welfare. They include such things as candy, gum, dental care products, soap, and stationery. Initially the soldier carries these personal items with him. As the supply system

adjusts to demand, resupply is by HCP where personal demand items are issued gratuitously. HCP, as already mentioned, are issued with Class I items. When the situation permits, tactical field exchanges provide services to specified units to troop concentrations.

CLASS VII

7-96. Class VII items are intensively managed and are normally command controlled. Class VII replacement is based on combat losses reported through command channels to the division G3 and G4 via MCS and CSSCS. 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 weapon system replacement operations (WSRO). If the item is a WSRO weapon system, the primary linkup points of the item with its crew may occur in the DSA/ASA/BSA or in designated assembly areas.

7-97. Class VII requests will be accomplished by using the FBCB2 to submit combat loss reports from company level to the BN/TF S4. The CO/TM rollups will be consolidated by the BN/TF S4 and submitted to the brigade S4, with an information copy provided to the FSC support operations. The brigade S4 will consolidate and submit battalion combat loss reports to the division support operations via CSSCS, with information copies provided to the division G4 and FSB support operations. The Class VII/PBO representative from the division support operations will enter the requests into the appropriate STAMIS (SPBS-R to SARSS-1). The DSB support operations will consolidate and submit division troops battle loss reports for Class VII to the division support operations, with a copy provided to the G4. The DASB support operations will consolidate and submit aviation brigade and division cavalry squadron requests for Class VII to the division support operations, with a copy provided to the G4.

7-98. A predetermined amount of Class VII may be maintained and issued to division organizations upon division support operations approval, based on guidance from the division G4. Upon corps approval of division support operations Class VII requisitions, corps support command (COSCOM) units transport Class VII equipment to the supporting SSA (QM CO, HSC, HDC, or FSC) or directly to the requesting unit when possible. Class VII supply operations is shown in Figure 7-10.

CLASS VIII

7-99. Class VIII management in the Army's Force XXI division is accomplished by medical units/elements through the use of a functional business system called medical logistics-division (MEDLOG-D). Currently the functional business system for Class VIII wholesale/retail management at echelons above division (EAD)

is the theater army medical management information system (TAMMIS) which is a legacy system. This system will be replaced in the future by the defense medical logistics standard support (DMLSS) System. MEDLOG-D is a module of DMLSS and is scheduled for fielding to division and corps medical units/elements. This system provides division and corps medical units/elements a direct link with the supporting MEDLOG battalion's units. The health service materiel officer (HSMO) of the division surgeon's section (DSS) and the DISCOM medical materiel management branch (MMMB) in the division support operations section, coordinates Class VIII resupply for division medical units/elements. Each medical unit maintains its own basic load of 3 days of medical supplies. The MEDLOG battalion assigns one MEDLOG company in direct support of each division. Once established, it provides Class VIII resupply for the division and corps medical elements operating in the division AO.

7-100. During deployment, lodgment, and early buildup phases, medical units operate from planned, prescribed loads and from existing pre-positioned war reserve stockpiles identified in applicable contingency plans.

7-101. During the initial employment phase, each FSMC will receive a preconfigured medical resupply push-package every 48 hours from pre-positioned stock or the continental United States (CONUS) base. Preconfigured medical resupply push-packages will continue until appropriate units of the corps MEDLOG battalion are established.

7-102. Initial resupply efforts may consist of preconfigured medical supply packages tailored to meet specific mission requirements. Preconfigured push-packages will normally be shipped directly to the division support medical company (DSMC) and FSMCs until replenishment line item requisitioning is established with the supporting MEDLOG company. During this time, medical company treatment and ambulance teams deployed with maneuver or other division elements are re-supplied from their medical company. Maneuver battalion medical platoons/battalion aid stations (BASs) will receive standard push-packages every 12-24 hours. Contents of push-packages can be adjusted as the battle changes. Line item requisitioning will be by exception only during this time. While resupply by preconfigured packages is intended to provide support during the initial phase, continuation on an exception basis may be dictated by operational needs. Planning for such a contingency must be directly coordinated with the DSS. Other than line item requisitioning from the FSMCs and DSMC, the HSMO of the DSS and the DISCOM MMMB will coordinate all Class VIII requirements for the division with the supporting MEDLOG battalion and/or MEDLOG company as appropriate.

7-103. Divisional medical elements use MEDLOG-D, a software application of the MC4 system, to requisition Class VIII. Users of this system in the division include maneuver battalion medical

platoons, FSMCs, the DSMC, and the DISCOM MMMB. The MEDLOG-D system is the primary source for Class VIII line item requisitions from the FSMCs and DSMC. Forward support medical companies and the DSMC request Class VIII resupply from the supporting MEDLOG company.

Routine Requisitions

7-104. Maneuver battalion medical platoons submit routine request for Class VIII resupply, using MEDLOG-D, to their supporting FSMC via a digital request. An information copy of all requisitions within the brigade will be forwarded by the FSMC to the DISCOM MMMB and the brigade surgeon's section (BSS). Routine requisitions submitted by FSMCs, division or corps medical elements operating in the BSAs are forwarded directly to the supporting MEDLOG company. An information copy goes to the DISCOM MMMB. The MMMB coordinates shortfalls in throughput distribution with the DSS and divisions support operations branch. The MMMB may update priorities with the MEDLOG company to correct deficiencies in the delivery system. If the requested items are available for issue, a materiel release order is printed and the requested supplies are prepared for shipment. For items not available for issue, the requests are passed to the MEDLOG battalion's logistics support company. Using TAMMIS, the MEDLOG company forwards information to the unit on items shipped and on those requests which were not filled. An information copy is forwarded to the MMMB.

Immediate Requisitions

7-105. Immediate requisitions from maneuver battalion medical platoons are submitted to the supporting FSMC. When the supporting FSMC is unable to fill the request, the requisition is forwarded to the DISCOM MMMB. The DISCOM MMMB will expedite handling of this request to ensure tracking of critical Class VIII items and timely delivery. Cross-leveling in the division may be accomplished if it is the most expedient method of obtaining and shipping required items to the requesting unit/element. If the DISCOM MMMB is unable to locate requested item(s) in the division, the request is forwarded to the supporting MEDLOG company. Immediate requisitions from FSMCs are sent through the DISCOM MMMB for management and to ensure visibility of the requisitions. The DISCOM MMMB maintains a record of the requisition until it is filled. All immediate requests received by the MEDLOG company are processed for shipment by the most expedient transportation available. The MEDLOG company forwards all immediate requests not filled, to the MEDLOG battalion's logistics support company located in the corps rear. The DISCOM MMMB has the responsibility of monitoring all immediate requisitions not filled by the MEDLOG company. The DISCOM MMMB reports all immediate Class VIII requests to the DSS/CHS cell.

Delivery of Class VIII

7-106. Delivery of throughput Class VIII to the requesting medical units in the division is accomplished by logistical packages (LOGPACs) and nonmedical transports. Shipment of these Class VIII LOGPACs from the MEDLOG company is coordinated with the corps support battalion and the corps movement control officer (MCO). The management and in-transit visibility of Class VIII delivery is accomplished through document number and transportation number tracking. The systems that work together to provide this management and coordination are TAMMIS, transportation coordinator's automates information for movement system (TC-AIMS), MTS, and global traffic network (GTN). These systems are located in the MEDLOG company and the DISCOM MMMB. In some cases, delivery of medical materiel into the division AO may also be achieved through use of the directed Class VIII resupply using medical evacuation resources that are returning to the division medical units. From the FSMCs, delivery of Class VIII to maneuver battalion medical platoons via LOGPAC or nonmedical transports is coordinated by the FSMC with the FSB support operations section. For directed Class VIII resupply, medical transports may be used. Immediate Class VIII resupply will be processed for shipment by the most expedient means available. Based on casualty estimates, medical push-packages may be pre-positioned with maneuver battalion medical platoons or with the FSMC. Figure 7-12 provides an overview of Class VIII requisitions and resupply flow at echelon I. Figure 7-13 provides an overview of Class VIII requisitions and resupply flow at echelon II.
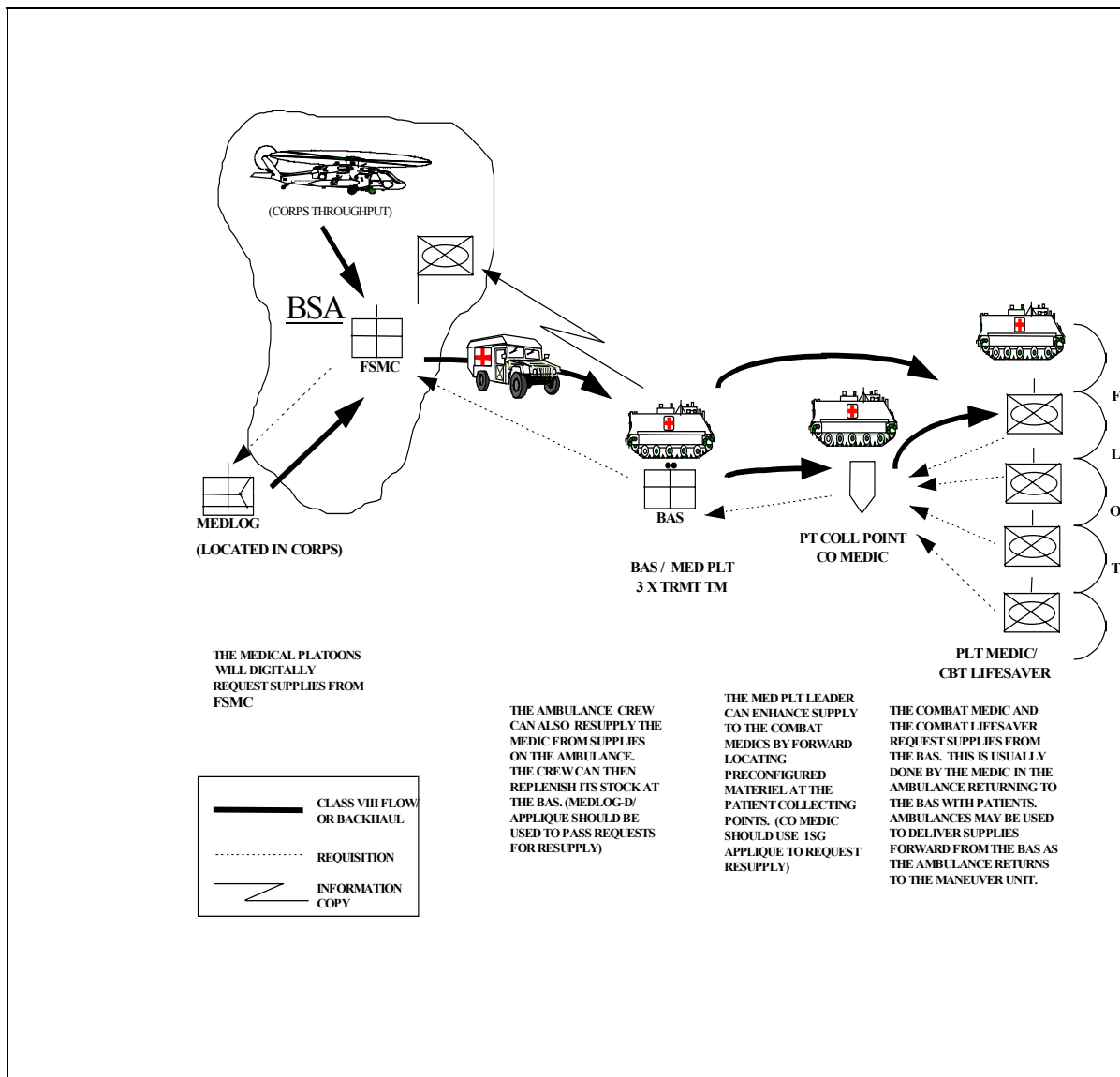
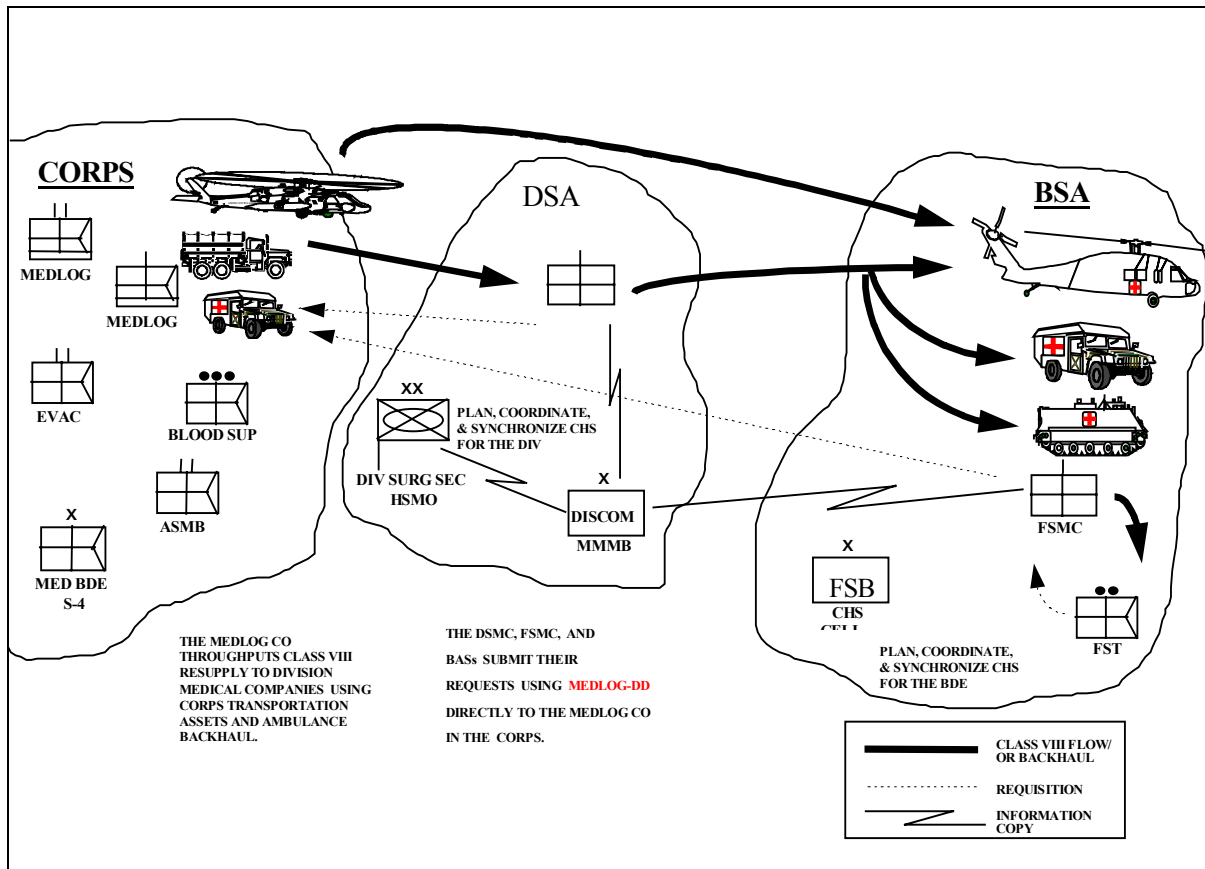**Figure 7-12. Overview of Class VIII resupply at Echelon I**

Figure 7-13. Overview of Class VIII resupply at Echelon II

Assemblage Management Reporting Under USR

7-107. Unit status reporting (USR) of medical equipment sets (MESs) in the division will be created using the MEDLOG-D USR feeder report. This is not a classified report. It calculates percent fill of sets according to AR 220-1 and AR 40-61 and does not create a roll-up of equipment on hand calculations. Minus the potency or dated items while units are not deployed, 70 percent fill of the combined expendable, durable, and non-expendable items within a set constitute an on-hand set for accountability purposes. Medical equipment must be maintained at an acceptable degree of readiness above 70 percent as determined by the division surgeon and unit commander.

7-108. Division medical units/elements will prepare a requisition plan to immediately replenish all potency, dated, and other items that are not being maintained and missing items from sets. Units will coordinate with the supporting MEDLOG company prior to implementation of the plan.

7-109. Transmission of Class VIII requisitions and status reports data will be accomplished by one of a number of ways. The baseline method will always be by disk and hard copy. The

preferred method will be by radio or MSE transmission if signal capabilities allow. At the battalion level, units will attempt to transmit requisition and report data using SINCGARS systems improvement program (SIP) or enhanced position location reporting system (EPLRS) linked to the hyperlink or modem capability of MEDLOG-D. Given the line of site limitations of FM radio, this attempt is best accomplished in synchronization with previously coordinated retransmission. Within the BSA and higher, transmission of data will be by either MSE or amplitude modulation (AM) radio if allowed. Note that if MSE is used, the unit must accomplish prior coordination with the division G-6 to obtain a net encryption system or other encryption hardware system in order to send data.

Medical Equipment Maintenance

7-110. The medical equipment repairer provides operational and unit-level medical equipment maintenance for the FSMC and the DSMC. He exercises his responsibilities by:

- Scheduling and performing PMCS.
- Performing electrical safety inspections and tests.
- Accomplishing calibration, verification, and certification services.
- Performing unscheduled maintenance functions with emphasis upon the replacement of assemblies, modules, and printed circuit boards.
- Operating a medical equipment repair parts program, to include Class VIII as well as other commodity class parts.
- Maintaining a technical library of operator and maintenance TMs and/or associated manufacturers' manuals (printed and/or digital).
- Conducting inspections for new or transferred equipment.
- Maintaining documentation of maintenance functions according to the provisions of Technical Bulletin (TB) 38-750-2 or DA standard automated system.
- Collecting and reporting data for readiness reportable medical equipment in accordance with AR 700-138.
- Requesting through the DISCOM, MMMB for maintenance support services, repairable exchange, or replacement from the medical standby equipment program (MEDSTEP), see AR 40-61.

7-111. Mandatory parts lists (MPLs) and prescribed load lists (PLLs) need to be monitored routinely. An MPL to support medical equipment is published annually in the SB 8-75 series. Most medical equipment repair parts can be requisitioned through the Class VIII system; however, some repair parts are needed to repair medical equipment that fall in the category of Class IX repair parts

(that is, common fasteners, electrical components, and others). Requisitions for Class IX repair parts are sent through the organization's supporting motor pool and require stringent monitoring and follow-up efforts. Special considerations for medical repair parts are explained in AR 40-61.

Division Blood Management

7-112. Blood requirements for the division are determined by the division surgeon. Only packed liquid red blood cells are expected to be available to the division. Blood products are shipped to Army MTFs in the division by the blood support detachment of the MEDLOG battalion. The DSS (HSMO) coordinates with the blood support detachment for division blood requirements. Shipment of blood from the corps to the division is coordinated by the blood support detachment with the CMCC. It is then transported to the requesting MTF by dedicated medical vehicles (air and ground). The blood support detachment notifies the DISCOM MMMB when blood is shipped. Immediate resupply can be accomplished by air ambulances from the medical battalion, evacuation or by medical personnel on nonstandard medical transports.

7-113. Blood support is a combination of four systems (medical, technical, operational, and logistical). Blood support must be considered separate from laboratory support. In the long term, theater blood management is based on resupply from the CONUS donor bases (armed services whole blood processing laboratories [ASWBPLs]). At the corps level, storage and transportation refrigerators allow the blood support detachment to provide blood as far forward as the FSMCs of the division. See FMs 8-10, 8-10-9, 8-55, and TM 8-227-12 for definitive information on blood management. Also see Technical Manual 8-227-12, Armed Services Blood Program Joint Blood Program Handbook, January 1998.

Medical Support To The DASB

7-114. The DASB has no organic medical support. The DSB DSMC supports those DASB and other units in the division rear with a treatment team. Units operating in the forward areas may be supported by FSB, FSMC on an area basis. The division cavalry squadron and the division artillery units have organic level 1 medical personnel. For detailed information on the FSMCs see FM 63-20-1 (FSB), and FM 63-23-1 (DSB).

CLASS IX

7-115. Class IX and PLL/combat spares for the CO/TM are received, stored, and issued by the Class IX element of the MCS, FSC. An operator identifies a fault and requests assistance from the CRT via FBCB2. The CRT will diagnose the fault and identify the required Class IX supplies. The DSU supporting the brigade troops is the brigade support company. The ASL/combat spares

for the brigade are maintained by the Class IX section in the HDC. The PLL for the HDC of the FSB, FSMC of the FSB, HHC brigade, engineer battalion, and the brigade cavalry troop may be managed by the MCS of the brigade support company. The Class IX supply section of the QM company, DSB, provides direct support to division troops. This section receives, stores, and issues Class IX (ground and missile) supplies. The section also maintains the division troop's ASL, and operates the reparable exchange service. The Class IX supply section of the HSC, DASB provides direct support to AB units and the division cavalry squadron. The section also maintains the aviation brigade/division cavalry's ground ASL, and operates the reparable exchange for ground equipment.

Class IX Requests

7-116. An operator identifies a fault, annotates the fault and notifies the CRT. The CRT will diagnose the fault, identify the repair part required, forward the request to the maintenance control section (MCS)of the FSC, the MCS will either issue the part if it is on hand or it will pass the requisition on to the Class IX section supply platoon of the HDC via ULLS-G or SAMS, and if the part is on hand in the Class IX section of the HDC it is released. If the requested repair part is not on hand, the Class IX section will process the requests via SARSS-1 and forwards to the DMMC SARSS-2AD. The FSB's HDC maintains the brigade's ASL. The MCS in the BSC and the FSCs maintain the brigade's combat spares. The supply platoon, HDC will process the ULLS-G and SAMS class IX requisitions via SARSS-1 for brigade troops and the MCSs. The QM company of the DSB will process the ULLS-G and SAMS class IX requisitions via SARSS-1 for division troops. The HSC of the DASB will process the ULLS-G request data via SARSS-1 for the aviation brigade and division cavalry squadron. Figure 7-14 shows the requisition flow of Class IX within the division.
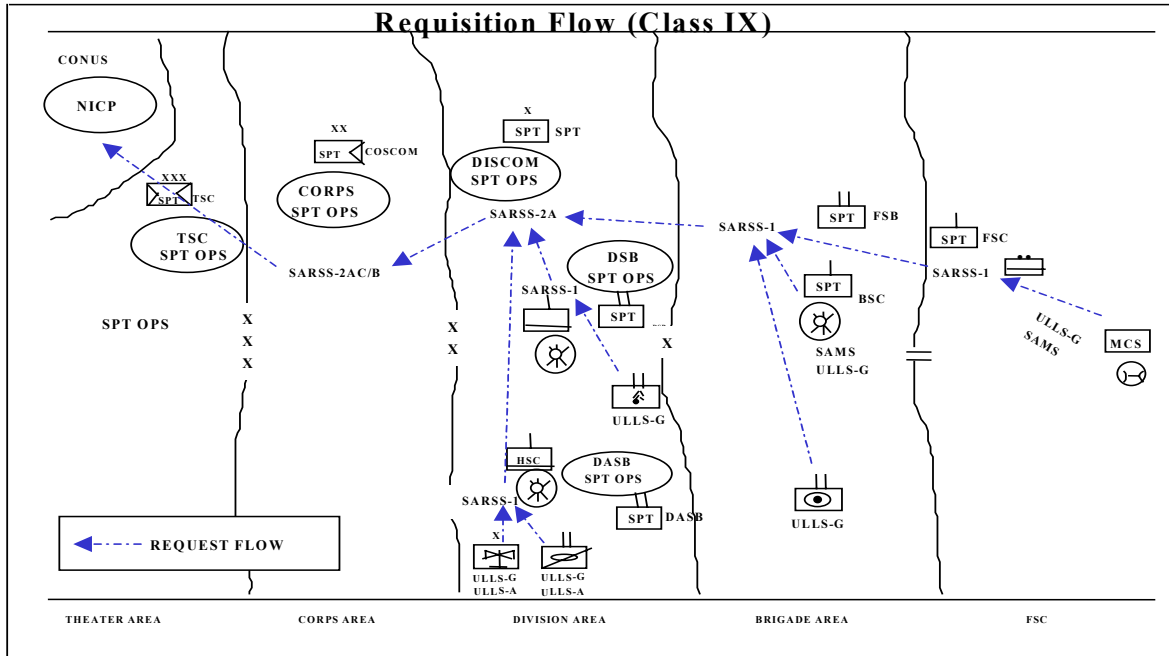
Figure 7-14. Requisition Flow for Class IX

Class IX Resupply

7-117.   Upon receipt of a requisition, the DISCOM/COSCOM SARSS-2A will conduct a subordinate search of all SSAs to locate the requested repair part. Once SARSS-2A identifies the location of the repair part, a MRO is processed to the lowest level SSA. The COSCOM's CSG units will throughput Class IX supplies to the QM company of the DSB, the HSC of the DASB, the S&T platoon of the HDC, and when possible the supply section of the FSC. The QM company and S&T platoon will conduct supply point distribution for division and brigade troops. The HSC of the DASB will conduct supply point distribution for AB and the division cavalry squadron. The S&T platoon of the HDC provides unit distribution to the FSC in support of the maneuver companies. COSCOM units will transport Class IX (A) supplies to the supply platoon of the AMC in the DASB. Class IX supply operations is shown in Figure 7-10.

FIELD SERVICES

7-118.   Field services, such as showers, laundry and textile renovation, are provided by the corps field services companies. The unit makes requests for field services to the DSB, DASB, and FSB support operations section.   The requesting support operations section will make the appropriate coordination with DISCOM.

7-119. Field service support requires close coordination with those within and outside the division. The division support operations, DSB support operations, FSB support operations, DASB support operations, and commanders of the S&S and field services companies of the corps are all involved in providing field services to the division.

MORTUARY AFFAIRS

7-120. All commanders are responsible for unit level search, recovery, and evacuation of remains to a MACP. A well-organized mortuary affairs program in the division helps to ensure the following:

- Prompt and effective recovery of all remains from the division area of responsibility.
- Prompt and accurate identification of the remains.
- Prompt recovery, inventory, and security of personal effects found on remains.
- Evacuation of remains, with their personal effects secured to them out of the division area to the corps MACP.
- Prompt, accurate, and complete administrative recording and reporting.
- Prompt and adequate care for deceased allied and threat personnel IAW current united nation (UN) agreements.
- Reverent handling of remains and adequate ceremonies and services for deceased.
- Emergency burials, when required.

7-121. Upon deployment and transition to the concurrent return program, a forward collection platoon will be detached from the corps mortuary affairs company and deployed forward sending a forward collection section to each of the three maneuver brigades and one to the DSA. The division commander has the flexibility, and based on METT-TC, may deploy the sections as the mission dictates. The MA collection sections each consists of one 92M30, one 92M20, and five 92M10. Unit MA responsibilities are detailed in Joint Pubublication 4-06, Joint Tactics, Techniques, and Procedures for Mortuary Affairs in Joint Operations.

7-122. This augmentation team receives and identifies remains and arranges for evacuation to a MACP. Deceased personnel are then evacuated from the division area to a MACP, temporary cemetery, or a mortuary in the corps area.

7-123. The division collection, identification, and evacuation section of the MA team operates the division collection point. The MA collection point is located a short distance from a MSR and near the medical supporting facilities. It is isolated from other support activities in the support area. It is the unit commander's responsibility to search, recover, and tentatively identify and to

evacuate the deceased personnel of the unit to the nearest MA support collection point. Digital FBCB2, or per the TSOP, will be used to transmit the initial findings of the unit search and recovery teams to the MA team. In IAW AR 600-1, JTTP 4-06, and AR 637-30, the unit is responsible for evacuating all deceased personnel from the company AO.

7-124. The MA teams in the brigade areas establish tentative identification procedures. They also initiate the required reports and records that will accompany deceased personnel. Evacuation request of remains from the unit will be transmitted through FBCB2, or per the TSOP, to the supporting support operations section. Support operations will coordinate for transportation. The DSB support operations will make the proper coordination for the evacuation of division troops remains. The DASB support operations will make the proper coordination for the evacuation of aviation brigade and division cavalry troop remains. All personal effects found on the remains will remain with the deceased when evacuated to the division collection point.

7-125. Emergency burials in the division area are resorted too only in extreme emergencies and when authorized by the theater commander. These burials are fully documented and promptly reported through MA channels.

7-126. Due to the possibility of heavy fatalities in a NBC attack, the use of regular MA burial methods may be impossible. In such cases, mass burials may be required to reduce the time between the recovery and the burial of the remains. Permission for mass burials comes from the joint mortuary office in the theater, with the approval from the theater commander.

7-127. Normally the MA officer of the organization requiring mass burials gets permission directly from the theater MA officer. If there are no MA units in the area, and contact with higher headquarters is lost, the senior officer in the area makes the decision to bury. These mass burials are to be performed IAW FM 10-64, Chapter 6. In an NBC situation, specific MA task groups may be formed. When provided with sufficient support, these groups have the means to either evacuate or perform mass burials of the deceased personnel. Joint Tactics, Techniques, and Procedures for Mortuary Affairs in Joint Operations, (JTTP 4-06) contains other related MA procedural guidance.

7-128. Temporary interment of remains in OCONUS is permitted as a last resort. Every effort should be made to return remains to CONUS as soon as possible. The geographic combatant commander may authorize temporary interments only when operational constraints prevent the evacuation of remains out of the AOR. The expedient and respectful evacuation of deceased personnel is a top priority. However, during extreme situations when the tactical and logistical situation leave no alternatives, a program of temporary interment may be implemented. Temporary

interments are a last resort used for health, safety, sanitation, and morale reasons at unit levels and are conducted IAW Joint Pub 4-06 and FM 10-64. These burials are fully documented and promptly reported through MA channels.

7-129. In extreme circumstances, when a unit is cut off and has no means to communicate with higher headquarters, the senior commander is responsible for deciding whether temporary interment will be utilized after all known support options have failed.

MANNING THE FORCE

7-130. Manning is the process of recording, reporting, verifying and processing personnel strength and casualty information at the unit level.

7-131. Proper and effective manning is essential to the operational success of any military mission. Manning the force involves the uninterrupted flow of soldiers from mobilization and deployment through redeployment and demobilization. The manning process includes the tasks of predicting personnel requirements, resourcing units with personnel assets in accordance with the commander's guidance, monitoring the personnel strength posture, assessing unit combat power, and adjusting personnel resources to provide the optimum combination of manpower and equipment to maximize combat power. Manning the force impacts force ratio evaluations and all logistical requirements. To optimize and sustain the commander's lethality, survivability, and high OPTEMPO requirements, the personnel operator must place the right soldier, at the right place and time with the right capabilities. This process combines anticipation, movement and skillful positioning of personnel assets. The Force XXI commander must integrate manning information with other combat power factors in a near real-time to execute combat operations successfully.

7-132. The S1 is the battle staff officer for the commander on all matters concerning human resources. Manning the force encompasses the tasks that current doctrine associates with personnel readiness management, replacement management, and casualty management. In information age operations the commander must also have digitized manning information integrated with other decision support data in order to execute combat operations successfully. Enabling Force XXI technologies include the tactical personnel system (TPS), personnel module of CSSCS, and FBCB2/PERSITREP. The lethality and digitization capabilities associated with the DISCOM and the 21st century battlefield require that manning be divided into discrete tasks. These tasks are iterative and do not follow a prescribed order or sequence. PSS organizations are provided the minimum assets necessary to conduct the tasks required at their echelon.

7-133. **Predicting** is the process of anticipating the number, grade, and skill of personnel resources required to sustain the battlefield

operating system (BOS) of the DISCOM, as they execute the operational patterns that destroy the enemy's will to fight. The S1 must complete a loss estimate based on threat and friendly force capabilities. This estimate provides planning parameters for replacements, medical facility/support requirements and MA assets. In the DISCOM, the personnel operator will use the digitized capabilities within CSSCS to anticipate casualties..

7-134. **Resourcing** is the process of bringing units to their required strength according to the commander's priorities. Although it occurs at every echelon of command, resourcing is the primary focus of the national provider. The department of the army deputy chief of staff for personnel (DA DCSPER) executes the task at the national level in order to structure, acquire, train, distribute, and separate the force. Individual replacements move from the central receiving center (CRC) under the direction of the DCSPER and CONUS major commands (MACOMs) to resource the force projection theater. At all levels, personnel operators provide commanders combat power visibility by properly identifying the status of available personnel resources. The S1 then recommends the allocation of available resources to meet current and future requirements. The DISCOM cannot resource itself and must be provided assets from division to accomplish this task.

7-135. The FXXI division and its units will be multi-compo units. Multi-compo units have both active (AC) (compo 1), and reserve (RC) (compo 2) [Army National Guard] and/or [United States Army Reserve] (compo 3) personnel and/or units as part of its MTOE. This is accomplished in one or more of the following manners:

- AC and RC soldiers assigned by paragraph and line number to the same unit.
- Units of one component missioned to support higher headquarters units of another component.

7-136. The three types of reservists assigned to the FXXI unit are:

- Members of troop program unit (TPU), traditional drilling reservist.
- Reserve associate support program (RASP), USAR soldiers recruited for a specific TPU, brought on active duty for two years, sent to initial and advanced individual training, attached to division for remainder of their two year active duty tour, than return to their USAR unit in TPU status.
- Active guard and reserve (AGR), USAR or ARNG soldiers on extended active duty.

7-137. **Monitoring** is the process of gathering unit strength data on a real time basis through digitized systems and communications. With digitization, we will eliminate the requirement for unique personnel reporting systems by having the capability to absorb personnel information from tactical communications. The task of digitized strength monitoring begins with establishing the strength

baseline. S1s, under the direction of the division G1, manifest all deploying personnel using MARC or (RAPIDS). Inbound or prepositioned asset information is available through information systems of the manning the force automation architecture. It is transmitted to personnel operators performing manning tasks at the strategic and/or operational level and provided to the division. The deployed database and personnel asset visibility establishes the strength baseline. The DISCOM S1 maintains unit status by getting updates through ABCS.

7-138. **Assessing** is the process of comparing current and projected unit strength data to personnel capabilities required, maintaining OPTEMPO and achieving operational success. It starts by determining the personnel required, maintaining BOS combat power IAW the commander's priorities and intent. The S1 matches current assets with projected losses and replacements and recommends the method to properly resource units.

7-139. **Adjusting** is the process of packaging, positioning and dispatching replacements to deliver them when and where needed. The G1 notifies the DMC of movement requirements as commanders direct the proper adjustment of personnel assets to accomplish pending missions. Personnel operators at division and EAD, in coordination with logisticians, match personnel and equipment during the adjustment process by providing unit, squad, crew, team, or individual replacements according to the commander's operational requirements and the needs of the BOS. Movement time and distance factors influence the positioning of personnel replacement units, which hold and process replacements until they are dispatched to the gaining unit. The division G1 does not have the resources to accomplish the adjustment task and may direct the dispatch of replacements directly from EAD to the gaining unit. In this case he synchronizes the adjustment task by sending teams from his operations cell to the EAD PSS unit where replacements are positioned as well as to the gaining units. If the commander desires to provide replacements indirectly to the gaining unit by holding them at the division level, the personnel group or personnel command must attach a replacement unit to the division. The G1 then uses his operations cell to directly manage the packaging, positioning, and dispatching of replacements.

7-140. When soldiers deploy to an area of operations, the battalion S1 manifests soldiers using smart card technology and tactical personnel system (TPS) to create the deployed database. Once the S1 establishes that baseline, unit leadership (FBCB2 platform level) report changes to the baseline through FBCB2s PERSITREP. As the S1 updates the duty status changes in the personnel module of CSSCS, all subsequent reports and queries reflect the changes. This reduces the need for the 1SG to send up reoccurring personnel status reports.

7-141. Upon receipt of a mission, the S1 completes a loss estimate based on the various courses of action proposed to the S3. When

the commander selects a course of action, the S1 completes a loss estimate using the appropriate casualty estimator, which resides on the personnel module of CSSCS. This prediction allows the S1 to requisition replacements to preposition on the battlefield as operations commence. The S1 can reinforce the main effort units using the prepositioned replacements.

7-142. Personnel service support is the management and execution of personnel services, chaplain activities, command information services, and legal service support. In the DISCOM, the S1 is responsible for coordinating and managing PSS. At the commander's discretion, the S1 may be delegated responsibility to serve as the organization public affairs officer. The S1 develops the administration SOP for the battalion. The S1 with the S4, prepares the administration and logistics portion of the battalion tactical SOP. S1 participates in the OPORD process and develops administrative annex materials. S1 ensures personnel service support is fully coordinated with other staff elements. S1 pays particular attention to the areas where close coordination is vital to the S1 section mission. These areas include MA, transportation, and health service support.

7-143. The S1 manages personnel services in the DISCOM. Personnel services, that include family and community support may also be provided by the installation directorate of personnel and community support at the division home station. Personnel services on the force projection battlefield provide postal operations; personnel information (records) management; morale, welfare, and recreation; and essential services including identification, awards, evaluations, promotions, transfers, discharges, reenlistment, leaves, line-of-duty investigations, and band operations. Other personnel services include voting and safety.

Chapter 8

Defense Of The ASA

OVERVIEW AND PURPOSE

8-1. Combat Service Support organizations are normally the units least capable of self-defense against a combat force. They are also often the targets of enemy action. Time and effort used to defend themselves degrade their ability to perform their primary support mission. Key support elements from the DASB are designated to evacuate the ASA to allow minimum support to the maneuver brigade should the enemy confront the ASA. The DASB should develop a displacement plan. However, all units must be able to defend against Level I activities (sniper, agents, saboteurs, or terrorist activities). They should be able to impede Level II attacks until assistance arrives. The DASB units must defend themselves against attempts to disrupt their operations. They must be able to minimize destruction and to reinforce their units. The DASB units must also be able to gain time until response forces arrive. Each unit must form a base defense perimeter to defend against the threat. If enemy forces exceed base and base cluster defense capabilities, response forces are used. These 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 committed to neutralize the threat. Assistance may come from an MP unit as a response force or a tactical combat force (TCF) located in the rear. No CSS unit can sustain a defense against a determined Level II or III attack, but it should plan and train to protect itself until a TCF arrives to repel the enemy attack. The DASB must be able to synchronize self-defense with ASA assets, MPs, and the TCF when it arrives.

8-2. Responsiveness is a key to defeating enemy incursions in the rear area. Responsiveness requires the immediate reaction and rapid deployment of sufficient combat power and area damage control resources. These two forces destroy the enemy and ensure minimal damage to the area. Responsiveness is achieved through:

- Effective command relationships and supervision.
- Reliable communications.
- Accurate intelligence.
- Centralized planning and decentralized execution.
- Organic mobility and fire power of response force.
- Training and rehearsals.
- Prior assessment of the capabilities of bases and facilities to withstand enemy attack. This assessment is based on a unit's

degree of exposure and that unit's importance to the division's ability to sustain operations. This mission-essential vulnerability analysis assists the DASB commander. With this analysis, the commander is able to allocate resources to protect personnel, supplies, and facilities in consonance with their importance to the mission.

8-3. The brigade commander is responsible for plans and operations throughout the brigade area of operations. He assigns tasks to subordinate and supporting commanders to accomplish all brigade missions. The brigade S3 includes detailed planning for the entire brigade area as part of operational planning for offensive and defensive missions.

8-4. When the brigade commander plans for the defense of the rear area, he needs to have complete knowledge of what elements are in his sector of responsibility. What assets does each unit have that will allow it to defend itself and identify what elements can defend against a large enemy threat? Most CS and CSS units in the brigade rear area are located in the ASA. Many small elements form bases, with the entire group of bases making up an aviation support area (ASA), which in itself is a base cluster. The ASA or base cluster is under the C2 of the DASB commander. The DASB commander is responsible for the defense of the ASA.

8-5. The AB commander's goal is to retain overall freedom of action for fighting close and deep operations. This means the MSRs are clear, unobstructed, and secure; units can move quickly and in an orderly fashion throughout the brigade area; logistical resupply and reconstitution are sustained; and all CS and CSS units are secure. To accomplish this, there must first be an understanding of the different levels of threat.

8-6. The planning considerations for rear operations include:

- Secure and protect the ASA, facilities, and mission essential assets.
- Preventing or minimizing enemy interference with C4ISR.
- Preventing or minimizing disruption of CS and CSS to forward units.
- Providing unimpeded movement of friendly units throughout the rear area. This will involve control of dislocated civilians, which is coordinated with the division G5 through the DISCOM headquarters and executed by military police elements and reaction forces on the ground.
- Finding, fixing, and destroying enemy incursions in the rear area.
- Providing area damage control after an attack.
- Identifying combat units, ground, and aviation (if available) that will have the on-order mission to defeat the enemy in the rear area and has C2 responsibilities.

- In addition, the DASB battle staff must coordinate with the brigade S3 and ensure the ASA security plan for the rear area is integrated into the overall brigade plan.

PLANNING AND EXECUTING DEFENSE OF THE ASA (BASE CLUSTER)

COMMAND, CONTROL, COMMUNICATION, COMPUTERS, INTELLIGENCE SURVEILLANCE, RECONNAISSANCE (C4ISR)

8-7. The DASB commander is responsible for ASA security. As such he has control of all elements in the ASA for defense and positioning. Normally, the ASA is a base cluster with the DASB commander as the base cluster commander. The major elements in the ASA (BSC, FSMC, artillery field trains etc…) become unit bases. The senior individual in each base is the base commander. The DASB SOP will cover as many defense procedures as possible. Each base will be given specific responsibilities in the OPORD. Guidance for these responsibilities is given in this chapter.

8-8. In addition, all ground units entering the brigade area must report to the brigade administrative and logistics center (ALOC) and the DASB TOC to coordinate routes, terrain, communications, and CSS. The brigade ALOC, where the brigade S1 and brigade S4 are located, will contact the main command post to confirm the operational aspects of the coordination.

8-9. The DASB TOC S2/S3 section is the base cluster operations center. The DASB TOC is collocated with the brigade ALOC within the ASA defensive perimeter. The combination of the brigade ALOC and the DASB TOC collocated constitutes the base cluster operations center (BCOC). Alternate BCOCs should also be designated. Possibilities include the HSC CP, the GMC in the ASA, or the AMC CP. In urban terrain, the DASB S2/S3 may have to establish subordinate base clusters and BCOCs within the ASA. One of these may be designated the alternate BCOC.

8-10. Per unit SOP Each base sends a representative to the BCOC battle staff meetings or shift change briefings. In addition, the BCOC will issue a situation report on a regular basis, twice daily if possible. The report will provide intelligence updates, reporting requirements, and impending ASA movement orders.

BASE CLUSTER OPERATION CENTER (BCOC)

8-11. The DASB commander is responsible for integrating base defense plans into a base cluster defense plan. As discussed, this requires development of a rear operations communications system and coordination with field artillery, engineer, ADA, and MP units. As part of the terrain management function, the DASB S2/S3 assigns a defensive position and a sector to each base in the ASA. Bases on likely avenues of enemy approach are given a smaller sector. The S2/S3 ensures each base's sector of fire overlaps the adjacent base's sector. He does this by personally coordinating

with base commanders, and confirming that tenant units are tied in at their respective boundaries. Infiltration routes for Level I threats, and main avenues of approach are covered by planning for fires, obstacles, patrols, OPs, or sensors. The DASB S2/S3 must carefully coordinate this planning with each base to avoid having troops engage friendly forces.

8-12. The ASA defense plan must be integrated into the plan for the entire brigade rear. This requires the BCOC to coordinate with the brigade S3 for the overall plan. It must also coordinate directly with other BCOCs in the brigade rear to plan mutually supporting fires and to prevent firing upon each other.

8-13. The S2/S3 keeps a sketch of the defensive plan. It shows base sectors of fire, locations of mines and obstacles, planned indirect fire coverage, OPs, patrol routes, and positions of automatic and anti-armor weapons. These weapons will include those in the ASA for repair. If the firing system is operable, these weapons should be included in the ASA defensive scheme, and mechanics should work on them in their fighting positions. Whenever possible, units should occupy the same location within the ASA relative to the other units every time the ASA moves. They should build a habitual relationship with the units on all sides of them. This will expedite coordination of sectors of fire. Since night vision devices are likely to be scarce, illumination plans must also be included in the overall ASA security plan.

8-14. In addition, the BCOC must plan for a quick reaction force (QRF) from assets in the DASB. This QRF will be called upon when a base's defenses cannot defeat the threat and MPs and combat forces from the brigade are not immediately available. As a minimum, the reaction force should include personnel equipped with machine guns, grenade launchers, rifles, FM radios, and vehicles under the control of a qualified and designated leader 24 hours a day. The DASB S2/S3 must carefully equip the reaction force. Removal of scarce assets such as machine guns from the defensive perimeter when the reaction force is assembled must be considered and integrated into the defense plan. During periods of increased readiness, the reaction force should be assembled for immediate response. It must be well-rehearsed and able to react precisely and immediately. Rally points, battle positions, and detailed procedures must be planned and practiced in advance. See the section on QRF in this chapter under MANEUVER.

8-15. The BCOC must ensure that all base commanders understand the different threat levels and the associated actions. The brigade staff must also be aware that the DASB is neither staffed nor equipped to continue support operations at normal levels while responding to increased levels of threat. Support will be degraded. How much it is degraded will depend on the level of the threat.

8-16. Initially, the DASB commander and battle staff may not know the size of the attacking enemy force. Identifying the level of threat is critical in determining the appropriate level of response. Level I threats are those which can be defeated by base or base cluster self-defense measures. They normally involve the activities of snipers, agents, saboteurs, and terrorists. Typical actions the BCOC will require in such situations include manning OPs fully, increasing guards and spot-checking vehicles, tightening base security, alerting defensive perimeter personnel, and increasing protection of key facilities. The degradation of support will depend on the actions directed by the individual BCOC in specific conditions. However, as a general planning guide, the DASB can estimate that the 75 percent of available assets will be engaged in support operations, while 25 percent defend.

8-17. 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.

8-18. The BCOC would likely require strictly controlled access to all areas, reinforced perimeter defense, OPs prepared to withdraw, and the reaction force alerted.

8-19. 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.
- Observation posts will be withdrawn, QRF forces committed, the brigade S3 notified, and support operations ceased. Artillery or air strikes normally precede such a threat.

8-20. The BCOC determines the level of threat and issues prearranged alerts to all bases. The BCOC also determines the probability of an air attack and issues air defense warnings.

8-21. The BCOC should also have planned in advance emergency displacement procedures. If the DASB is under imminent danger from a level II or III threat, the BCOC will call for an emergency move of key ASA assets. Key elements should be identified in

advance and prepared to displacement to a predesignated site with minimum notice. The commander designates key DASB elements as required. These will likely include C2, ATP, Class III, emergency medical treatment, and maintenance elements. Emergency destruction of equipment and supplies (excluding class VIII) is performed to avoid enemy capture. Priority items for destruction will probably include COMSEC items, fuel, ammunition, vehicles, communications equipment, and weapons.

8-22. Other duties of the BCOC are to identify primary and secondary entry points into the ASA and designating preplanned landing zones for brigade reaction forces to use when required. The BCOC should conduct regular meetings or shift change briefings with base representatives to update the defensive plan. Below in Figure 8-1 an example of a execution matrix to assist the BCOC. To use this matrix the BCOC synchronizes the ASA actions to execute in each category with the advance of the enemy forces. For every action of the enemy we have a reaction. It is like the play book for the defense of the ASA. This matrix can be included with the support synch matrix.

WHEN ENEMY REACHES PHASE LINE	C2	ARTY	ADA	MOB/ CO-MOB/ SURVIV	QRF	MP	TCF	CONVOYS	BASES
ALPHA									
BRAVO									
CHARLIE									
DELTA									
ECHO									
FOXTROT									
GOLF									
HOTEL									
INDIA									
JULIETT									
KILO									
LIMA									
MIKE									
NOVEMBER									

Figure 8-1. ASA Base Execution Matrix

COMMUNICATIONS

8-23. Communications for ASA security will be conducted by digital exchange, wire, radio, signals, and personal contact based on METT-TC. The primary means will be wire, when time and other resources are available. Each base will be required to establish a linkup to the BCOC. The BCOC will operate 24 hours a day. Other

elements located in the ASA are responsible for linking from their CPs to the BCOC. The ADA and field artillery units in the ASA will have direct communications with the BCOC to provide early warning of enemy aircraft and to facilitate calls for fire.

8-24. Ideally, the DASB would also operate a separate rear operations radio net. If wire, BCOC FM net, and digital communications are lost, units will monitor the DASB command net that will serve as the BCOC radio net. If communications by these means are lost, the tenant activities are responsible for sending a messenger to the BCOC to provide coordination.

8-25. In addition, units in the ASA cannot rely on wire digital, and FM communications to relay alert status. Too much time would pass before every soldier received the message. The DASB should establish readily recognizable signals that are easy to initiate. For example, the warning for an NBC attack could be a pyrotechnic signal, voice or siren that could be relayed quickly with voice, hand and arm, or horn signals. Similar signals should be specified in the SOP for air and ground attacks or to change frequencies. Detailed information and instructions would follow by radio, wire, or messenger. The all-clear signal would only be passed via command channels.

MANEUVER

8-26. The only specific asset the DASB commander may have that is trained for and has the primary mission of rear area operations, is the military police platoon. For details in planning for MP operations see FM 3-19.4 (19-4). With their ability to shoot, move, and communicate, MPs on the battlefield provide the commander both technical and tactical advantages. Commanders can rely on MPs to help keep enemy activity in the rear area from delaying his reinforcing units and disrupting C2.

8-27. MP elements are task-organized to accomplish their missions. Size and composition of a tasked element depend on mission needs and the tactical situation. MP teams have the experience, initiative, and ability to operate independently or as part of a larger unit.

8-28. Three-man teams are the building blocks of MP units. Each MP team has a vehicle, a crew-served weapon (a M60 machine gun, M2 .50 cal MG, or a MK-19 grenade machine gun), and a vehicle-mounted radio. The team leader observes and maintains communications. A second MP drives, and the third MP is the gunner and alternate driver. They are all capable of calling for indirect fire support and using light antitank weapons. The team is equipped with night-vision devices, NBC detection equipment, and

secure radio communications. MP teams fight mounted or dismounted to suit the tactical situation.

8-29. In the rear area, MPs are a critical part of the brigade and DASB commander's on-the-ground intelligence-gathering assets. The MP teams are mobile over large geographical areas. As part of their battlefield circulation and control (BCC) mission, MPs routinely travel the battlefield road networks. As part of their area security mission, MPs routinely move off-road for area reconnaissance and other area security operations. They help find the enemy and identify his strengths and weaknesses. The MPs collect and disseminate vital information to help commanders see the battlefield. Information about conditions in the rear area and the presence and nature of the enemy helps a commander know when and where to concentrate combat power. The MP's mobility and communication assets allow them to detect and monitor activity throughout their broad AOs and report their findings quickly. Swiftly changing combat situations make timely and accurate information about the location of units, road conditions, and enemy activity imperative.

8-30. In the rear area, the MPs are a flexible economy-of-force organization that can significantly multiply the commander's combat power. The MPs do this without increasing the commander's total force or diverting his combat resources from more critical operations. Because of their mobility and dispersion in the rear area, MPs are likely to be the first forces on the scene of a threat insertion in the rear area. If this occurs, MPs fight to preserve the security of the area. Military Police encountering enemy forces engage them with individual and crew-served weapons. They destroy enemy elements within their capability. Organized in small tactical elements, their experienced use of initiative, their mobility and firepower, and their communications ability enable the MPs to operate independently as well as fight as part of a larger force. As squads or platoons defending a base or countering small enemy incursions, MPs generate substantial short-term combat power for the tactical commander. Though MP elements are highly mobile and are equipped for and capable of limited combat missions, the commander should carefully consider mission priorities for these valuable assets because of their small size.

8-31. The MP platoon carries out four basic missions in support of the commander and the rear operations mission. These are:

- Battlefield circulation and control. Expediting forward and lateral movement of combat resources to ensure a way is open to move reinforcing troops, fuel, food, and ammunition across the battlefield.
- Area security. Helping the commander to provide security and protection in the rear area.

- Enemy prisoner of war operations. Collecting, evacuating, and interning EPW to relieve the tactical commander of the responsibility.
- Law and order operations. Conducting these when necessary to extend the combat commander's discipline and control.

8-32. Any one of the above missions can easily require the entire MP platoon and more; therefore, it is important that the factors of METT-TC be considered when using the platoon. It is best to keep MPs mobile, acting as the eyes and ears of the commander. During offensive operations, the MPs will most likely be employed in BCC and EPW missions. In the defense, they will be employed in BCC as area security.

Movement

8-33. Maintaining security of the MSRs for swift and safe movement of units and resupplies is critical to combat mission success. To avoid locking too many MPs into this mission, the DASB must use the gun trucks (with M2, MK 19, M60, or M249) and combat vehicles that are returning forward with supplies as security. If that is not possible, a good practice is to use no more than 50 percent of MP assets on BCC unless there is a major movement of forces.

CONVOY DEFENSE TECHNIQUES

8-34. The convoy commander must ensure that his troops are trained in convoy defense techniques. The payoff is reduced vulnerability to hostile action and successful mission accomplishment. The damage a convoy incurs when attacked depends on the adequacy of convoy defense training. It also depends on the adequacy of the briefing that convoy personnel receive before the operation.

8-35. Some elements of convoy defense training are routine. The key is to train to react rapidly to any situation. Successful accomplishment of your mission and your life depend on it. This section covers a broad range of convoy defense techniques to be employed against a variety of threats.

AIR ATTACK

8-36. The air threat varies from UAV, cruise missiles, and armed helicopters to high-performance aircraft. Convoys face the greatest danger of an air attack while moving along open roads or during halts where there is little or no overhead cover.

8-37. An air attack is a type of ambush. Accordingly, many of the procedures used during a ground ambush also apply to the air attack. For example, the convoy commander must:

- Prescribe alarm signals (unit SOP) (see FM 44-3 for more information on alarms).

- Give instructions for actions to take when under attack.
- Prescribe actions to take in the absence of orders.
- Ensure that defense procedures are rehearsed.
- Review the procedures with convoy personnel before the convoy moves out.

8-38. The convoy commander should remember that enemy pilots will seek out and try to surprise the convoy. They will fly at a low, terrain masking altitude. If they attack from higher than 350 meters, small arms fire will have no effect against them, but air defense weapons can be used against them effectively. Enemy pilots will also fly at high speed to make air defense weapons and small arms fire less effective.

8-39. **Active Defense.** The amount of fire a logistical convoy can bring to bear on attacking aircraft is extremely limited. It is limited to the number of vehicles with mounted machine guns and the individual weapons of operators and passengers. Although the convoy is not totally defenseless, it is no match for a skilled pilot in a modern ground attack jet aircraft. The convoy's capability to defend itself is slightly better against the slower and sometimes more vulnerable ground attack helicopter. At best, the convoy without air defense protection is extremely limited in its ability to defend against air attack.

8-40. The key to effective small arms fire against aircraft is volume. Put up a large volume of fire with small caliber weapons. Volume small arms fire comes from knowing the effectiveness of small arms fire on low-flying aircraft. Training ensures accuracy and builds confidence.

8-41. **Firing positions**. Except for the prone position, the riflemen's basic firing stances stay the same (Figure 8-2). Firing at aircraft from the prone position means the firer is lying on his back, aiming his rifle into the air. Maximum use of cover and concealment is essential. A crew served weapons gunner should fire from a protected position if possible. He needs to get the weapon up in the air. He can hold it up or use a support for his arms and the weapon. In a real emergency, another soldier can act as a hasty firing support.

8-42. **Tips for small arms defense**. The following are tips for small arms defense:

- Shoot any attacking aircraft or unauthorized UAV.
- Fire at the nose of an aircraft; fire at the fuselage of a hovering helicopter or slightly above the nose of a moving helicopter.
- Fire in volume and everybody shoots.
- Lead aircraft crossing your position (M16 and M60 lead jets the length of one football field).

- Take cover if time allows.
- Support your weapon if possible.
- Lie on your back if caught in the open.
- Aim mounted machine guns slightly above the aircraft nose for head-on targets.
- Control small arms fire so attacking aircraft flies throughout it.

PASSIVE DEFENSE

8-43. For a logistical convoy, normally without significant air defense firepower, passive measures are most effective. The key is to prevent attacks by hostile aircraft.

8-44. **Dispersion**. The formation used by the convoy is a type of passive defense. The convoy commander must decide whether to use an open or closed column. The distance between vehicles must not be fixed. It should vary from time to time during a march. Factors influencing selection of the best vehicle distance include:

- Mission.
- Cover and concealment along the route.
- Length of the road march.
- Type of road surface.
- Types of vehicles.
- Nature of cargo.
- Enemy threat (ground and air).
- Available defense support.
- Small arms potential.

8-45. **Open column**. Open column convoys generally maintain an 80 to 100 meter distance between vehicles. This formation offers an advantage of fewer vehicles damaged by air-to-ground rockets, cannons, or cluster bomb units. However, open columns make control more difficult for the convoy commander when it is necessary to give orders to stop, continue, disperse and seek concealment, or engage aircraft. The column may be more susceptible to attack. It is exposed for a longer period and, if attacked, its defense is less effective since its small arms fire is less concentrated.
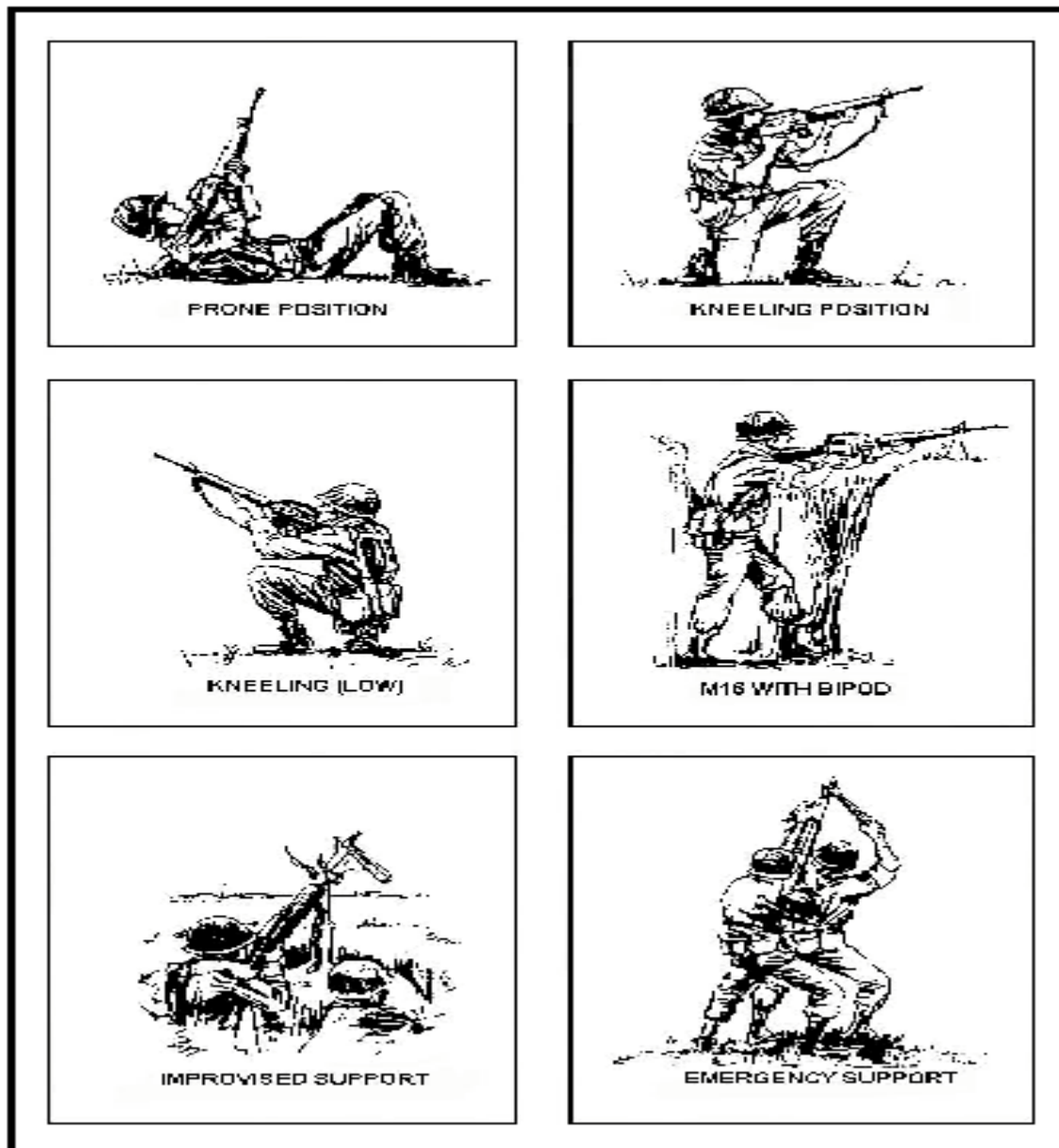
Figure 8-2. Firing positions

8-46. **Close column**. Close columns maintain a distance of less than 80 meters between vehicles. This formation has none of the disadvantages noted for the open column formation. However, presenting a bunched up target could be an overriding disadvantage. Where an air attack is likely, it may be wise for the convoy commander to move close column convoys only at night.

8-47.   **Camouflage and concealment**.   Camouflage and concealment techniques can make it more difficult for the enemy to spot the convoy. Not much can be done to change the shape of a vehicle moving down the road, but the type of cargo can be disguised or concealed by covering it with a tarpaulin. Bulk fuel transporters (tankers) are usually priority targets. Rigging tarps and bows over the cargo compartment conceals the nature of the cargo from the enemy pilot. The following are other effective passive measures:

- The operator should look for a bush, tree, or some other means of concealment to break the shape as seen from the air (Figure 8-3).
- Smooth surfaces and objects, such as windshields, headlights, and mirrors, will reflect light and attract the pilot's attention. Camouflage or cover all shiny items before the convoy moves out.
- If vehicles are not already painted in a pattern to blend with the terrain and to break the outline, mud can be used to achieve this effect.

8-48.   **Air guard duties**.   Assign air guard duties to specific individuals throughout the convoy, and give each specific search areas. If the road march lasts more than an hour, soldiers should take shifts at air guard duty. Scanning for a long period dulls the ability to spot aircraft. Seeing the enemy first tips the odds in favor of the convoy, giving it time to react. See FM 44-3 for search and scan procedures.

8-49.   **Communications security**.   Today's communications equipment can be very useful for controlling convoys, but it can also help enemy pilots find you.   Use the radio only when necessary and be brief. Enhanced situational understanding with new digital systems such as MCS, MTS, and FBCB2 also can be very useful for monitoring and controlling convoys.

Passive Reactions

8-50. When aircraft are spotted or early warning is received, the convoy commander has three options: stop in place, continue to march, or disperse quickly to concealed positions (Figure 8-4).

8-51. If the convoy commander chooses to halt the convoy, the vehicles simply pull to the shoulder of the road in a herringbone pattern. This technique has several advantages:

- It is harder for the enemy pilot to see the convoy when it is halted than when it continues to move.
- It is easy to continue the march after the attack.
- The volume and density of organic weapons will be higher than if the convoy disperses.

- A disadvantage to this option is that a convoy stopped on the open road makes a good target and an enemy attack has a better chance of causing greater damage to the unit.

8-52. The mission and/or terrain may dictate that the march continue. If this is the case, convoy speed should be increased. Continuing the march offers the advantage of presenting a moving target, making it more difficult for the enemy to hit. However, detection is easier and volume and density of small arms fire are reduced.

8-53. A simple technique to disperse vehicles is to establish a method in the SOP that, in the event of an attack, odd-numbered vehicles go to the left and even-numbered vehicles go to the right. The key to dispersion is not to make two straight lines out of what was one long line and the vehicles must be staggered (Figure 8-5). This should not be much of a problem if the drivers have been trained to go to trees, bushes, folds in the ground, and so forth, that will give concealment. Once the convoy is dispersed, all personnel, except for vehicular-mounted weapon gunners, dismount and take up firing positions.

8-54. Advantages of this option are that it is more difficult for the enemy pilot to detect the vehicles and get multiple hits. However, this method has several disadvantages:

- It is easier for the enemy pilot to spot the convoy as it begins to disperse.
- The volume and density of small arms fire are reduced.
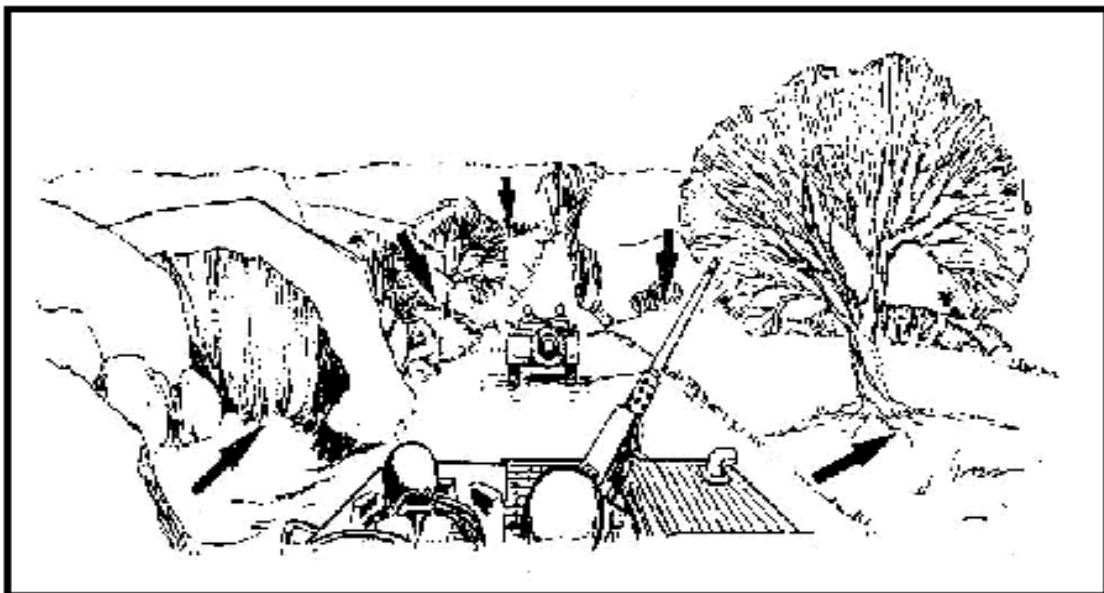- It takes longer to reorganize the convoy after the attack.

Figure 8-3. Dispersing vehicles seek cover for protection against air observation
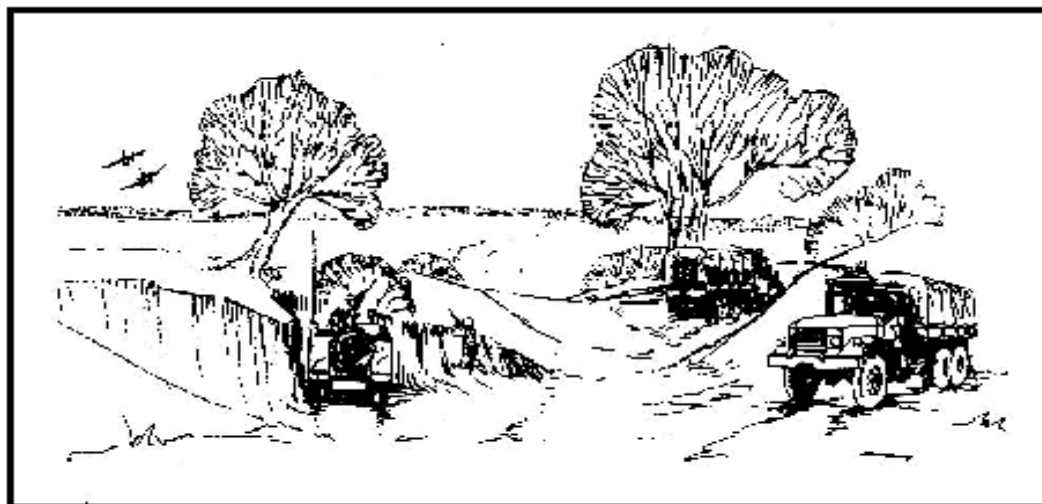
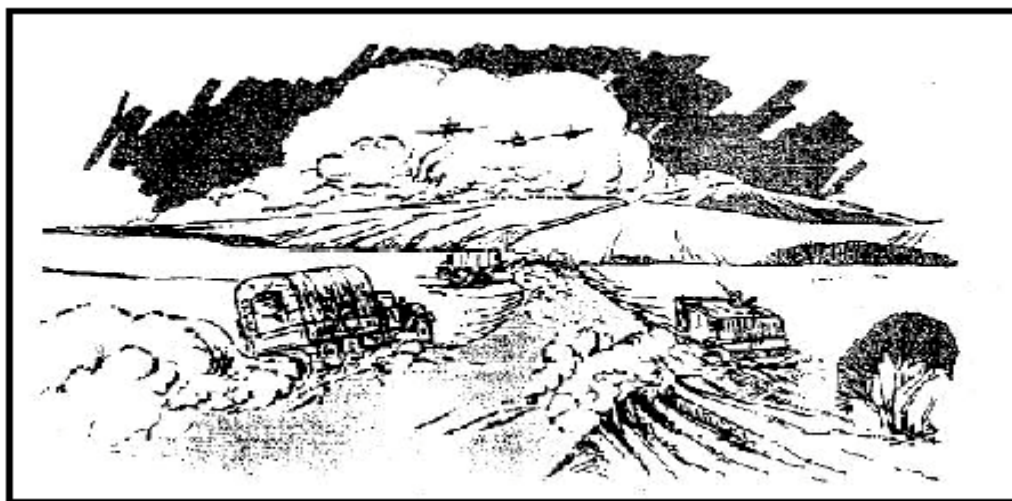**Figure 8-4. Dispersed vehicles in concealed positions**

Figure 8-5. Vehicles moving to dispersed positions on road shoulders

Artillery Or Indirect Fire

8-55. Enemy artillery units or indirect fire weapons may be used to destroy logistical convoys or to harass and interdict the forward movement of supplies and personnel. Artillery fires are either preplanned fires or fires called in and adjusted on a target of opportunity by a forward observer. Of the two, the adjusted fires present the most complex problem as the artillery barrages can be adjusted to follow the actions of the convoy.

8-56. **Active Defense**. Active defensive measures against artillery are extremely limited but must not be overlooked. Active measures include:

- Directing counter-battery fire if the direction and approximate distance to the enemy artillery can be estimated.
- Directing small arms fire or artillery fires against the enemy forward observer if he can be located.
- Coordinating air strikes against the enemy artillery.

8-57. **Passive Defense**. The formation in which the convoy moves can be a type of passive defense. See the discussion of open and closed convoys under passive defense for air attacks.

8-58. The convoy commander has three options when confronted with incoming artillery rounds: halt in place, continue to march, or disperse quickly to concealed positions. Regardless of the option selected, the actions to be taken and the signal directing the action should be covered in the unit SOP. The primary consideration is the immediate departure from the impact area.

8-59. The convoy should only be halted when the artillery concentration is ahead of the convoy. The convoy commander should look for an alternate route around the impact area and the convoy should remain prepared to move out rapidly.

8-60. The mission or terrain may require the convoy to continue. If this is the case, increase speed and spread out to the maximum extent the terrain will allow. Casualties can be reduced by avoiding the impact area, increasing speed, wearing protective equipment, using the vehicle for protection, and increasing dispersion.

Sniper Fire

8-61. Take extreme caution when sniper fire is received to ensure that any return fire does not harm friendly troops or civilians in the area. The best actions are passive. Ensure all personnel wear kevlar helmets and available body armor at all times. All vehicles should move through the area without stopping. Escort personnel should notify the march element commander by giving a prearranged signal, like a smoke grenade thrown in the direction of fire, and attempt to locate and destroy the sniper by long-range fire if in a free-fire zone. Prevent convoy personnel from random firing by designating personnel to return fire.

8-62. The convoy commander may order additional fire or supporting forces into the area to destroy, capture, or drive off the sniper. Convoy personnel should be aware that a heavy volume of fire is frequently used by the enemy to slow down a convoy before an ambush. Remember all details so the incident can be reported to higher headquarters.

Ambush

8-63.   This paragraph provides guidance in developing and employing counter ambush tactics and techniques. The very nature of an ambush, a surprise attack from a concealed position, places an ambushed unit at a disadvantage. Combat situations may prevent a convoy from taking all the measures necessary to avoid being ambushed. Therefore, a convoy must take all possible measures to reduce its vulnerability. These are passive measures supplemented by active measures taken to destroy or escape from an ambush. For information on the types of ambushes, see FM 21-75.

8-64. No single defensive measure, or combination of measures, will prevent or effectively counter all ambushes in a situation. The effectiveness of counter ambush measures is directly related to the state of training of troops and the leadership ability of the leaders.

8-65.   The best defense is to avoid being ambushed. Take the following actions to avoid an ambush:

- Select the best route for your convoy.
- Make a map (digital) reconnaissance.
- Make a ground reconnaissance.
- Make an aerial reconnaissance.
- Obtain current intelligence information (ASAS and UAV).
- Use OPSEC to deny the enemy foreknowledge of the convoy.
- Do not present a profitable target.
- Never schedule routine times or routes.

8-66.   Take the following actions to reduce the effectiveness of ambushes:

- Harden vehicles.
- Cover loads.
- Space prime targets throughout the convoy.
- Wear protective clothing.
- Use assistant drivers.
- Carry troops and supplies.
- Use prearranged signals to warn the convoy of an ambush.
- Use escort vehicles (military police, tanks, armored vehicles) or gun trucks.
- Thoroughly brief all convoy personnel on immediate action drills.
- Practice immediate action drills.
- Maintain the interval between vehicles.
- Move through the kill zone, if possible.
- Stop short of the ambush.

- Do not block the road.
- Rapidly respond to orders.
- Aggressively return fire.
- Counterattack with escort vehicles.
- Call for artillery support.
- Call in TACAIR support.
- Call for the reserve force.

8-67. In the event of ambush during night convoy operations under blackout drive, turn on service drive lights and increase speed to clear the ambush area. Be aware that drivers wearing night vision goggles will be temporarily blinded when service drive is turned on.

8-68. **Road Not Blocked**. Guerrillas are seldom able to contain an entire convoy in a single kill zone. This is due to the extensive road space occupied by even a platoon-size convoy and because security or lack of available forces may limit the size of the ambushing force. More often, a part of a convoy is ambushed, either the head, tail, or a section of the main body. That part of the convoy that is in the kill zone and receiving fire must exit the kill zone as quickly as possible if the road to the front is open. Vehicles disabled by enemy fire are left behind or, if blocking the road, pushed out of the way by following vehicles. Armored escort vehicles must not block convoy vehicles by halting in the traveled portion of the road to return fire.

8-69. Vehicles that have not entered the kill zone must not attempt to do so. They should stop and personnel should dismount, take up a good defensive position, and await instructions. Since escort vehicles may have left the road to attempt to overrun a hostile position, elements of the convoy should not fire on suspected enemy positions without coordinating with the escort forces.

8-70. Other actions that convoy personnel can take to neutralize the ambush force include:

- Call for artillery fire on enemy positions.
- Call for gunship or tactical air or army aviation fire on enemy positions.
- Direct gun trucks and other vehicles mounted with weapons to lay down a heavy volume of fire on the ambush force.
- Call for reaction forces.
- Direct all nondriving personnel to place a heavy volume of fire on enemy forces as rapidly as possible as vehicles move out of the kill zone.
- Vehicles must keep their distance to reduce the number of vehicles in the kill zone.

8-71. A motor transport convoy with a limited escort is seldom able to defeat a hostile force and should not attempt to do so. Normally,

a transport unit will not deploy to attack a hostile force unless it is necessary to prevent destruction of the convoy element. It relies on supporting air, artillery, escorts, and reaction forces.

8-72. **Road Blocked**. When an element of a convoy is halted in the kill zone and is unable to proceed because of disabled vehicles, a damaged bridge, or other obstacle, personnel will dismount, take cover, and return a maximum volume of fire on enemy positions. When dismounting, exit the vehicle away from the direction of enemy fire. Security/escort troops from vehicles that have passed through the ambush area dismount and lay down a base of fire on the ambush position. Reaction forces should be called in as soon as the ambush attack is launched. When a security escort is provided and a combat emergency arises, the escort commander has operational control of the security element to attack and neutralize the hostile force. Normally, the security force will take action to neutralize the ambush while the convoy escapes from the kill zone. In an ambush situation, immediate reaction and aggressive leadership are essential to limit casualties and damage to vehicles, cargo, and personnel. If immediate air or artillery support is available, personnel will be restricted to a specified distance from the road to avoid casualties from friendly fire. In this situation, personnel in the kill zone establish a base of fire, while others take up defensive positions away from their vehicles and wait while supporting fire is called in on the enemy positions. Fire in the kill zone may be from only one side of the road with a small holding force on the opposite side. To contain the convoy element in the kill zone, mines and booby traps are frequently placed on the holding force side. The security escort must take care in assaulting the main ambush force as mines and booby traps are commonly used to protect its flanks.

8-73. When the enemy is dislodged, the road must be cleared and convoy movement resumed as soon as possible. Wounded personnel are evacuated using the fastest possible mode. When disabled vehicles cannot be towed, their cargo should be distributed among other vehicles if time permits. When it is not feasible to evacuate vehicles and/or cargo, they will be destroyed upon order from the convoy commander. If at all possible, radios and other critical items will be recovered before the vehicles are destroyed. Under no circumstances will they be allowed to fall into enemy hands.

8-74. **Mines and Booby Traps**. Mines and booby traps are frequently part of an ambush. Command-detonated mines are often used to start an ambush. Mines will also be planted along the shoulder of the road for harassment and interdiction. A booby trap system may be used against personnel in vehicles and could consist of hand grenades. Claymore mines or artillery shells may be suspended from trees and command-detonated when a vehicle passes.

8-75. The following guidelines have proven effective in decreasing damage by mines in convoy operations:

- Track the vehicle in front.
- Avoid driving on the shoulder of the road.
- Whenever possible, do not run over foreign objects, brush, or grass in the road.
- Avoid fresh earth in the road.
- Watch local national traffic and the reactions of people on foot. (They will frequently give away the location of any mines or booby traps.)
- When possible, arrange for the engineers to sweep the road immediately before the convoy is scheduled to move over it.
- Use heavy vehicles such as tanks to explode small mines when deployed in front of the convoy.
- Harden vehicles.
- Wear protective equipment.

Nuclear, Biological, Or Chemical Attacks

8-76. Chemical agents can be disseminated by artillery fire, mortar fire, rockets, missiles, aircraft spray bombs, grenades, and land mines. Always be alert because agents may already be present on the ground or in the air. Chemical agents are substances in either gaseous, liquid, or solid form. To protect against an NBC attack, you need to know how those agents may affect your body if they are used against you. Take defensive actions according to local directives and SOPs. For detailed information on defense against NBC warfare, see FMs 3-4, 3-5, and 3-100.

Area Reconnaissance Security

8-77. Area reconnaissance and security will always be a primary mission for MPs. Use of the S2/3's IPB will be important in identifying critical terrain that needs to be kept under frequent or constant surveillance, such as LZs, DZs, and axis of advance. The MP's ability to find, fix, and destroy Level I and Level II threats will greatly decrease the commander's requirement to employ combat forces in the rear. The early detection of heavy Level II and Level III threats by MPs will allow them to at least delay, if not defeat, the enemy before he reaches the brigade's logistics assets. Ensure the MPs are sufficiently equipped with antitank capability. Use them aggressively as rear area scouts in counter-reconnaissance missions to keep enemy reconnaissance out of the ASA. If the enemy force is more than the MP platoon can handle, the following contingencies should be planned for:

- Reprioritize artillery support to the rear area mission to slow the enemy until friendly combat forces make contact.
- Redirect attack helicopters or close air support to slow down or stop the enemy.
- Coordinate assets from division or corps to assist in backup for the rear operations battle.

QUICK REACTION FORCE

8-78. The DASB must ensure that quick reaction forces (QRF) are identified, trained and equipped to perform their mission of reaction to threats against the ASA both at bases and the base cluster. The S2/3 NCOIC is usually the chief of the QRFs of the ASA. The ready reaction forces must be well rehearsed in:

- Unit assembly.
- Friendly and enemy force recognition.
- Actions on enemy contact.
- Delaying operations.
- Call for fire (artillery, and rotary and fixed wing close air support).
- Reconnaissance and surveillance/patrolling operations.
- Small unit tactics in-conjunction with the MPs and a tactical combat force.
- Individual and crew served weapons, anti-tank weapons, mines, pyrotechnics, armored vehicle weapons systems and operations, night vision device, global positioning system, familiarization and operations.
- Conduct of rehearsals.
- Anti-fratricide measures.
- Passage of lines.
- Challenge and password.
- Running password.
- Hand and light signals.
- Troop leading procedures.
- Time distance factors (enemy avenues of approach).
- Enemy prisoner of war procedures.
- Night operations.

8-79. The ready reaction forces must possess:

- Friendly barrier plan.
- Friendly sector sketch.
- Pre-planned fires -field artillery / mortar / attack helicopter / CAS.

- Medical evacuation (MEDEVAC) procedures.

8-80. The ready reaction forces must be briefed on:

- Specifics of mission.
- Communication procedures.
- Special requirements/rules of engagement (ROE).
- Completion of mission.
- Quick recovery & reports.
- Debriefing.

TACTICS, TECHNIQUES, PROCEDURES (TTPS)

8-81. The QRF provides the commander with the capability to repel a Level II attack. The base commander determines the best use of the QRF as he monitors the battle. The QRF soldiers are not integrated into the perimeter and have no conflicting defensive requirements.

8-82. The QRF checklist is listed below:

- Example of team composition (METT-TC driven).
  - NCOIC.
  - A/B team leaders.
  - Combat lifesaver.
  - Radio/commo operator.
  - Crew-served weapon operators (2 ea.).
- Force Protection Enhancement.
  - Hardened gun trucks.
  - Flak vests.
  - Basic load of Class V (for vehicle and soldiers).
  - Night vision devices.

QRF BATTLE DRILLS

Battle Drill #1: Assemble The Force

- Threat goes to Level II, or company comes under direct attack, the QRF soldiers immediately assemble at the unit CP with gun truck fully armed and prepared to engage the threat.
- The QRF NCOIC establishes accountability and inspects soldiers' ammunition load.
- The QRF takes a defensive posture around the CP until told to mount gun truck, or move out on foot.
- The QRF NCOIC takes all instructions from the company commander or ranking individual at the CP.
- The QRF deploys in accordance with commander's or ranking individual's orders.

Battle Drill #2: Employment Of QRF

- The QRF NCOIC receives deployment information and loads truck.
- The QRF moves to specified location and positions gun trucks in over watch position as directed by QRF NCOIC to provide cover from direct enemy fire to protect the force during dismount.
- Gun truck provides suppressive fire while dismounts move into position as directed by the QRF NCOIC.

Battle Drill #3: Engagement Of The Enemy

- The primary mission of the QRF is to repel the enemy attack. The QRF will close with and attempt to destroy the enemy unless otherwise directed by the CP.
- The QRF reinforces existing perimeter defensive positions and provides mass fire on known enemy locations.
- The QRF NCOIC communicates situation (SALUTE Report) to CP via man pack radio and takes further instructions from the CP.
- The QRF will not breach perimeter defense unless otherwise directed.
- The QRF engages enemy forces until successfully defeated.

Battle Drill #4: Command And Control

- The QRF NCOIC takes charge of existing perimeter forces and dictates the flow of the battle via communication with the CP.
- The QRF NCOIC coordinates with adjacent sector NCOICs to minimize the risk of fratricide.
- Sub-element to which the QRF is deployed will take all instructions for engagement from the QRF NCOIC.
- The QRF NCOIC directs all fires and rates of fires of all available fighting systems to effectively repel the enemy attack.
- The QRF NCOIC coordinates with the CP any requirements for reinforcements or munitions resupply via man pack radio.

Battle Drill #5: Consolidation And Recovery

- Once attacking force is defeated and repelled, the QRF NCOIC conducts accountability and reports to the CP.
- Cross level ammunition and reallocates soldiers along compromised perimeter in preparation for possible enemy counter offensive.
- The QRF NCOIC assesses casualty situation and coordinates medical support with CP.

- Maintain area security and control until recalled by CP to stand down.
- Once recalled by CP, QRF NCOIC conducts debrief with commander or ranking individual at CP.
- Conduct PMCS, cleans and services equipment, replenishes Class V basic load prior to QRF soldiers returning to duty positions.
- The QRF NCOIC identifies any personnel and equipment replacements to CP prior to returning to duty position.

BASE OPERATIONS

8-83. The elements in the ASA are organized into bases for self-defense. Normally, each DASB company and each field train in the ASA will constitute a base. Miscellaneous small teams will be assigned to a base by the BCOC. The base commander is responsible for preparing the base defense plan and coordinating with the BCOC. Each base must be capable of defending itself and supporting other bases against a Level I threat and delaying a Level II threat until the reaction force arrives. If a base is faced with a Level II threat, it must take action to destroy the threat and prevent the capture of critical supplies and equipment. Base commanders are responsible for the establishing the following priorities of work:

- Position antiarmor weapons, machine guns, and assign sectors of fire.
- Position other defensive assets available (weapon systems for repair).
- Establish local security and OP positions.
- Establish the CP and wire communications.
- Designate final protective line (FPLs) and final protective fire (FPFs).
- Clear fields of fire and prepare range cards and sector sketches.
- Coordinate with adjacent units, left, right, forward, and to the rear.
- Prepare primary fighting positions.
- Emplace obstacles and mines.
- Mark or improve marking for target reference points (TRP) and other fire control measures.
- Improve primary fighting positions such as overhead cover.
- Prepare alternate positions, then supplementary positions.
- Establish a sleep and rest plan.
- Reconnoiter potential enemy infiltration routes, and friendly patrol routes.

- Rehearse engagements, disengagement, and any reaction force plans.
- Continue to improve positions.

8-84. Base commanders are responsible for the establishing the following specifics:

- Coordinate with the base on each side to plan mutually supporting fires and to avoid troops engaging each other. If a problem exists in that area, the base commander will notify the BCOC.
- Assign each individual a fighting position. Positions should provide overhead cover. Positions must also allow for interlocking sectors of fire.
- Ensure proper individual fighting positions are prepared. Soldiers should use all available cover. Positions should provide frontal protection from direct fire while allowing fire to the front and oblique. Details on fighting positions are in FM 5-103.
- Deploy crew-served weapons in fighting positions with primary and secondary sectors of fire. They cover the most likely enemy avenues of approach. Instructions for preparing positions for each type of crew-served weapon are also in FM 5-103. The base commander must ensure each weapon has an adequate range card. Identify target reference points to be able to direct fire against approaching ground or air enemy forces. The commander must also ensure that dead space is covered with grenade launchers or mines.
- Deploy all weapon-carrying vehicles on the base perimeter. As discussed previously, this includes combat vehicles in the ASA for repair.
- Ensure vehicles are properly positioned. Natural cover and concealment are used as much as possible. Hull defilade positions or hide positions may be used with vehicles on the perimeter whenever possible.
- Setup observation posts and listening posts. The DASB cannot constantly occupy a full perimeter and perform its mission. Early warning is imperative. Therefore, OPs are critical. Observation points must provide a good view of the sector, which ideally overlaps with the adjacent OP sectors. Both the OPs and routes to them must provide cover and concealment. They should not be in positions that attract attention (such as isolated groups of trees) or on the very peaks of hills where positions would be silhouetted. Further guidance on OPs may be found in FMs 19-4 and 17-98.
- Establish patrols when required.
- Enforce noise and light discipline.

- Ensure camouflage is used properly, guidance can be found in FM 5-20.
- Plan and establish hasty obstacles.
- Create a quick reaction force to respond immediately against a threat within the base. Ensure the force has covered and concealed routes to each sector on the perimeter.
- Ensure soldiers know alert signals and proper responses to artillery and air attacks. Since soldiers are not continuously occupying the perimeter, they must be well trained to quickly respond to early warnings.
- Prepare sector sketches and provide to the BCOC. These will be updated at regular BCOC meetings or shift change briefings. Sketches will include major terrain features, weapon positions and sectors of fire, dead space, OP positions, obstacles and mine fields, critical pieces of equipment, supplies, or facilities, and target reference points. See Figure 8-6 for an example of a defensive sector sketch, Figure 8-7 for examples of range cards, and Figure 8-8 for weapons characteristic within the DASB. Below is a checklist of those items needed in sector sketch preparation:
  - Draw your unit sector of engagement area.
  - Draw main terrain features in sector (s) and range to each.
  - Draw subunit positions.
  - Draw subunit primary and secondary sectors of fire.
  - Draw weapon positions with primary sectors of fire for each.
  - Draw machinegun final protective lines or principal direction of fire.
  - Draw locations of CP/OP.
  - Draw TRPs and RPs in sector.
  - Draw mines/obstacles.
  - Draw indirect fire target locations/final protective fire locations.
  - Draw and label dead space.
  - Draw patrol routes.
  - Draw locations, sector of fire of other weapons in your sector.
  - Place your unit ID, date time group (DTG) prepared, and magnetic north arrow on sketch.

DEFENSE SECTOR SKETCH

UNIT:_____   LOCATION:_____ AS OF:____

SYMBOLS

↑ LT AUTO WPN

HVY GUN (50 CAL)

HVY GUN TRK

JAVELIN, DRAGON, VIPER

ANTI-PERSONNEL

● MINE, UNSPECIFIED

x   x   x   WIRE

>————< LANE

BATTLE
POSITION

HASTY BATTLE
POSITION

SMALL TRENCH
FORTIFICATION

⬧ INFANTRY FIGHTING VEHICLE

OP   OP

UNIT

TERRAIN
FEATURE
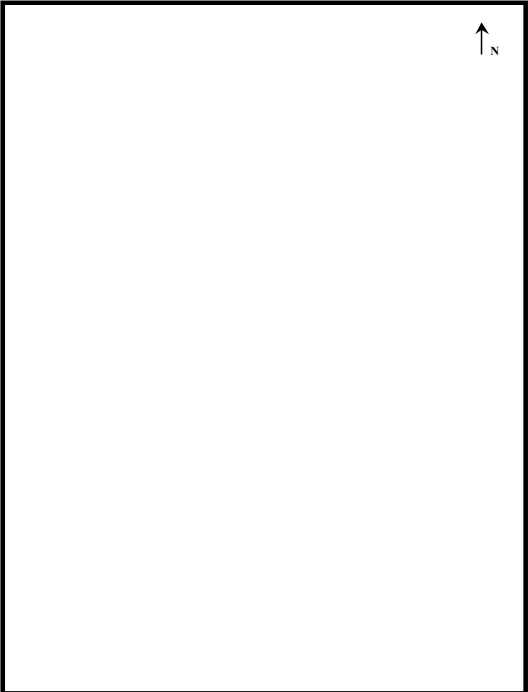
↑ N

Figure 8-6. Defensive Sector Sketch
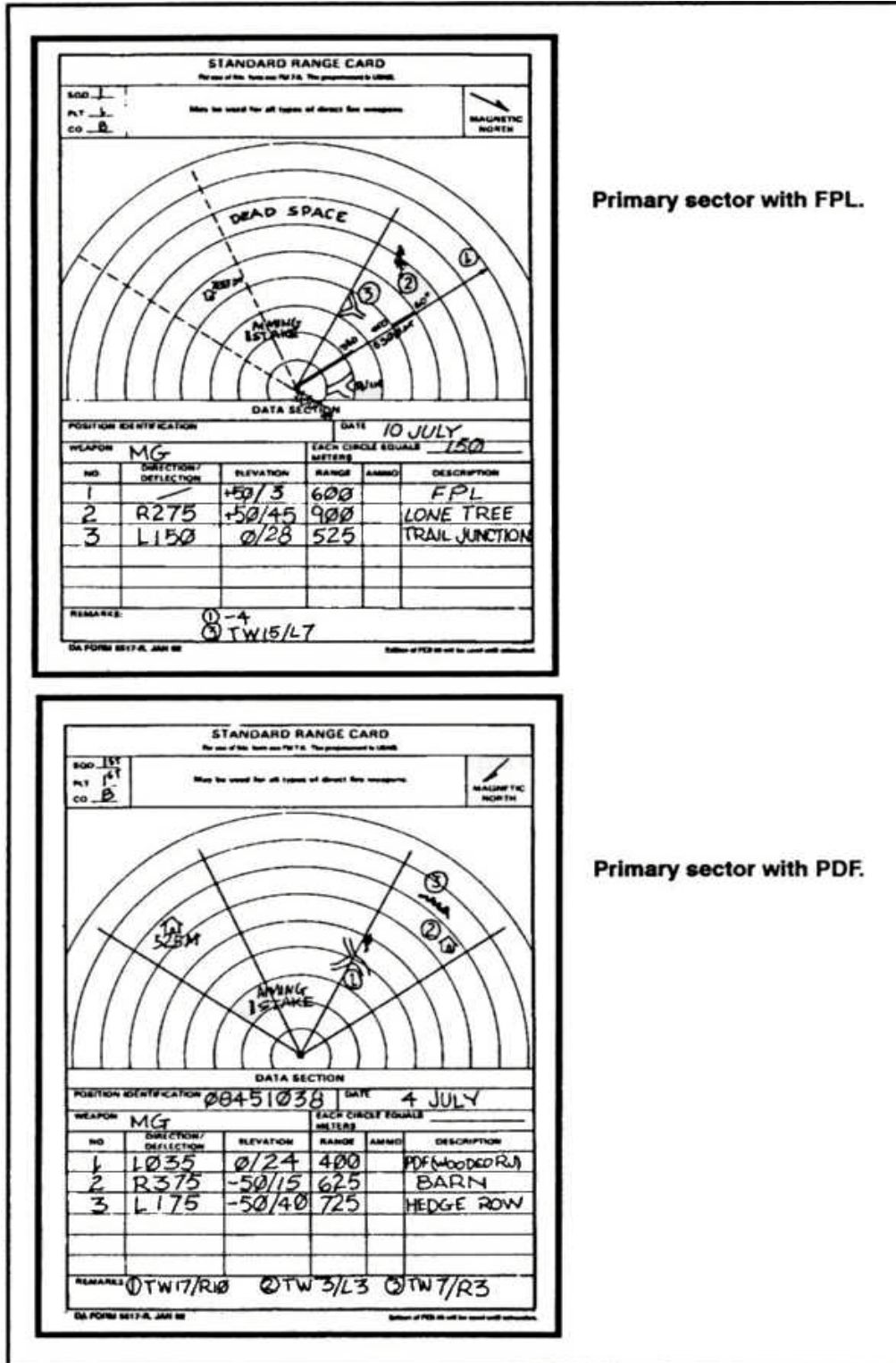
Figure 8-7. Range Card

Weapon Caliber	Effective Range/Maximum Range
M9 Pistol (9-mm)	Effective range: 50m
M16A1 Rifle (5.56-mm)	Effective range: 460m Maximum range: 2653m
M16A2 Rifle (5.56-mm)	Effective range: 550m Maximum range: 3,534m
M203 Grenade launcher (40-mm)	Effective range: 350m (area target);150m (point target) Maximum range: 400 m
M249 Squad automatic weapon (5.56 link)	Effective range: 900m Maximum range: 3,600m
M60 Machine gun (7.62)	Effective range: 1,100m Maximum range: 3,725m
M2 HB Machine gun (50-mm)	Effective range: 1,830m Maximum range: 6,764m
MK19 Grenade machine gun (40-mm link)	Effective range: 2,212m (area target);1500 m (point target) Maximum range:2,212m
M136 HE Antitank weapon (AT-4)(84-mm)	Effective range: 300m Maximum range: 2,100m

Figure 8-8. Weapons Characteristics Within The DASB

DEFENSE OF SUPPLY POINTS

8-85. Whenever engineer assets are available, berms or deep-cut protective positions must be dug to protect fuel tankers and drums. Natural terrain concealment and camouflage nets are also used. Supplies are protected in deep-cut trenches if time allows, but construction of trenches for those items is a low priority. Traffic control must include measures to conceal movement at, to, and from supply points. At water points, control of spills and drainage is required to avoid standing pools of water, which reflect light. Proper fighting positions for individual and crew served weapons must be dug and integrated into the base defense. These include fighting positions for vehicles with mounted crew served weapons.

DEFENSE OF MAINTENANCE FACILITIES

8-86. In the company areas, individual positions are prepared near billeting areas and on the periphery of workstations. Proper fighting positions, bunkers, or other shelters are constructed next to key shop facilities for quick protection from artillery and air attacks. Use engineer assets when available to speed this process. These include fighting positions for vehicles with mounted crew served

weapons or broken armored vehicles capable of firing their primary weapons systems. Ammunition should be acquired for these weapons systems and cached near the fighting positions.

INTELLIGENCE

INTELLIGENCE PREPARATION OF THE BATTLEFIELD (IPB)

8-87. Intelligence preparation of the battlefield is a systematic, continuous process of analyzing the threat and environment in a specific geographic area. It is designed to support staff estimates and military decision making. By applying the IPB process, the commander can selectively apply and maximize his combat power at critical points in time and space on the battlefield. Detailed information on IPB is in FM 34-130. Intelligence preparation of the battlefield facilitates:

- Determining the threat's likely COA.
- Describing the environment your unit is operating within and the effects of the environment on your unit.

8-88. IPB consists of four steps:

- Define the battlefield environment.
- Describe the battlefield's effects.
- Evaluate the threat.
- Determine threat COAs.

8-89. The IPB process begins prior to and continues during the command's initial planning for an operation and is continuously updated during the operation. In **step 1 (define the battlefield)**, the DASB S2/3:

- Identifies characteristics of the battlefield which will influence friendly and threat operations.
- Establishes the limits of the area of interest (AI).
- Identifies gaps in current intelligence holdings.

8-90. Identifying for further analysis specific features of the environment or activities within it, and the physical space where they exist, that may influence available COAs or the commander's decisions. This focuses the command's initial intelligence collection efforts and the remaining steps of the IPB process. To focus the remainder of the IPB process, the S2/3 identities characteristics of the battlefield which require in-depth evaluation of their effects on friendly and threat operations, such as terrain, weather, logistical infrastructure, and demographics. Generally, the S-2 focuses more attention on areas within the command's area of operations (AO) and battle space than for the more broad areas of interest (AI). The AI is the geographical area from which information and intelligence are required to permit planning or successful conduct of the command's operation. Because the commander and staff need time to process information and to plan and synchronize

operations, the command's AI is generally larger than its AO and battle space. The limits of the AI include the characteristics of the battlefield environment identified as exerting an influence on available COAs or command decisions. Additionally the AI is based on the amount of time estimated to complete the command's mission and the location and nature of the characteristics of the battlefield, which will influence the operation. During the planning process, the DASB S2/3 confers with the brigade S3 on recommendations for the command's battle space during development of friendly COAs. Defining the significant characteristics of the battlefield environment also aids in identifying gaps in current intelligence holdings and the specific intelligence required to fill them. Similarly, the S2/3 identifies gaps in the command's knowledge of the threat and the current threat situation. Once approved by the commander, the specific intelligence required to fill gaps in the command's knowledge of the battlefield environment and threat situation becomes the command's initial intelligence requirements. This effort, if successfully accomplished will result in saving time and effort by focusing only on those areas and features which will influence COAs and command decisions. If not properly executed, the DASB S-2 will waste time and effort collecting and evaluating intelligence on features of the battlefield environment that will not influence success of the command's mission.

8-91. **Step 2 (describe the battlefield effects),** evaluates the effects of the environment with which both sides must contend. The DASB S2/3 identifies the limitations and opportunities the environment offers on the potential operations of friendly and threat forces. This evaluation focuses on the general capabilities of each force until COAs are developed in later steps of the IPB process. This assessment of the environment always includes an examination of terrain and weather but may also include discussions of the characteristics of geography and infrastructure and their effects on friendly and threat operations. Characteristics of geography include general characteristics of the terrain and weather, as well as such factors as politics, civilian press, local population, and demographics. An area's infrastructure consists of the facilities, equipment, and framework needed for the functioning of systems, cities, or regions. Products developed in this step might include, but are not limited to:

- Population status overlay.
- Overlays that depict the military aspects and effects of terrain.
- Weather analysis matrix.
- Integrated products such as modified combined obstacle overlays (MCOOs).

8-92. Regardless of the subject or means of presentation, the S2/3 ensures that these products focus on the effects of the battlefield environment.

8-93. The best terrain analysis is based on a reconnaissance of the AO and AI. Identifies gaps in knowledge of the terrain which a map analysis cannot satisfy. Use the gaps you identify as guide for reconnaissance planning. Because of time constraints, focus reconnaissance on the areas of most importance to the commander and his mission. For example, when conducting terrain analysis for a signal unit you might focus on identifying locations from which the unit's assets can best support the force commander while also identifying the best locations for the threat's EW assets that might target friendly signal systems. Engineer terrain support available, includes the digital topographic support system and MCS-engineer. If digital tools are not available, evaluate the terrain through a map analysis supplemented by reconnaissance. National imagery and mapping agency (NIMA) produces specialized maps, overlays, and databases to aid in map based evaluations. Specialized NIMI products address such factors as:

- Cross-country mobility.
- Transportation systems (road and bridge information).
- Vegetation type and distribution.
- Surface drainage and configuration.
- Surface materials (soils).
- Ground water.
- Obstacles.

8-94. Ensure that the terrain analysis includes the effects of weather on the military aspects of the terrain. Consider the existing situation as well as conditions forecasted to occur during mission execution.

8-95. Also consider that terrain analysis is a continuous process. Changes in the battlefield environment may change the evaluations of its effects that result from terrain analysis. For example:

- If built-up areas are reduced to rubble or lines of communication (LOCs) are destroyed by battle, you must reevaluate the mobility characteristics of the AO.
- Similarly, if weather conditions change you must reevaluate the terrain's effect on military operations. Terrain analysis must always consider the effects of weather.

8-96. Terrain analysis consists of an evaluation of the military aspects of the battlefield's terrain to determine its effects on military operations. The military aspects of terrain are:

- Observation and fields of fire - Observation is the ability to see the threat either visually or through the use of surveillance devices. Factors that limit or deny observation include concealment and cover.
- Concealment and cover - Concealment is protection from observation. It can be provided by woods, underbrush,

snowdrifts, tall grass, and cultivated vegetation. Cover is protection from the effects of direct and indirect fires. It can be provided by ditches, caves, river banks, folds in the ground, shell craters, buildings, walls, and embankments.

- Obstacles - Obstacles are any natural or manmade terrain features that stop, impede, or divert military movement. Examples of obstacles to ground mobility are buildings, steep slopes, rivers, lakes, forests, deserts, swamps, jungles, cities, minefield, trenches, and military wire obstacles.

- Key terrain - Key terrain is any locality or area the seizure, retention, or control of which affords a marked advantage to either combatant. An example of key terrain is a bridge over an unfordable river which gives access to the opposite shore without requiring an assault crossing. Another example is a level clearing in rough terrain which is the only accessible landing field for airmobile operations.

- Avenues of approach - An AA is an air or ground route of an attacking force of a given size leading to its objective or to key terrain in its path. The identification of AAs is important because all COAs which involve maneuver depend upon available AAs. During offensive operations, the evaluation of AAs leads to a recommendation on the best AAs to the command's objective and identification of avenues available to the threat for withdrawal or the movement of reserves. During the defense, identify AAs that support the threat's offensive capabilities and avenues that support the movement and commitment of friendly reserves.

- 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, the DASB depends on the S2 channels 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.

8-97. Very high temperatures cause heat injuries and increased engine wear and failure. Very low temperatures increase cold weather injuries, damage to engines and cooling systems, lubrication problems, and fuel requirements. Cooler temperatures and humidity cause fog.

8-98. Precipitation affects mobility, visibility, and effectiveness of personnel and equipment. It also affects the quality of some stored material. Snow, even in small amounts, reduces the effectiveness of mines. DASB planners should consider precipitation of more than 0.1 inch per hour or 2 inches in 12 hours critical. Six inches of snow accumulation or drifts higher than 2 feet will have severe effects on mobility.

8-99.   Wind usually favors the upwind force by blowing dust, smoke, sand, rain, or snow on the downwind force. It affects employment of NBC munitions, smoke, and conventional weapons.

8-100.   Clouds affect air operations. This includes logistics air missions, but also our own close air support, as well as the enemy's ability to conduct airborne or air assault operations in the ASA.

8-101.   Though poor visibility limits employment of airborne forces, agents and special purpose force operations often rely on it to reduce the effectiveness of our rear area security. Poor visibility hinders control and reduces effectiveness of reconnaissance, surveillance, and target acquisition.

8-102.   Consider all of these factors when analyzing terrain, but always focus on the ones of most relevance to the specific situation at hand and the needs of the commander. Evaluate them in any order that best supports your analysis.

8-103.   Remember that the terrain analysis is not the end product of the IPB process. Rather, it is the means to determine which friendly COAs can best exploit the opportunities the terrain provides and how the terrain affects the threat's available COAs.

8-104.   In **step 3 (evaluate the threat),** the DASB S2/3 analyzes the command's intelligence holdings to determine how the threat normally organizes for combat and conducts operations under similar circumstances. When facing a well-known threat, the S2/3 can rely on his historical databases and well developed threat models. When operating against a new or less well known threat, he may need to develop his intelligence data bases and threat models concurrently.

8-105.   The S2/3's evaluation is portrayed in a threat model that includes doctrinal templates, which depict how the threat operates when unconstrained by the effects of the battlefield environment. Although they usually emphasize graphic depictions (doctrinal templates), threat models sometimes emphasize matrices or simple narratives.

8-106. Threat evaluation is a detailed study of the enemy forces. It considers their organization, tactical doctrine, equipment, and support systems. The DASB's interest for security purposes is in rear area threat evaluation. The DASB S2/3 prepares a doctrinal template to reflect the enemy's air assault, airborne, operational maneuver group, and special purpose force employment doctrine. Other rear area threats (insurgents, guerrillas, terrorists, agents, and potential civil unrest) cannot be depicted in a doctrinal template. For these threats, an unconventional warfare situation map and population status overlay are prepared. The situation map shows probable operating areas, headquarters, encampments, and movement routes for unconventional forces. The rear area population status overlay shows areas with a high potential for civil unrest or with concentrations of enemy

sympathizers. The overlay also shows where psychological operations would and would not be effective.

8-107. 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 our rear areas. Again, the brigade S2 will evaluate the threat and advise the brigade S3. He will perform threat integration for the entire rear area; the DASB commander must ensure threat integration for the ASA is coordinated with the brigade. Due to the limited resources available to the DASB commander to defeat the threat, he must identify specific areas of interest. These may include:

- Landing zones and drop zones.
- Key road junctions.
- Forest paths.
- Small groups of individuals attempting to move through or evade detection in the ASA.
- Areas with insurgency sites.
- Guerrilla/insurgency sites.
- Terrorist operating or headquarters areas.
- Target areas of interest are also identified along high-speed avenues of approach into the ASA.

8-108. **Step 4 (determine threat COAs),** integrates the results of the previous steps into a meaningful conclusion. Given what the threat normally prefers to do, and the effects of the specific environment in which he is operating now, what are his likely objectives and the COAs available to him? In step 4, the S2/3 develops enemy COA models that depict the threat's available COAs. He also prepares event templates and matrices that focus intelligence collection on identifying which COA the threat will execute. The enemy COA models are the products that the staff will use to portray the threat in the decision making and targeting processes. The S2/3 cannot produce these models, effectively predicting the threat COAs, unless he has:

- Adequately analyzed the friendly mission throughout the time duration of the operation; identified the physical limits of the AO and AI; and identified every characteristic of the battlefield environment that might affect the operation. Identified the opportunities and constraints the battlefield environment offers to threat and friendly forces.
- Thoroughly considered what the threat is capable of and what he prefers to do in like situations if unconstrained by the battlefield environment.

8-109. In short, the enemy COA models which drive the decision making process are valid only if the S2/3 establishes a good foundation during the in the first three steps of the IPB process.

8-110.   Like all other Army forces, the DASB must perform intelligence preparation of the battlefield (IPB).   The DASB's interest is twofold. First, the sustainment planning considerations described in Chapter 6 are based on the DASB's knowledge of the enemy, (for example, his projected use of chemical munitions affects the DASB's stockage of MOPP gear) the weather, (fog may make aerial resupply impossible), and the terrain (lack of adequate road nets may mandate evacuation by air). Related to but distinct from the support implications of IPB are the rear operations considerations.   For ASA security, the DASB commander along with his staff, must analyze the terrain and weather and integrate this information with knowledge of the enemy. This enables the commander to identify probable target areas and activities. He can then predict probable courses of action to plan security operations

RECONNAISSANCE AND SURVEILLANCE (R & S) PLANNING

8-111.   Reconnaissance is an active mission concerned with enemy, terrain, and/or weather.   It seeks out enemy positions, obstacles, and routes. Reconnaissance missions include:

- Zone recon is conducted within a specific zone. The zone is defined by boundaries.
- Area recon is conducted to obtain information concerning a specific location and the area immediately around it.
- Route recon is conducted to obtain information on the route and terrain from which the enemy could influence movement along that route.

8-112. Surveillance is passive. It implies observing a specified area or areas from a fixed concealed position. Observation Posts can provide 24-hour surveillance and must must be covered by indirect or direct fire.

8-113. R&S tasking matrix is a product used to display taskings, requests and coordination necessary to answer the commander's priority information requirements (PIR). The matrix is made up of:

- Named area of interest (NAI): Geographical area where information that will satisfy a specific information requirement can be collected.
- Location: Grid coordinates or terrain features that identify the NAI.
- Start/Stop: Beginning and end times for the R&S mission.
- Specific information requirement: The exact information required during the R&S mission. Derived by the S2/3 from the commander's PIR.   Issued in the form of a question. (Example: Is the bridge intact?)
- Unit or asset: Each unit or asset capable of collecting the necessary information will be marked with an X. Each unit

tasked to collect at a specific NAI will be marked with a circled X.

- Report requirement: Describes specific reporting requirements. (Example: report every hour using SALUTE format). Figure 8-9 is an example of a R & S tasking matrix.

RECONNAISSANCE AND SURVEILLANCE (R&S) TASKING MATRIX									
NAI	LOCATION	Specific Information Requirement	H D C	B S C	F S B	D A S B	D S B	D I S C O M		REPORTING REQUIREMENT

Figure 8-9. Reconnaissance and Surveillance (R&S) Tasking Matrix

SOURCES OF INFORMATION

8-114.   The DASB's responsibility for ASA security makes it imperative that the DASB TOC and brigade staff maintains a close relationship. Intelligence information possessed by the brigade with implications for ASA security must be available on MCS or passed to the DASB S2/S3.   In addition, he receives information from DISCOM S2 channels. However, intelligence gathering should not be restricted to these sources.   Local authorities, dislocated civilians, and local civilians are valuable intelligence sources. Information may also be obtained from base commanders within the ASA, military police, truckers, customers, and any other elements moving into the area. In addition, information should flow laterally as well as vertically.

OTHER DEFENSIVE MEASURES

COORDINATION

8-115. In addition to the C2 relationships discussed above, the DASB TOC must ensure proper coordination is maintained with the elements discussed below. Due to the limited assets available to the ASA, the BCOC must coordinate all minefield, obstacles, and artillery fires within the ASA. One technique that may be used is to arrange in advance to have designated field artillery and ADA representatives (and perhaps the MP platoon leader) automatically report to the BCOC when the threat status reaches a predetermined level.

FIELD ARTILLERY SUPPORT

8-116. Call for fire will be made in accordance with procedures detailed in FM 6-30. TC 25-4-1 gives details on planning and conducting fire coordination exercises.

8-117. For the fire plan to be effective in the defense, the unit must plan and execute fires in a manner that achieves the intended task and purpose of each target. Indirect fires serve a variety of purposes in the defense, including the following:

- Slow and disrupt enemy movement.
- Prevent the enemy from executing breaching operations at turning or blocking obstacles.
- Destroy or delay enemy forces at fixing obstacles using massed fires or pinpoint munitions (such as copperhead rounds).
- Disrupt enemy support by fire elements.
- Defeat attacks along dismounted avenues of approach with the use of FPF.
- Disrupt the enemy to allow friendly elements to disengage or conduct counterattacks.
- Deliver scatterable mines to close lanes and gaps in obstacles, to disrupt or prevent enemy breaching operations, to disrupt enemy movement at choke points, or to separate or isolate enemy echelons.
- Provide illumination as necessary.
- Execute suppression of enemy air defenses (SEAD) missions to support CAS attacks and high-payoff targets.
- Use smoke to separate enemy echelons; to screen friendly displacement; or to silhouette enemy formations, facilitating direct fire engagement.

8-118. In developing the fire plan, the DASB must evaluate the indirect fire systems available to support the operation; considerations include tactical capabilities, weapons ranges, and available munitions. The BCOC will develop the fire planning required to implement the execution of fire support for the ASA. The DASB S2/S3 will coordinate fires with the ASA FSO

designated by the field artillery battalion commander. Together, they will plan targets for the ASA defense and help establish preplanned engagement areas for artillery and close air support. These fires will be coordinated with the brigade fire support coordinator, through the service battery or directly from the BCOC to the main CP. Targets are placed in the TACFIRE systems for both brigade and division implementation. Artillery (and ADA) overlays must include displaced civilian camps, routes, and information on arts, monuments, and archives. Calls for fire from the bases are made to the BCOC via field phones. If phones are not available, FM radio will be used. As previously mentioned, a direct line will link the BCOC and FA service battery CP. An aerial fire support officer may be on call to adjust fires as necessary.

AIR DEFENSE ARTILLERY SUPPORT

8-119. The ASA must be protected from enemy air strikes. The focus of the air defense plan is on likely air avenues of approach for enemy fixed-wing aircraft, helicopters, and UAVs; these may or may not correspond with the enemy's ground avenues of approach. Air defense artillery assets are positioned based on METT-TC factors and the DASB commander's defense plan. For example, a key consideration is to position air defense vehicles, BSFVs or Bradley Linebackers or Avengers, usually about 2 kilometers apart, to maximize the Stinger's capabilities in the defense. The Stinger then becomes the primary killer of rotary-wing and fixed-wing aircraft, with the Bradley's 25-mm machine gun used for close-in defense. In another situation, the DASB S2/3 and the brigade air defense officer (ADO) may determine that the air defense vehicles should be positioned independent of the ASA. These vehicles are also frequently used to protect friendly counterattack forces against aerial observation or attack. Other factors in air defense planning include development of engagement criteria for BSFVs or Linebackers, or Avengers that become involved in the ground fight and positioning of air defense vehicles near templated enemy LZs near the ASA. The ADA base in the ASA will run a line to the BCOC. This will ensure early warning of all inbound aircraft. In addition, although not located in the ASA, Patriot units may be assigned sectors that encompass the ASA and support ADA fires within the ASA. Resupply of Stinger missiles places unique demands on the base support company; it requires detailed planning and consideration. It may be necessary to pre-position Stingers in the section areas to facilitate timely resupply. The DASB S2/S3 will also coordinate with the brigade S3 through the brigade ALOC to identify safe air corridors for logistics air missions and to ensure all ADA assets are aware of impending friendly air movements in and around the ASA. The ADA operations are discussed in FM 44-3.

ENGINEER SUPPORT

8-120. When engineer assets are located in the ASA, they will be made available to the BCOC for survivability and countermobility operations. Therefore, the DASB S2/S3 must be prepared to take advantage of assets as they become available. Along with an engineer designated by the brigade engineer, he will plan barriers and minefields according to guidelines and principles presented in FMs 5-100 and 5-102.

8-121. Mobility operations in the defense focus on the ability to reposition forces, including unit displacement and the commitment of reserve forces. Priorities set by the AB may specify some routes for improvement in support of such operations. Normally, however, all or most of the engineer battalion assets will be allocated to the mobility and/or countermobility effort. The DASB S2/3 plans and coordinates all mobility requirements of the ASA with the brigade engineer and brigade S3.

8-122. Survivability positions are prepared in the ASA to protect CL III(B) vehicles, major weapon systems, critical assets of service, supply and transportation as the DASB commander dictates. Positions can be dug in and reinforced with overhead cover to provide crew-served weapons with protection against shrapnel from air bursts. Combat vehicles in the ASA for maintenance and other armored vehicles in the ASA should have vehicle fighting positions constructed with both hull-defilade firing positions and turret-defilade observation positions. In addition, the DASB may use blade assets to dig in the ATP ammunition stocks at alternate, supplementary, or successive storage sites and in individual vehicle fighting positions.

8-123. The process of digging in a ASA requires many "blade hours" and assets may be limited. The DASB S2/3 with guidance from the commander must develop a plan for digging in the ASA. The S2/3 NCOIC prepares the ASA for the arrival of the blades by marking vehicle positions and designating guides for the engineer vehicles. The DASB commander must prioritize the survivability effort; for example, he may only have time to dig in positions that have the least amount of natural cover and concealment. Soil composition should also be a consideration in battle position selection; sites to be avoided include those where the soil is overly soft, hard, wet, or rocky.

8-124. Planning countermobility in the defense, the DASB commander may integrate individual obstacles into both direct and indirect fire plans, taking into account the intent of each obstacle group. At the task force level, obstacle intent consists of the target of the obstacle group, the desired effect on the target, and the relative location of the group. In addition, like artillery and mortar employment, obstacle emplacement must have a clear task and purpose. The purpose will influence many aspects of the operation, from selection and design of obstacle sites to actual conduct of the

defense. Normally, the task force will designate the purpose of an obstacle group. For example, the task force commander might specify this purpose: "We must deny the enemy access to our flank by turning the northern, first-echelon motorized rifle battalion (MRB) into our engagement area, allowing Team B and Team C to mass their fires to destroy it".

8-125.   Refer to FM 90-7 for additional information on obstacle planning, siting, and turnover. The following paragraphs discuss employment considerations for various types of standard obstacles. Engineers can augment these with nonstandard obstacles such as tank ditches and abatises.

Disrupting Effects

8-126.   These are often the product of situational obstacles, such as scatterable mines. Disrupting effects focus a combination of fires and obstacles to impede the enemy's attack in several ways, such as breaking up his formations, interrupting his tempo, and causing premature commitment of breaching assets. These obstacles are normally used forward within engagement areas or in support of forward positions within a defensive sector. Normally, only indirect fires and long-range direct fires are planned in support of disrupting obstacles.

Turning Effects

8-127.   The commander uses this combination of fires and obstacles to support the scheme of maneuver in several ways, including the following:

- Divert the enemy into an engagement area, exposing his flanks when he makes the turn.
- Divert an enemy formation from one avenue of approach to another.
- Deny the enemy the ability to mass forces on a flank of the friendly force.

8-128.   The fire plan should specify how the defending unit will maintain pressure on the enemy throughout the turn as well as identify the task and purpose of the obstacle. In addition, the commander must clearly identify the size of the enemy element to be turned. The turning obstacle is tied into an existing obstacle (severely restricted terrain) at its initial point. The commander may further enhance the effectiveness of the obstacle by using infantry squads to cover it with fires.

Fixing Effects

8-129. Fixing effects use the combination of fires and obstacles to slow or temporarily stop an attacker within a specified area, normally an engagement area. The defending unit can then focus on defeating the enemy, using indirect fires to suppress him in the engagement area while direct fires inflict maximum casualties and

damage. If necessary, the defender can reposition his forces using the additional time gained as a result of fixing the enemy. To fully achieve the fixing effect, these obstacles must be covered by direct and/or indirect fires. The commander must clearly specify the size of enemy unit to be fixed.

Blocking Effects

8-130. Blocking effects use the combination of fires and obstacles to stop an attacker along a specific avenue of approach. Fires employed to achieve blocking effects are primarily oriented on preventing the enemy from maneuvering. Because they require the most extensive engineer effort of any type of obstacle, blocking effects are employed only at critical choke points on the battlefield.

8-131. Blocking obstacles must be anchored on both sides by existing obstacles (severely restricted terrain). They must be covered by direct and/or indirect fires to achieve the full blocking effect. The commander must clearly specify the size of enemy force that he intends to block.

Protective Obstacles

8-132. Companies within the ASA are responsible for coordinating and employing their own protective obstacles to protect their bases. To be most effective, these should be tied into existing obstacles. The DASB/companies may use mines and wire from its basic load or pick up additional assets from the engineer Class IV/V supply point. The DASB/companies may also be responsible for any other required coordination, for recovery of the obstacle, or for its destruction.

8-133. In planning for protective obstacles, the commander must evaluate the potential threat to the base or base cluster position and then employ the appropriate system to counter that threat. For example, MOPMS is predominantly an antitank system best used on mounted avenues of approach, although it does have some antipersonnel applications; on the other hand, wire obstacles may be most effective when employed on dismounted avenues. Field Manual 90-7 provides detailed planning guidance for protective obstacle emplacement.

Obstacle Lanes

8-134. All CSS assets may be responsible for actions related to lanes through obstacles. These duties may include marking lanes in an obstacle, reporting locations of the start and end points of each lane, manning contact points, providing guides for elements passing through the obstacle, and closing the lane.

MILITARY POLICE OPERATIONS

8-135. A military police platoon is usually operating from the ASA. The battlefield missions performed by this platoon may include

battlefield circulation control, area security, operation of the EPW point, and law enforcement.

8-136. Battlefield circulation control is performed along MSRs and in and around 8-the ASA. Military Police use traffic control points, mobile patrols, and temporary road signs to accomplish this mission. Coordination between MPs and the DASB TOC is essential to ensure movement in the area is controlled. Displaced civilian control and coordination with the local government must be included in planning.

8-137. The area security mission of the MPs is vital to rear operations. MPs employed in the brigade rear provide a light, mobile force that can move, shoot, and communicate. Their mobility makes it possible for them to detect the threat as they aggressively patrol road nets and key terrain features throughout the rear area. Their organic communications enable them to advise the rear CP, base clusters, bases, and moving units of impending enemy activity. Military Police may also be used for convoy security and to protect static positions as required. However, when used in this manner, missions, which capitalize on MP mobility, are degraded.

8-138. Military Police conduct collection, evacuation, and internment operations to support their EPW mission. The EPW point holds EPWs captured by brigade units until they can be evacuated to the division central collection point. Field Manual 19-40 covers EPW operations in detail.

8-139. Law and order operations are only performed when the brigade commander requires them and the tactical situation permits. This mission is usually the lowest priority during war.

8-140. The brigade commander sets priority of missions for the MP platoon. However, in some cases the brigade commander will give tasking authority to the DASB commander to support the area security mission and battlefield circulation control aspect of the terrain management mission. The DASB commander must use this asset to maximum advantage. Details on MP platoon operations are in FM 19-4.

ASA LAYOUT

8-141. The location of the ASA and the support battalion is contingent on the tactical situation, terrain in the AO, and security considerations. Location of the COSCOM CSS units and the task force support areas (TFSA) must also be evaluated to ensure that there will be no interruption of corps throughput. The ASA location must be situated close to the MSR. The brigade commander approves the location of the ASA with advice from the DASB commander and the brigade S4.

8-142. The elements located in the ASA vary. The DASB commander and staff will coordinate with the brigade S4 to

determine who will be in the ASA. The list below is a representative example of division elements that could be expected to locate in the ASA:

- DASB TOC.
- Brigade ALOC.
- HSC/GMC/AMC CPs.
- Class I point.
- Water point.
- Class III point.
- Class II, IV, and VII point.
- Ammunition transfer point.
- Salvage collection point.
- Mortuary affairs collection point (MACP).
- Maintenance shops.
- Class IX point.
- Class VIII point.
- Smoke platoon.
- Decontamination platoon.
- Reconnaissance squad.
- Military police platoon.
- EPW collection point.
- Military intelligence team.
- ADA battery (-).
- Forward signal platoon (-).
- Field artillery battalion field trains.
- Aviation elements.

8-143. In addition to these division units, the ASA may include a number of corps elements, such as nondivisional maintenance teams, CEB teams, the field trains for a corps artillery battalion, air or ground medical evacuation elements, armored cavalry regiment, detachment of the finance support unit, or nondivisional engineer units. Information on these may also be available on the division and brigade OPORDs.

8-144. Some of the ASA tenants can be expected to always locate in the ASA, for example the brigade ALOC and the DASB TOC. Others may move in and out of the ASA depending on METT-TC. Examples may be the division military intelligence elements and the decontamination platoon.

8-145. In all cases, the composition of ASA elements will not remain static. The DASB must be able to track and control changes. To accomplish this, all ground units entering the brigade

area must send a representative to report to the brigade ALOC and DASB TOC. They will coordinate movement routes, positioning for units locating in the ASA, communications, support requirements and procedures, and security responsibilities and arrangements. Guards at points of entry into the ASA will direct representatives of entering units to the BCOC S3. Also, base commanders will notify the BCOC of all configured loads arrivals and departures. Movement of displaced civilians and local civilians must also be controlled.

8-146. Not only are changes in the elements located in the ASA occurring, but also changes are constantly taking place within the elements. Medical evacuation elements constantly move in and out of the ASA. Supply elements are involved in resupply efforts. Personnel available for defense actions may be extremely limited within certain bases. Base commanders must keep the BCOC S3 informed of their situations. The DASB commander will designate one of the BCOCs as the alternate TOC for the ASA.

8-147. Locations of elements within the ASA will vary depending on METT-TC. Though the DASB commander and S2/S3 must use their best judgment in positioning units, some general guidelines to be considered include:

- Position the brigade ALOC/DASB TOC near the center of the ASA perimeter for C2 and security reasons.
- Ensure any units such as the artillery, MI, chemical, signal field trains, BSC or FSMC locate their CPs near the rear of their bases, closer to the BCOC to enhance communications and protection of C2 facilities.
- Balance the advantages of dispersion (reduced destruction from a single enemy strike) with the disadvantages (C2 constraints and extended perimeter). In general, though specific situations may dictate otherwise, the ASA can be expected to occupy an area 4 to 7 kilometers in diameter.
- Make supply points accessible to both customers and resupply vehicles and helicopters.
- Keep Class III points away from other supplies to prevent contamination. They should also be located at least 100 feet from water sources.
- Locate the ATP at least 180 meters from other supplies and 620 meters from the nearest inhabited tent.
- Position mortuary affairs and salvage points near the MSR possibly near the ATP to maximize backhaul missions of vehicles used for ammunition supply.
- Locate the Class I point near the water point whenever water sources allow.
- Locate the clearing station away from likely target areas (ATP, class III point, bridges, and road junctions) but near

evacuation routes and an open area for landing air ambulances.

- Locate maintenance sites to be accessible to customers, including recovery/evacuation vehicles.

- Ensure maintenance shops, along with parking and equipment holding sites are on firm ground.

- Position the signal platoon and MP platoon headquarters near the DASB TOC to enhance support and security.

- Position the ATP near the rear of the ASA and near, but off the MSR, so that the large numbers of corps trailers bringing ammunition into the area do not clog up the MSR within the ASA. The ATP requires sufficient area to perform transload operations without interfering with ASA traffic.

- Position units with heaviest firepower, such as the AMC, along the most threatening avenues of approach.

INTERNAL SECURITY

8-148. 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-TC analysis to determine requirements.

- **Detection**. Detection is the early warning of enemy infiltration attempts. Detection devices include day and night observation devices as well as communications, intelligence, radar, and sensor equipment. 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 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. Apprising corps CSS C2 elements and convoys, and direct communication to forward elements of threat warnings and the defensive posture within the Brigade rear area is critical. Warning devices include sirens, pyrotechnics and horns. The MPs may provide the base and base cluster commander's link for detection, early warning, and deployment against enemy attacks in the rear. Information gathered by MP elements dispersed throughout the rear area helps apprise commanders of enemy activity near bases. When the rear operation center (ROC), located in the sustainment cell in the DMAIN, determines the need, MPs respond to bases under attack.

- **Delay**. The defense system must be able to hinder the threat's progress to permit defense forces to react. Obstacles covered by direct or indirect fires slow or canalize movement. The ROC can, with division G3 approval, authorize mine emplacement in the brigade rear. However, ROC must ensure a proposed minefield is coordinated with adjacent, higher, and subordinate units. It must also ensure limitations to friendly maneuver units are minimized and all requirements for reporting, marking, and recording are met.
- **Destruction**. DASB units should place machine guns and lightweight antiarmor weapons to cover obstacles and avenues of approaches. The DASB S3 must have a clear understanding of the defensive capability and key weapons that each tenant unit possesses, as he prepares the ASA layout and security plan. Grenade launchers mounted on vehicles are effective fire suppression systems that can be quickly dispatched to threatened areas. Weapons systems evacuated to the ASA for repair should be used to prevent a breach of the perimeter. Weapon systems to be repaired should be integrated into the defense plan.

8-149. Internal security of the ASA involves all soldiers. The ability to identify the threat and timely reporting to the DASB TOC is the key to survivability in the ASA. The DASB TSOP covers, as a minimum, procedures for the following internal security measures:

- Recon and surveillance plan.
- Dismount point operations.
- Guard post operations.
- Observation post operations.
- Foot patrols.
- Levels of alert.
- Operational security (OPSEC).
- Counterintelligence.
- Standard signals for ASA response.
- Essential elements of information.
- Enemy prisoners of war.
- STAND – to.
- Ready reaction force.

DISMOUNT POINT

8-150. The following checklist is for outgoing vehicles to ensure that our soldiers are prepared for missions. Supervisors will ensure soldiers departing on missions retain this checklist to show gate guards.

_____ ORGANIZATIONAL MAINTENANCE PMCS CERTIFICATION

_____ FULL FUEL TANK

_____ FUEL CANS SECURED

_____ WATER CANS SECURED

_____ EMERGENCY MREs ON BOARD

_____ ENGINE OIL ON HAND

_____ TRANSMISSION FLUID ON HAND

_____ TA-50 TO INCLUDE SLEEPING BAGS ON HAND

_____ INDIVIDUAL WEAPONS, MAGAZINES, AMMO ON HAND

_____ CALL SIGNS AND FREQUENCIES FOR TWO DAYS

_____ CHALLENGE AND PASSWORDS FOR TWO DAYS

CHALLENGE   PASSWORD

1st Day   _____   _____

2nd Day   _____   _____

_____ *COMMS* CHECK WITH CP CONDUCTED

_____ *LATEST* ROAD CONDITIONS PROVIDED

CIRCLE ONE: GREEN   AMBER   RED   BLACK

_____ LATEST ROAD INTELLIGENCE

_____ ROUTE TO TRAVEL/DESTINATION

ROUTE:_____

DESTINATION: _____

_____ SECURITY OF LOAD CHECKED

_____ VEHICLE/TRAILER BUMPER NUMBERS

_____ CAMOUFLAGE SYSTEM ON BOARD

_____ MAP ON BOARD

_____ SEAT BELTS USED

_____ CP AWARE OF VEHICLE DEPARTURE

_____ DATE TIME GROUP OF DEPARTURE_____

Glossary

1SG   First Sergeant

A

AA   Assembly Area

AAFES   Army and Air Force Exchange Service

AAIS   Army Automation Information System

AB   Aviation Brigade

ABCS   Army Battle Command Systems

ABE   Assistant Brigade Engineer

ACK   Acknowledge

AD   Air Defense

ADA   Air Defense Artillery

ADACP   Alcohol and Drug Abuse Prevention Control

ADC   Area Damage Control/Assistant Division Commander

ADO   Air Defense Officer

ADP   Automated Data Processing

AFFS   Army Field Feeding System

AFSP   Army Food Service Program

AGR   Active Guard and Reserve

AI   Area of Interest/Authorized Items

AIMI   Aviation Intensively Managed Items

AIS   Automated Information System

AIT	Automatic Identification Technology
ALOC	Administration and Logistics Center
AM	Amplitude Modulation
AMC	Aviation Maintenance Company/Army Materiel Command/Air Mobility Command
AMC-LSE	Army Materiel Command-Logistics Support Element
AMEDD	Army Medical Department
AMO	Automation Office
AMSS	Army Materiel Status System
AO	Area of Operations
AOAP	Army Oil Analysis Program
AOE	Army of Excellence
AOR	Area of Responsibility
APO	Advance Planning and Optimization
AR	Army Regulation/Armor
ARNG	Army National Guard
ASA	Aviation Support Area
ASAS	All Source Analysis System
ASAS-RWS	All Source Analysis System-Remote Work Station
ASCC/ARFOR	Army Service Component Commander/Army Forces Commander
ASL	Authorized Stockage List
ASMC	Area Support Maintenance Company
ASP	Ammunition Supply Point
ASWBL	Armed Services Whole Blood Processing Laboratory
ATCCS	Army Tactical Command and Control System
ATM	Advanced Trauma Management

ATP	Ammunition Transfer Point
AUEL	Automated Unit Equipment List
AVIM	Aviation Intermediate Maintenance
AVUM	Aviation Unit Maintenance
AXP	Ambulance Exchange Point

B

B	Bulk
BAS	Battalion Aid Station
BCC	Battlefield Circulation and Control
BCOC	Base Cluster Operations Center
BCT	Brigade Cavalry Troop
BD	Battlefield Distribution
BDA	Battle Damage Assessment
BDAR	Battle Damage Assessment and Repair
BDE	Brigade
BDR	Battle Damage Repair
BF	Battle Fatigue
BFSA	Brigade Forward Support Area
BFVS	Bradley Fighting Vehicle System
BII	Basic Issue Items
BIT	Built-In Test
BITE	Built-In Test Equipment
BLAST	Blocked Asynchronous Transmission
BN	Battalion
BOS	Battlefield Operating System

BRIL	Baseline Resource Item List
BSA	Brigade Support Area
BSC	Brigade Support Company
BSS	Brigade Surgeon Section

C

C2	Command and Control
C3	Command, Control, and Communications
C4ISR	Command, Control, Communications, Computer, Intelligence, Surveillance, and Reconnaissance
CA	Civil Affairs
CASI/NES	CSS Automated Information Management Interface/Network Encryption System
CANTCO	Can't Comply
CAS	Close Air Support
CCI	Controlled Cryptographic Items
CCIR	Commander's Critical Information Requirements
CCL	Combat Configured Load
CDR	Commander
CD-ROM	Compact Disc-Read Only Memory
CE	Communications-Electronics
CEB	Clothing Exchange and Bath
CFS	Call for Support
CHE	Container Handling Equipment
CHL	Combat Health Logistics
CHS	Combat Health Support
CHU	Container Handling Unit

CMCC	Corps Movement Control Center
CMMC	Corps Materiel Management Center
CMT	Combat Medical Team, Contact Maintenance Truck
CNR	Combat Net Radios
CO	Company
COAs	Courses of Actions
COE	Common Operating Environment
COMSEC	Communications Security
C of S	Chief of Staff
CONOPS	Continuity of Operations/Contingency Operations
CONUS	Continental United States
COSCOM	Corps Support Command
COTS	Commercial Off the Shelf
CP	Command Post
CRC	Central Reporting Center/Control and Reporting Center
CROP	Containerized Roll-In/Roll-out Platform
CSST	Cavalry Systems Support Team
CULT	Common Use Land Transportation

D

DA	Department of the Army
DA DCSPER	Department of the Army Deputy Chief of Staff for Personnel
DAMMS-R	Department of the Army Movement Management System-Revised
DAO	Division Ammunition Officer
DA PAM	Department of the Army Pamphlet
DASB	Division Aviation Support Battalion

DISCOM	Division Support Command
DIT	Digital Interactive Training
DIVARTY	Division Artillery
DMAIN	Division Main
DMC	Distribution Management Center
DMLSS	Division Medical Logistics Standard Support
DMMC	Division Materiel Management Center
DMOC	Division Medical Operations Center
DNBI	Disease, Non-battle Injury
DNVT	Digital, Non-secure Voice Telephone
DOD	Department of Defense
DODAAC	Department of Defense Activity Address Code
DODAC	Department of Defense Ammunition Code
DODIC	Department of Defense Identification Code
DPD	Deployed Personnel Database
DS	Direct Support
DSA	Division Support Area
DSB	Division Support Battalion
DSESTS	Direct Support Electrical System Test Set
DSS	Division Surgeon Section
DSMC	Division Support Medical Company
DSVT	Digital, Secure Voice Telephone
DTG	Date Time Group
DTO	Division Transportation Officer
DTSS	Digital Topographic Support System

DVE	Driver Vision Enhancer
DZ	Drop Zone

E

EAB	Echelons Above Brigade
EAC	Echelons Above Corps
EAD	Echelons Above Division
ECB	Echelons Corps and Below
ECCM	Electronic Counter-Counter Measures
EEFI	Essential Elements of Friendly Information
EEI	Essential Elements of Information
EMT	Emergency Medical Treatment
EO	Equal Opportunity
EOD	Explosive Ordnance Disposal
EOH	Equipment on Hand
EPLRS	Enhanced Position Location Reporting System
EPW	Enemy Prisoner of War
ESE	Engineer Support Element
EST	Engineer Support Team
ETA	Estimated Time of Arrival
ETM	Electronic Tech Manual
EW	Electronic Warfare

F

FA	Field Artillery
FAAD	Forward Area Air Defense
FARP	Forward Arming and Refueling Point

FAS	Forward Aid Station
FBCB2	Force XXI Battle Command Brigade & Below System
FDRP	First Destination Reporting Point
F & E	Fuel & Electrical
FFIR	Friendly Forces Information Requirement
FLE	Forward Logistics Element
FM	Field Manual, Frequency Modulation
FMC	Fully Mission Capable
FPF	Final Protective Fires
FPL	Final Protective Line
FRAGO	Fragmentary Order
FRCP	Flatrack Collection Point
FRS	Forward Repair System
FS	Fire Support
FSB	Forward Support Battalion
FSC	Forward Support Company
FSMC	Forward Support Medical Company
FSO	Fire Support Officer
FSSP	Fuel System Supply Point
FST	Forward Surgical Team
FUPP	Full-Up Power Pack

G

GCCS-A	Global Command and Control System-Army
GCSS-ARMY	Global Combat Support System-Army
GMC	Ground Maintenance Company

GMLR	Guided Missile & Large Rockets
GOTS	Government off the Shelf
GPS	Global Positioning System
GS	General Support
GSE	Ground Support Equipment
GTN	Global Traffic Network

<div align="center">H</div>

HAVECO	Have Complied
HAZMAT	Hazardous Materiel
HCP	Health Care Package
HDC	Headquarters and Distribution Company
HE	High Explosive
HEMTT	Heavy Expanded Mobility Tactical Truck
HERCULES	Heavy Equipment Recovery Combat Utility Lift and Evacuation System
HET	Heavy Equipment Transporter
HF	High Frequency
HHC	Headquarters and Headquarters Company
HHD	Headquarters and Headquarters Detachment
HMMWV	High Mobility Multipurpose Wheeled Vehicle
HNS	Host Nation Support
HQ	Headquarters
HSC	Headquarters and Supply Company
HSMO	Health Service Materiel Officer
HSSO	Health Service Support Officer
HTARS	Hot Tactical Aircraft Refueling System

hvy	Heavy
HZ	Hertz

I

IAW	In Accordance With
IETM	Interactive Electronic Technical Manual
IEW	Intelligence and Electronic Warfare
IFTE	Integrated Family of Test Equipment
IFV	Infantry Fighting Vehicle
IHFR	Improved High Frequency Radio
INMARSAT	International Maritime Satellite Telephone
INTSUM	Intelligence Summary
IPB	Intelligence Preparation of the Battlefield
ISO	International Standardization Organization
ITO	Installation Transportation Office
ITV	In Transit Visibility

J

JP-8	Jet Propulsion Fuel, Type 8

K

KCLFF	Kitchen Combat Level Field Feeding
KHZ	Kilohertz
KIA	Killed In Action
KW	Kilowatt

L

LAN	Local Area Network
LAR	Logistical Assistance Representative

LCMS	Land Combat Missile System
LEN	Large Extension Node
LHS	Load Handling System
LIN	Line Item Number
LMTV	Light/Medium Tactical Vehicles
LNO	Liaison Officer
LOC	Line of Communication
LOD	Line Of Duty
LOGCAP	Logistics Civil Augmentation Program
LOGPAC	Logistics Package
LOGSA	Logistics Situation Awareness/Logistics Support Agency
LOGSITREP	Logistics Situation Report
LOS	Line of Sight
LPB	Logistics Preparation of the Battlefield
LPXMED	Logistics Processor External-Medical Module
LRP	Logistics Release Point
LRU	Line Replaceable Unit
LTF	Logistics Task Force
LTO	Logistics Task Order
LZ	Landing Zone

M

MA	Mortuary Affairs
MACOM	Major Command
MACP	Mortuary Affairs Collection Point
MAS	Main Aid Station

MC	Movement Control
MC4	Medical Communications for Combat Casualty Care
MCL	Mission Configured Load
MCM	Multi-Capable Maintainer
MCO	Movement Control Office
MCOO	Modified Combined Obstacle Overlay
MCS	Maintenance Control Section, Maneuver Control System, Master Control Station, Maintenance Control Supervisor
MCSR	Mission Condition Status Report
MCT	Movement Control Team
MEDEVAC	Medical Evacuation
MEDLOG-D	Medical Logistics-Division
MES	Medical Equipment Set
METL	Mission Essential Task List
METT-TC	Mission, Enemy, Terrain, Troops, Time Available, and Civilian
MH	Mental Health
MHE	Materials Handling Equipment
MHZ	Megahertz
MI	Military Intelligence
MIG	Metal Inert Gas (Welding)
MIA	Missing In Action
MILVAN	Military Van
MKT	Mobile Kitchen Trailer
MLRS	Multiple Launch Rocket System
MMMB	Medical Materiel Management Branch
MOPMS	Modular Packed Mine System

MOPP	Mission Oriented Protection Posture
MOS	Military Occupation Specialty
MP	Military Police
MPL	Mandatory Parts List
MRE	Meal, Ready To Eat
MRM	Maintenance Reporting and Management
MRO	Materiel Release Order
MSE	Mobile Subscriber Equipment
MSR	Main Supply Route
MSRT	Mobile Secure Radio Telephone Terminal
MST	Maintenance Support Team
MTF	Medical Treatment Facility
MTOE	Modified Table of Organization and Equipment
MTS	Movement Tracking System
MTV	Medium Tactical Vehicles
MWR	Morale, Welfare, and Recreation

N

NAI	Named Area of Interest
NATO	North Atlantic Treaty Organization
NBC	Nuclear, Biological, Chemical
NC	Node Center
NCO	Noncommissioned Officer
NCS	Net Control Station
NGO	Non-government organizations
NIMA	National Imagery and Mapping Agency

NLT	No Later Than
NMC	Non Mission Capable
NRTS	Not Repairable This Station
NRT	Near Real Time
NSL	Non-stockage List
NSN	National Stock Number

O

OCIE	Organizational Clothing and Individual Equipment
OCOKA	Observation, Concealment and Cover, Obstacles, Key Terrain, and Avenues of Approach
OEG	Operational Exposure Guidance
OP	Observation Post
OPCON	Operational Control
OPLAN	Operation Plan
OPLOGPLAN	Operations Logistics Plan
OPORD	Operations Order
OPSEC	Operations Security
OPTEMPO	Operational Tempo
ORGWON	Organization Work Order Number
OST	Order Ship Time

P

P	Package
P & A	Personnel and Administration
PA	Physician Assistant
PAM	Pamphlet
PARC	Principle Assistant Responsible for Contracting

PASR	Personnel Accounting and Strength Reporting
PBO	Property Book Officer
PDF	Protective Defensive Fires
PERSITREP	Personnel Situation Report
PIR	Priority of Information Requirements
PL	Phase line
PLL	Prescribed load list
PLS-E	Palletized Load System-Enhanced
PM	Provost Marshall/Program Manager
PMCS	Preventive Maintenance Checks and Services
PMM	Preventative Medicine Measures
POC	Point of Contact
POD	Port of Debarkation
POE	Port of Embarkation
POL	Petroleum, Oils and Lubricants
POM	Preparation for Overseas Movement
PSD	Personnel Service Detachment
PSG	Platoon Sergeant
PSS	Personnel Service Support
PUMA	Pocket Unit Maintenance Aid
PVNTMED	Preventive Medicine
PVO	Private Volunteer Organization

Q

QC	Quality Control
QM	Quartermaster

QRF	Quick Reaction Force

R

R&S	Reconnaissance and Surveillance
RASP	Reserve Associate Support Program
RC	Reserve Components
RDD	Required Delivery Date
RECON	Reconnaissance
ROC	Rear Operations Cell
RF	Reaction Force/Radio Frequency
RFID	Radio Frequency Identification Tag
ROE	Rules of Engagement
ROM	Refuel on the Move
RP	Release Point
RS	Religious Support
RSOI	Reception, Staging, Onward Movement, and Integration
RSR	Required Supply Rate
RSSP	Ration Supplement/Sundries Pack
RTD	Return to Duty
RX	Reparable Exchange

S

S1	Adjutant (US Army)
S2	Intelligence Officer (US Army)
S3	Operations, Plans, Security, and Training Officer (US Army)
S4	Supply Officer (US Army)
S6	Communications Officer

S&S	Supply and Services
S&T	Supply and Transport
SA	Situational Awareness
SAAS-MOD	Standard Army Ammunition System-Modernized
SALUTE	Size, Activity, Location, Unit, Time, Equipment
SAMS	Standard Army Maintenance System
SARSS-O	Standard Army Retail Supply System –Objective
SATCOM	Satellite Communications
SCL	Strategic Configured Load
SEAD	Suppression of Enemy Air Defense
SEN	Small Extension Node
SHORAD	Short Range Air Defense
SIDPERS	Standard Installation/Division Personnel System
SINCGARS	Single-Channel Ground and Airborne Radio System
SIP	Systems Improvement Program
SJA	Staff Judge Advocate
SO	Special Operations
SOI	Signal Operation Instructions
SOP	Standing Operating Procedure
SP	Start point
SMFT	Semi-Trailer Mounted Fabric Tank
SPBS-R	Standard Property Book System-Revised
SPORT	Soldier Portable-System Repair Tool
SPT OPS	Support Operations
SRC	Standard Requirement Code

SRP	Soldier Readiness Processing
SSA	Supply Support Activity
SST	System Support Team
STAMIS	Standard Army Management Information System
STANAG	Standardization NATO Agreement '
STE	Simplified Test Equipment
STE ICE	Simplified Test Equipment/Internal Combustion Engine
STON	Short Ton

<div align="center">T</div>

TAA	Tactical Assembly Area
TACAIR	Tactical Air
TACCS	Tactical Army Combat Service Support Computer System
TACSAT	Tactical Satellite
TAMMIS-D	Theater Army Medical Management Information System-Division
TAMMS	The Army Maintenance Management System
TAV	Total Asset Visibility
TB	Technical Bulletin
TC	Training Circular/Tank Commander
TC-ACCIS	Transportation Coordinator's-Automated Command and Control Information System
TC-AIMS II	Transportation Coordinator's- Automated Information for Movements Systems II
TCF	Tactical Combat Force
TCMD	Transportation Control and Movements Document
TCN	Transportation Control Number
TCP	Traffic Control Point

TDA	Table of Distribution and Allowances
TDD	Time Definite Delivery
TED	Turbine Engine Diagnostic
TF	Task Force
TFE	Tactical Field Exchange
TFM	Tactical Field Maintenance
TFSA	Task Force Support Area
TI	Tactical Internet
TIGER	Tactical Interactive Ground Equipment Repair
TM	Technical Manual/Team
TMDE	Test, Measurement, and Diagnostic Equipment
TMEP	Theater Mortuary Evacuation Point
TMIP	Theater Medical Information Program
TMT	Transportation Motor Transport; Treatment Team
TMTC	Transportation Motor Transport Company
TO	Task Order
TOC	Tactical Operations Center
TOE	Table of Organization and Equipment
TOW	Tube-launched, Optically Tracked, Wire-guided
TPS	Tactical Personnel System
TPU	Troop Program Unit
TQG	Tactical Quiet Generator
TRADOC	Training and Doctrine Command
TRP	Target Reference Point
TSC	Theater Support Command

TSOP	Tactical Standing Operating Procedure
TTP	Tactics, Techniques, and Procedures
TWV	Tactical Wheeled Vehicles

U

UAV	Unmanned Aerial Vehicle
UCL	Unit Configured Load/Unit Commander's Report
UGR-A	Unitized Group Ration-A
ULLS-(A/G/S-4)	Unit Level Logistics System- (Air/Ground/Logistics)
UCMJ	Uniform Code of Military Justice
UMCP	Unit Maintenance Collection Point
UMO	Unit Movement Officer
UMT	Unit Ministry Team/Unit Maintenance Technician
UN	United Nations
US	United States
USACASCOM	United States Army Combined Arms Support Command
USAF	United States Air Force
USAR	United States Army Reserve
UTO	Unit Task Organization

V

VHF	Very High Frequency

W

W	Watt
WIA	Wounded In Action
WILCO	Will Comply
WIN	Warfighter Information Network

WSM   Weapon System Manager

WSRO   Weapon System Replacement Operations

X

XO   Executive Officer

Bibliography

AR 40-61. Medical Logistics Policies and Procedures.

AR 220-1. Unit Status Reporting.

AR 220-10. Preparation for Overseas Movement of Units.

AR 700-138. Army Logistics Readiness and Sustainability.

AR 710-2. Supply Policy Below the Wholesale Level.

AR 725-50. Requisitioning, Receipt, and Issue System.

AR 735-5. Policies and Procedures for Property Accountability.

AR 750-1. Army Materiel Maintenance Policies.

DA Pam 600-8. Military Personnel Management and Administrative Procedures.

DA Pam 600-8-1. SIDPERS Unit Level Procedures.

DA Pam 710-2-1. Using Unit Supply System (Manual Procedures).

DA Pam 710-2-2. Supply Support Activity Supply System: Manual Procedures.

DA Pam 738-750. The Army Maintenance Management System (TAMMS).

FM 3-04.111   (1-111). Aviation Brigade.

FM 3-04.112   (1-112). Attack Helicopter Battalion.

FM 3-04.500   (1-500). Army Aviation Maintenance.

FM 3-11.3   (3-3).   Chemical and Biological Contamination Avoidance.

FM 3011.33   (3-3-1). Nuclear Contamination Avoidance

FM 3-11.5   (3-5).   NBC Decontamination.

FM 3-11   (3-100). NBC Operations.

FM 3-34   (5-100). Engineer Operations.

FM 5-101. Mobility.

FM 5-102. Countermobility.

FM 3-34.103   (5-103). Survivability.

FM 34-09.30   (6-30).   Tactics, Techniques, and Procedures for Observed Fire
    Procedures.

FM 4-02   (8-10).   Health Service Support in a Theater of Operations.

FM 4-02.20   (8-10-1). Tactics, Techniques, and Procedures for the Medical Company.

FM 4-02.93   (8-10-5).   Brigade and Division Surgeons' Handbook, Tactics, Techniques,
    and Procedures.

FM 4-02.7   (8-10-7). Health Service Support in a Nuclear, Biological, and Chemical
    Environment.

FM 4-02.1   (8-10-9). Combat Health Logistics in a Theater of Operations, Tactics, Techniques, and Procedures.

FM 4-02.24   (8-10-24). Area Support Medical Battalion Tactics, Techniques, and Procedures.

FM 4-02.55   (8-55).   Planning For Health Service Support.

FM 4-02.285 (8-285).   Treatment of Chemical Agent Casualties and Conventional Military Chemical Injuries.

FM 4-30.1   (9-6).   Ammunition Service in the Theater of Operations.

FM 10-5. Basic Doctrine Manual for Supply Storage.

FM 4-20.2   (10-23).   Basic Doctrine for Army Field Feeding and Class I Operations Management.

FM 4-20.64   (10-64).   Mortuary Affairs Operations.

FM 4-03   (10-67).   Petroleum Supply in Theaters of Operations.

FM 4-20.198 (10-450-4).Multiservice Helicopter Sling Load Single-Point Rigging Procedures.

FM 6-02.50   (11-50).   Combat Communications Within the Division.

FM 1-0   (12-6).   Personnel Doctrine.

FM 1-05   (16-1).   Religious Support.

FM 3-19.4   (19-4).   Military Police Battlefield Circulation Control, Area Security, and Enemy Prisoners of War Operation.

FM 3-19.40 (19-40).   Enemy Prisoners of War, Civilian Internees and Detained Persons.

FM 3-24.3   (20-3).   Camouflage.

FM 4-25.10 (21-10).   Unit Field Sanitation Team.

FM 4-25.11 (21-11).   First Aid for Soldiers.

FM 22-9. Soldier Performance in Continuous Operations.

FM 24-7. Army Battle Command System(AMCS) Systems Management Techniques.

FM 2-01.3   (34-130). Intelligence Preparation of the Battlefield.

FM 3-01.8   (44-8).   Small Unit Self-Defense Against Air Attack.

FM 4-93.30 (54-30).   Corps Support Groups.

FM 4-93.40   (54-40).   Area Support Group.

FM 4-01.3   (55-10). Movement Control in a Theater of Operations.

FM 4-93.2   (63-2).   Division Support Command, Armored, Infantry, and Mechanized Infantry Divisions.

FM 4-93.4   (63-4).   Theater Support Command (TSC).

FM 4-93.20   (63-20). Forward Support Battalion.

FM 4-93.21   (63-21). Main Support Battalion.

FM 4-93.23   (63-23). Aviation Support Battalion.

FM 4-93.3   (63-3).   Corps Support Command.

FM 3-91.1   (71-1).   The Tank and Mechanized Infantry Company Team.

FM 3-91.2   (71-2).   The Tank and Mechanized Infantry Battalion Task Force.

FM 3-91.3   (71-3).   Armored and Mechanized Infantry Brigade.

FM 3-100.71 (71-100). Division Operations.

FM 3-0   (100-5).   Operations.

FM 4-100.9 (100-9).   Reconstitution.

FM 4-0   (100-10). Combat Service Support.

FM 4-100.0 (100-10-1).Theater Disrtribution.

FM 4-100.2 (100-10-2).Contractors on the Battlefield.

FM 3-100.14 (100-14). Risk Management.

FM 3-35   (100-17).   Mobilization, Deployment, Redeployment, Demobilization.

FM 5-20   (101-5).   Army Planning and Orders Production.

FM 6-99   (101-5)   Staff Organization.

FM 6-99.1   (101-5-1). Operational Terms and Symbols.

TC 12-17. Adjutant's Call/The S1 Handbook.

TRADOC Pam 525-5. Force XXI Operations.

TRADOC Pam 525-50. Operational Concept for Health Support.

TRADOC Pam 525-53. Operational Concept Combat Service Support.

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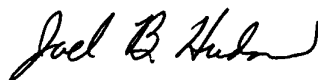
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