ATTP 4-0.1 (FM 100-10-1)

Army Theater Distribution

May 2011

Headquarters, Department of the Army

This publication is available at
Army Knowledge Online (www.us.army.mil) and
General Dennis J. Reimer Training and Doctrine
Digital Library at (www.train.army.mil).

Army Tactics, Techniques, and Procedures
No. 4-0.1 (FM 100-10-1)

Headquarters
Department of the Army
Washington, D.C., 20 May 2011

Army Theater Distribution

Contents

***This publication supersedes FM 100-10-1, dated 1 October 1999.**

Figures

Preface

The purpose of this manual is to provide the authoritative doctrine for Army theater distribution in support of operations across the full spectrum operations. This manual describes the Army distribution system, organization, structure, and operational processes within a theater. It provides doctrinal guidance for units with distribution responsibilities, operations, and the in-transit visibility (ITV) tracking and monitoring processes for moving personnel and materiel in theater. These topics are addressed as they pertain to geographic combatant commanders (GCC), logisticians at all levels, staff, and students who may require knowledge on Army, joint and multinational theater-level distribution. This manual also provides the basis for theater distribution system training, organizational, and materiel development. The target audience is logistics managers and planners operating external and internal in the theater of operations. It is doctrine for the units and commands that provide strategic and in-theater distribution, as well as the units supported by those organizations.

It supports deployment doctrine and focuses on current Army distribution processes. Commands should adapt the doctrine in this manual to fit existing organizational structures.

Current operations have demonstrated that Army forces can rapidly deploy units and materiel into an area of operations. These units require the proper sustainment to win the Nation's wars. Distribution is the key to delivering the sustainment to forces in the field. Theater distribution covers how the Army supports its forces as well as other requirements. Theater distribution requires focused Army organizations whose mission is to deliver the right stuff in the right quantity to the right place within the right time. To accomplish this task, the theater must have efficient distribution management, enhanced in-transit visibility and capable sustainment units.

These Army tactics, techniques, and procedures apply to the Active Army, the Army National Guard/Army National Guard of the United States, and the United States Army Reserve unless otherwise stated.

The proponent for this manual is the United States Army Training and Doctrine Command. The preparing agency is the United States Army Combined Arms Support Command (USACASCOM). Send comments and recommendations on the Department of the Army (DA) Form 2028 (*Recommended Changes to Publications and Blank Forms*) to leeecascomdoctrine@conus.army.mil, or by mail to Commanding General, USACASCOM, ATTN: Training and Doctrine, 2221 Adams Avenue, Fort Lee, Virginia 23801-1809.

This page intentionally left blank.

Chapter 1
Theater Distribution

Army theater distribution consists of organizations and processes for providing materiel to Army forces, other Services, and multinational partners across a theater of operation. This chapter covers the definitions and principles of theater distribution. It also discusses the networks required to conduct theater distribution.

1-1. Distribution is the critical element of sustainment which builds and maintains combat power and provides the Army its operational reach. It is the integration of the logistics functions of transportation and supply: and is dependent on movement control and materiel management. It enables support to multiple areas of operations (AO) within a theater. Distribution falls under the sustainment warfighting function and is covered in FM 4-0, *Sustainment.* It encompasses the movement of personnel, cargo, and equipment in support of full-spectrum operations. For this manual, the movement of personnel and equipment does not imply the movement of forces (deployment, employment and redeployment). The movements of forces falls under the movement and maneuver warfighting function and is covered in FM 3-35, *Army Deployment and Redeployment*.

1-2. Logistics planners, materiel managers, and movement control personnel play a crucial role in synchronizing, coordinating and executing distribution operations. Through their coordinated efforts, all elements of sustainment are distributed to support operations across the theater. Additionally, these professionals plan and coordinate distribution operations with their joint and multinational partners. By meeting these requirements, the JFC is assured of force readiness, operational reach, and mission accomplishment. To begin understanding distribution, you must understand the following definitions.

DISTRIBUTION DEFINITIONS

1-3. **Distribution is the operational process of synchronizing all elements of the logistics system to deliver the right things to the right place at the right time to support the combatant commander**. It also delivers the 'right quantity' as determined by logisticians in synchronization with operational commanders and mission of the force. The distribution system is a combination of four networks (physical, financial, information, and communication) that must be managed and synchronized and tailored to meet the theater requirements across an area of operations. Synchronization of the distribution processes are coordinated and directed by distribution managers at each level of war. These managers use a host of information systems that link the networks to ensure materiel moves according to priority from source to the requesting unit. These networks utilize global, commercial, or military distribution capability as well as host nation (HN) infrastructure.

1-4. Army theater distribution is the flow of equipment and materiel within theater to meet the GCC missions. TD is the geographical combatant commander's (GCC's) segment of the global distribution system. The Army theater segment begins from the ports of debarkation (PODs) or theater source of supply and ends at the unit. Depending on the operation, materiel may enter the theater by land via truck and rail, by air, or by sea using fixed port or logistics over-the-shore operations (immature theater). Combinations of U.S. military, multinational, and contractor organizations operate the various transportation nodes/hubs/modes and supply nodes that enable distribution of sustainment materiel.

1-5. **Theater distribution management is optimizing the distribution networks to achieve the effective and efficient flow of personnel, equipment, and materiel to meet the combatant commander's requirements.** Commanders and logisticians manage distribution by synchronizing the four distribution networks (physical, financial, information, and communications) and applying the principles of sustainment.

PRINCIPLES OF SUSTAINMENT AS THEY RELATE TO DISTRIBUTION

- Integration. Integration is joining all of the elements of sustainment to operations assuring unity of purpose and effort. The distribution managers must be linked to all elements of the distribution system, across all levels of war. They must integrate Army theater distribution with joint global distribution to ensure a consistent and orchestrated flow of personnel and materiel across the entire distribution pipeline. Distribution managers must also integrate all elements of distribution to ongoing operations to ensure operational commanders are equipped and sustained to conduct continuous operations. These distribution networks must be considered in the operational effort and are a vital aspect of the distribution process. They are discussed in detail later in this chapter.
- Anticipation. Anticipation is the ability to foresee events and requirements and initiate necessary actions that most appropriately satisfy a response. Distribution managers are best able to anticipate requirements by ensuring they maintain a situational awareness and situational understanding of the operational environment. Their ability to foresee requirements is also based on knowing the operational conditions, monitoring and tracking materiel usage, knowing what is available, and directing resources before they are requested.
- Responsiveness. Responsiveness is the ability to meet changing requirements on short notice and to rapidly sustain efforts in meeting changing circumstances over time. For the distribution manager, responsiveness is linked to maintaining asset and in-transit visibility of materiel as well as situational understanding of the operational environment.
- Simplicity. Simplicity strives to minimize the complexity of sustainment. Unnecessary complications of processes and procedures impact the efficiency of the distribution system. While there are many parts to the distribution process, distribution managers should make every effort to eliminate unnecessary steps, including multiple handling and trans-loading. The distribution plan must have clarity in purpose and process to avoid confusion.
- Economy. Economy means providing sustainment resources in an efficient manner to enable a commander to employ all assets to generate the greatest effort possible. For example, distribution managers may look to contract carriers to move less critical items while moving the more critical and mission essential items on military assets.
- Survivability. Survivability is the ability to protect personnel, information, infrastructure, and assets from destruction or degradation. Distribution managers should use all tools and resources available to plan and execute distribution to ensure survivability. Distribution managers must coordinate vertically and horizontally to acquire intelligence information, route security, and other resources to protect distribution operations.
- Continuity. Continuity is the uninterrupted provision of sustainment across all levels of war. Distribution managers must be diligent in ensuring materiel flow smoothly and continuously through the distribution pipeline. Distribution managers look for ways to prevent log jams and methods to get the right things at the right place and time.
- Improvisation. Improvisation is the ability to adapt sustainment operations to unexpected situations or circumstances affecting a mission. In short, distribution managers should look for any means necessary to deliver to the commander the things needed to successfully accomplish the mission.

PRINCIPLES OF THEATER DISTRIBUTION

1-6. The principles of distribution include centralized management, optimized infrastructure; maximized throughput; minimized handling; rapid and precise response; continuous, seamless, two-way flow of resources; and time definite delivery. All of these principles rely upon solid property accountability as a leadership function. Property accountability gives the visibility needed to make distribution possible. Commanders, logistics planners, and distribution managers must understand each of these principles and consider how they are applied when developing strategic, operational, and tactical plans.

CENTRALIZED MANAGEMENT

1-7. Centralizing management of the theater distribution system ensures a unity of effort between the supply and transportation systems that are essential to efficient and effective distribution operations. A most important aspect of centralizing theater distribution is designating who is in charge. The deployment and distribution operations center (DDOC), which is an element of United States Transportation Command (USTRANSCOM), provides centralized management of distribution across the strategic level. It provides the GCC's joint deployment and distribution operations center (JDDOC) with centralized management of critical information concerning sustainment movement through the strategic to theater pipeline. The Distribution Management Center (DMC) of the Theater Sustainment Command (TSC) and the Expeditionary Sustainment Command (ESC) provide centralized management of the distribution system across the theater (operational to tactical). The JDDOC interacts with the TSC/ESC DMC to provide the information needed to coordinate and synchronize the theater distribution pipeline. The JDDOC may be colocated with the TSC/ESC DMC to effectively provide and synchronize the distribution pipeline from source to point of need. Fundamental to centralized management are the elements control, visibility, and capacity.

Control

1-8. Control of the distribution system is the focal point of centralized management. The distribution manager exercises control through the identification of shipments and the monitoring of their location as shipments move through the distribution system. The DMC located within the TSC/ESC controls the movement of resources in accordance with the commander's intent.

Visibility

1-9. Visibility is the tracking of forces and commodities moving within the distribution system. It provides commanders with a positive control over the flow of materiel, including arrival and departure of unit personnel, equipment, and all cargo at all nodes, from origin to destination on all modes. It allows distribution managers to influence the flow of distribution based on the following mission variables (mission, enemy, terrain and weather, troops and support available, time available and civil considerations [METT-TC]). Visibility begins when distribution managers establish accountability for materiel entering the distribution system. Accountability of materiel must be established at all nodes along the distribution system and before it is passed to the next. Visibility is provided through an integrated network of logistic systems that allow commanders at each level to make critical distribution decisions. It enables managers to match materiel to resources and coordinate the delivery. The four categories of visibility are—

- In-process. Visibility of assets being procured or repaired.
- In-storage. Visibility of the types, quantity, and location of assets in storage.
- In-transit. Visibility of the location Department of Defense (DOD) unit and non-unit cargo, passengers, patients, and lift assets from origin to destination, in peacetime, contingencies, and war. Information must be accurately captured and subsequently entered into the information network.
- In-theater. Visibility of items and resources after arrival at the POD or land border gateway or beach to the user in a theater. Visibility may become more difficult due to limited infrastructure and sophistication of communications and information network.

Capacity

1-10. **Capacity is the measure of personnel and materiel that can move through the distribution system and the capability of the infrastructure to support a two-way flow of forces and materiel.** The theater's infrastructure (roadways, sea and aerial ports, warehouses, etc) will determine the capacity of its distribution system and logistics support framework. Availability of transportation assets, material handling equipment (MHE), air, ground transportation and watercraft determines the capacity of the distribution system to deliver and accept materiel. Distribution managers anticipate disruptions and shortfalls to the distribution system. They integrate the full range of information capabilities into their planning and control and allocate resources to optimize theater's distribution capacity.

OPTIMIZED INFRASTRUCTURE

1-11. Optimizing the theater infrastructure (roads, railways, waterways, structures, seaports, airports and open staging areas, other structures, distribution nodes, and warehouses) means synchronizing the movement of forces and materiel moving over or through the existing infrastructure. In optimizing infrastructure planners must maintain a balance between distribution capability and the infrastructure capacity to support operations. The available vehicles (air, ground, and watercraft), sustainment units and personnel (Army and contractor), and assets (physical and organizational) affect distribution system optimization. This allows distribution managers to divert, reallocate, or acquire physical capabilities to meet changing operational, environmental, and location requirements.

MAXIMIZED THROUGHPUT

1-12. **Throughput is defined as bypassing one or more nodes in the distribution system to minimize handling and increase speed of delivery.** An efficient distribution system maximizes tonnage, minimizes handling, and improves velocity using containerization, pallets and flatracks. Velocity is achieved by the throughput of commodities from the sustaining base to tactical-level support organizations. The delivery of requested materiel and personnel to forces on the move requires integrated communications and tracking.

MINIMIZED HANDLING

1-13. This principle stipulates that the theater distribution system deliver sustainment with minimal handling. Logistic planners should anticipate points of congestion and look for ways to minimize the handling of materiel. The distribution system should be designed to focus on minimal handling of sustainment.

RAPID AND PRECISE RESPONSE

1-14. **Rapid and precise response is the ability to meet requirements of the constantly changing operational environment.** This includes meeting the customer's minimal requirements without disrupting mission-essential operations. The effectiveness of distribution can be measured by assessing the following attributes, or key performance indicators:

(a) Speed is at the core of responsiveness. Speed does not mean everything moves at the same rate or fastest rate, but everything moves according to priority at the rate that produces the most effective support to the force.

(b) Reliability is reflected in the dependability of the global providers to deliver required support when promised. Reliability is characterized by a high degree of predictability, or time-definite delivery of support.

(c) Efficiency is directly related to the amount of resources required to deliver a specific outcome. In the tactical and operational environments, inefficiency increases the logistic footprint and increases personnel protection requirements and risk.

CONTINUOUS, SEAMLESS, TWO-WAY FLOW OF RESOURCES

1-15. The principle of continuous and seamless pipeline two-way flow of resources describes the flow sustainment materiel and retrograde cargo between the strategic, operational, and tactical levels. It ensures transportation assets are maximized in the delivery of sustainment and in support of retrograde and redeployment activities. It provides that all nodes and modes are operating effectively. To accomplish this, logistics operators and planners continuously monitor the distribution system and make adjustments as required. Logistics operators provide valuable feedback on distribution system operations and provide insight to planners as to what is happening on the ground. A robust communications network between the strategic, operational and tactical level is necessary to provide the connectivity required to ensure the two-way flow of resources.

TIME-DEFINITE DELIVERY (TDD)

1-16. **Time-definite delivery is the consistent delivery of requested logistic support at a time and specified destination.** Time definite delivery is ensuring commanders receive the right materiel at the required location, in the right quantity, and within the required timeframe. It is based on the distribution managers and logistic planners anticipating needs to support operational requirements. To achieve TDD, logistic planners must link materiel to those available resources that will deliver them within the required time. Time definite delivery reinforces commander's confidence in the ability of the logistic system to support operational requirements and eliminate the need for stockpiled materiel.

ARMY THEATER DISTRIBUTION NETWORKS

1-17. Distribution is dependent upon various independent and mutually supporting networks. The networks consist of both manual and automated systems designed to assist with cargo management. The distribution system is dependent on the effectiveness of these networks. The theater distribution (TD) network consists of four main networks: physical, information, and communication. These networks are discussed below.

PHYSICAL NETWORK

1-18. The physical network consists of the quantity, capacity, and capability of military organizations, fixed structures and established facilities, commercial partners, multinational participants, and host nation support, supporting the distribution operations. It includes airfields, roads, bridges, railroads, structures (such as warehouses, depots, or storage facilities), ports and staging areas, inland waterways), and pipelines (fuel and water).

FINANCIAL NETWORK

1-19. The financial network consists of the policies, agreements, processes, and decision systems that obtain, allocate, and apportion the fiscal resources. These fiscal assets enable and maintain distribution capabilities and execute the distribution missions. Fiscal assets also provide the critical linkage to commercial distribution capabilities.

INFORMATION NETWORK

1-20. The information network is the combination of all information and data collection devices, decision support tools, and asset visibility and enabler capabilities supporting theater distribution. The information network provides distribution managers with the situational understanding and control to operate the distribution system.

COMMUNICATIONS NETWORK

1-21. The communications network links all of the facets of the distribution system and provides continuous information throughout the strategic, operational, and tactical levels of the Army's Battle Command (BC) network capability areas. It carries all of the data produced by the information network. The security, capacity, and reliability of the communications network significantly affect the overall effectiveness of distribution operations. Application of modern military and commercial communications systems, combined with information systems, comprise the central nervous system of the distribution system.

This page intentionally left blank.

Chapter 2
Planning Distribution Operations

Distribution planning requires understanding of the operational environment, the GCC's priorities and requirements, and the link between global and theater distribution. The theater distribution plan describes how sustainment flows from the theater base to the tactical level. The plan outlines who, what, when, where, and how distribution will be accomplished. Theater distribution is the final portion of the global distribution pipeline and the plan must coordinate and synchronize with the strategic plan. The plan will evolve based on the commander's assessment and as the operational environment matures. Therefore, the plan must be flexible enough to support changing operations. This chapter will discuss planning for theater distribution, and preparing and executing the distribution plan.

DISTRIBUTION PLANNING CONSIDERATIONS

2-1. The theater distribution plan must synchronize with the strategic plan. Failure to synchronize the plan may result in distribution backlogs at the ports. To understand the coordination required; it is first important to understand the roles of the strategic distribution providers. Theater distribution operations depend on the strategic functions of USTRANSCOM. USTRANSCOM is a combatant command and consist of three service component commands: Air Mobility Command (AMC), Military Sealift Command (MSC), and Military Surface Deployment and Distribution Command (SDDC).

2-2. USTRANSCOM is the distribution process owner (DPO) and, as such, coordinates and oversees the DOD distribution system. USTRANSCOM ensures interoperability, synchronization, and alignment of DOD-wide distribution, including support of force projection, sustainment, and redeployment/retrograde operations. It establishes concepts and operational frameworks relating to the planning and execution of DOD transportation operations. USTRANSCOM also maintains management over strategic common user air, land, and sea transportation and traffic management. The following paragraphs provide an overview and understanding of USTRANSCOM's Service Components.

AIR FUNCTIONS

2-3. Air Mobility Command (AMC), the Air Service Component, maintains the responsibility for all common-user-airlift assets within the United States. Assets within the United States remain under the control of Commander, USTRANSCOM. During contingencies and operations, AMC assets supports both intertheater and intratheater common-user airlift operations. Although primarily used for intertheater operations, AMC assets can be assigned to support theater operations and temporarily assigned GCC control.

Commercial Airlift Augmentation

2-4. Commercial airlift augmentation capabilities include both AMC controlled and contracted airlift to increase the agility and flexibility that airlift provides to global distribution. Commercial airlift augmentation is delivered by—

(a) Charter. Category A is a contract with the commercial air carrier industry allowing cargo to be individually way-billed between CONUS and OCONUS stations or between OCONUS stations.

Category B is an AMC-procured "plane-load" charter on commercial aircraft. Cargo moves in full planeload lots on other than a carrier's regularly scheduled commercial flights.

(b) Civil Reserve Air Fleet (CRAF). The DOD uses the contractually committed capability of commercial air carriers to augment the military airlift capability of AMC to satisfy DOD airlift requirements. CRAF can be incrementally activated by USTRANSCOM with approval of Secretary of Defense (SECDEF) in three stages in response to defense oriented situations, up to and including a declared national emergency or war. When CRAF is activated, the air carriers continue to operate and maintain the aircraft with their resources; however, AMC controls the aircraft missions.

SEA FUNCTIONS

2-5. Military Sealift Command (MSC), the Naval Service Component, provides worldwide transportation of fuel, equipment, supplies and ammunition during peace and war. This is accomplished using government owned and chartered United States flagged ships. These ships are responsible for conducting the intertheater sea operations.

2-6. Intratheater water operations are conducted by MSC, commercial watercraft and Army watercraft companies. These watercraft companies perform the operational maneuver and sealift of sustainment and units. These companies support marine terminal operations and distribution operations.

Commercial Maritime Industry

2-7. SDDC maintains universal service contracts with the ocean carrier industry for the movement of cargo in the Defense Transportation System (DTS) worldwide at reduced rates. Universal service contracts are from seaport of embarkation (SPOE) to SPOD for breakbulk and from origin to destination for container cargo. Where universal service contracts services are not available, or do not meet the particular customer's service requirements, special or dedicated service contracts are established by SDDC. All agreements and long-term contracts are with US-flagged carriers, preferably those participating in the Voluntary Intermodal Sealift Agreement (VISA) program, unless such service is not available.

Voluntary Intermodal Sealift Agreement

2-8. VISA is the primary sealift mobilization program that was developed through a unique partnership between DOD, the Department of Transportation (DOT), and the commercial sealift industry. VISA is an intermodal, capacity-oriented program versus a ship-by-ship oriented program. It provides contractually committed, time-phased, sealift capability to meet DOD contingencies when commercial service is not adequate to meet OPLAN requirements. VISA provides the process for DOD and industry to develop flexible concepts of operations for contingency sealift in support of combatant commander (CCDR) operational plans (OPLANs).

Ready Reserve Force (RRF)

2-9. The RRF is a fleet of ships maintained by the Maritime Administration (MARAD) in a reduced operating status for use by DOD when required. These ships are civilian contract operated and lay berthed on the US East, Gulf, and West coasts to be within a few days transit of their loading ports. They can be activated in 4, 5, 10, or 20 days based on the scope of cargo movement requirements; these vessels fall under the operational control (OPCON) of USTRANSCOM (exercised through MSC). Some RRF vessels have unique features to support joint logistics over-the-shore (JLOTS), where fixed-ports may be inadequate, damaged, or nonexistent.

LAND FUNCTIONS

2-10. The Surface Deployment and Distribution Command (SDDC), the Army Service Component, coordinates and provides traffic management support for cargo and personnel in support of national defense. It coordinates force movements to seaports in the U.S. and in theater. SDDC also monitors the

status of ports, inland waterways, ground lines of communication, highway, rail, nodes and pipelines worldwide. Force movement, port preparation, and port loading operations are conducted by SDDC. In conducting these operations, SDDC coordinates with MSC on the arrival, discharge, or loading of vessels in accordance with GCC priorities.

2-11. Common-user land transportation (CULT) is a function of each GCC's authority for logistics and is outlined in the GCC's operational plan. Normally, theater level surface transportation assets are under the operational control (OPCON) of the theater army. However, the GCC may assign CULT responsibility to the Service of his choice. The theater army fulfills its CULT responsibilities through the use of its transportation assets, rail assets, and petroleum distribution assets. Assets not designated as common use remain under the control of their Service component commanders to accomplish their mission.

PORT

2-12. United States Transportation Command has the additional responsibility of being the single worldwide manager of common-user ports of embarkation (POEs) and ports of debarkation (PODs). It performs those functions necessary to support the strategic flow of forces and sustainment materiel through the aerial/sea POEs (A/SPOEs) and PODs (A/SPODs) and hand-off to the GCC. Cargo can also be delivered to the GCC through land border gateways. In executing the worldwide port manager responsibility, USTRANSCOM employs two of its three transportation component commands, Military Surface Deployment and Distribution Command (SDDC) and Air Mobility Command.

Single Port Manager (SPM)

2-13. Military Surface Deployment and Distribution Command performs the SPM functions and supports the flow of deploying units, equipment and sustainment into the SPOD and hand-off to the GCC. SDDC supports all aspects of theater port operations and plans operation in accordance with GCC priorities. SDDC manages the workload of the port operator and provides asset visibility information to the GCC.

2-14. Air Mobility Command performs the SPM function and supports the flow of deploying units, equipment, and sustainment into the APOD and hand-off to the GCC. AMC utilizes cargo transfer units, Service provided, to expedite cargo through the aerial port of debarkation and into the theater distribution pipeline.

IN-TRANSIT VISIBILITY

2-15. **In-transit visibility (ITV) is the ability to track the identity, status, and location of DOD units, non-unit cargo (excluding bulk petroleum, oils and lubricants), and passengers, patients and personal property from origin to consignee or destination across the range of military operations.** ITV of force and sustainment assets moving through the theater distribution system is an essential element of a GCC's warfighting capability and is required by a supported commander. ITV is an essential component of distribution management and provides the means to determine if the distribution system is responding to customer needs. It consists of many distribution management personnel who are required to follow designated procedures to provide accurate source data, prompt nodal updates, shipment status, and shipment receipt notices.

STRATEGIC DISTRIBUTION PLANNING

2-16. **Global distribution is the operational process of coordinating and synchronizing fulfillment or joint force requirements from point of origin to point of employment.** It provides national resources (forces and materiel) to support execution of joint operations. The ultimate objective of this process is the effective and efficient accomplishment of the joint force mission.

2-17. In this context, global distribution is the operational process that produces a seamless distribution pipeline that includes the entire joint distribution community. Theater demands drive global distribution. The CCDR determines the point of need, which can be a major strategic aerial or seaport of debarkation (A/SPOD), an austere airfield, a sea base, or any forward location within the operational environment.

2-18. The global distribution pipeline is comprised of two movement mission areas. These areas are intertheater and intratheater movements.

2-19. Intertheater movements include force and sustainment movements between theaters or between the CONUS and theaters in support of GCCs/JFCs. The strategic segment (outside the joint operational area [JOA]) extends from the POE to the POD or land/border in the GCC's area of responsibility (AOR). It also includes forces, supplies, equipment, and sustainment delivered directly to the point of need, as designated by the GCC. Defense Logistics Agency (DLA), and the Services provide centralized materiel management and asset visibility. USTRANSCOM provides common-user and commercial air, land, and sea transportation; terminal management; aerial refueling; global patient movement; and asset visibility (AV).

2-20. Intratheater movements are force and sustainment movements within a theater. The intratheater movement area inside the JOA extends from a land/border, POD or source of supply (internal to a theater) through a point of need (a physical location) or a Service area, as designated by the GCC.

THEATER DISTRIBUTION PLANNING

2-21. The TSC/ESC DMC develops the distribution plan in accordance with priorities established by the JFC. Developing the distribution plan is the single most important aspect of theater distribution. Integration of risk management is crucial to distribution planning for identifying hazards and controlling risks arising from operational factors. In developing the distribution plan, distribution managers start by assuming visibility and by understanding the operational environment in terms of mission, enemy, terrain and weather, troops and support available, time available and civil considerations.

MISSION

2-22. Distribution operations begin with an understanding of the mission. The mission is the task, together with the purpose, which clearly indicates the action to be taken and the reason therefore. Distribution planners must know the scope and size of the mission. They must know the JFC's intent and the distribution planning must facilitate his ability to conduct full-spectrum operations. The distribution plan must be flexible and responsive enough to adapt to rapidly changing situations.

ENEMY

2-23. In today's operational environment, the enemy may range from nation states to extremist networks, groups or organizations. In any scenario, it must be anticipated that the enemy will seek to disrupt the distribution pipeline. Distribution planners must find ways to minimize enemy actions against the distribution pipeline and ensure forces are sustained. Planners may use a variety of techniques such as altering routes and aerial delivery to mitigate actions on the distribution pipeline.

TERRAIN AND WEATHER

2-24. Terrain is a critical factor in planning and executing distribution operations. Planners consider and plan for various terrain conditions such as urban, rural, mountainous, jungle, and desert conditions. In distribution planning, both improved and unimproved road networks must be considered in supporting distribution execution. Planners consider rivers or large forges that must be crossed. Any of these variables may result in degraded distribution operations. Terrain also dictates the best mode to use in distribution operations. In today's high tech environment, weather may not be as great a factor as in previous operations. However, planners still assess the impact that weather has on distribution operations.

TROOPS AND SUPPORT AVAILABLE

2-25. Soldiers are the most valuable asset in any distribution operation. Planners ensure they have the proper mix and types of units to execute the distribution mission. In many instances, planners may incorporate the use of coalition partners, host nation (HN) support, contractors and other Services in distribution operations.

TIME AVAILABLE

2-26. Time is critical in distribution operations. The velocity at which the distribution system operates ensures the time definite delivery of sustainment. Planners ensure distribution operations respond to the commander's needs in a timely manner. The distribution system must be synchronized to ensure the commander maintains the initiative. Without time management and synchronization, disruptions to the distribution may occur.

CIVIL CONSIDERATIONS

2-27. Distribution operations directly affect the civilian populace, environment, and infrastructure. Commanders and planners must be aware of this when planning and executing distribution operations. Distribution operations often support humanitarian operations, disaster relief operations, feeding, and employment of local populations. By understanding human variables, commanders and planners improve the chance of successfully conducting their mission. Civil considerations are a must in distribution planning.

SUSTAINMENT PREPARATION OF THE OPERATIONAL ENVIRONMENT

2-28. The sustainment preparation of the operational environment assists planning staffs in refining the sustainment estimate and concept of support. This includes all actions taken by logistics planners to optimize the distribution system to support sustained operations. These actions include identifying and preparing forward operating bases, selecting and improving LOCs, preparing forward sustainment bases, determining operational stock assets, and building a distribution and automatic information technology (radio frequency identification(RFID)) infrastructure for the theater. The focus is identifying and ensuring access to resources currently in theater. This allows the logisticians to prepare a detailed logistics estimate, and they advise commanders of the best method of providing logistics. (See FM 4-0 for more information)

2-29. At the strategic and operational levels, the operations plan/operations order (OPLAN/OPORD) provides operational mission information essential to develop the logistics estimate. This estimate draws conclusions and makes recommendations concerning the feasibility of various courses of action (COAs) and the effects of each COA on distribution operations. Once the commander selects a COA, the distribution planner uses the logistics estimate to develop the logistics portion of the service support plan along with the distribution plan to the OPLAN/OPORD. The sustainment preparation of the operational environment, service support plan, and distribution plan are living documents within the sustainment planning triad that are changed, refined, and updated as a result of continuing estimates and studies. Figure 2-1 depicts the interrelationship of the distribution plan with the sustainment preparation of the operational environment and the service support plan, with its associated annexes and appendixes.

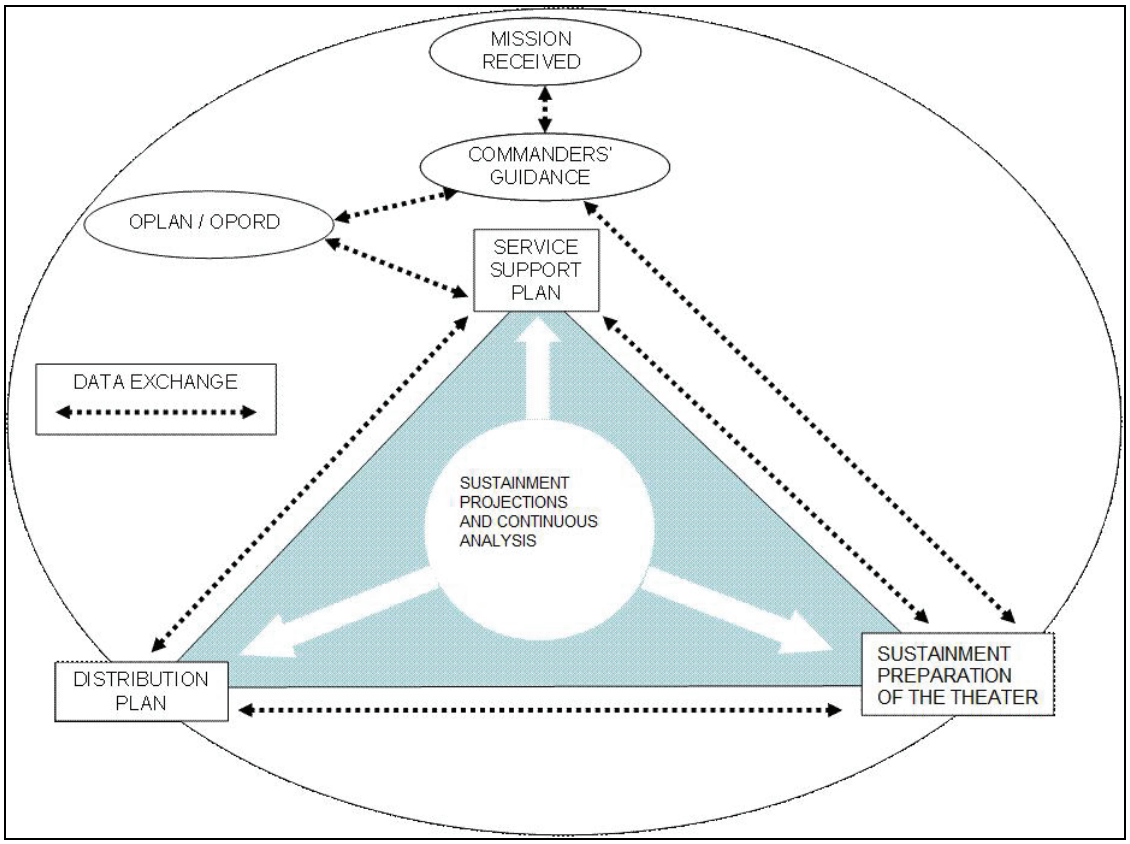

Figure 2-1. Logistics planning

DISTRIBUTION PLAN

2-30. The TSC uses the distribution plan to execute Army theater distribution. By preserving accountability and visibility, the distribution plan supports the JFC's priorities by establishing how requirements can be met given available logistics assets, units, transportation modes, and in-theater infrastructure. It identifies competing requirements and shortages and ensures assets are used to effectively meet the commander's priorities. It is a living document that requires updating to accommodate known and anticipated requirements. It constantly evolves as the theater matures and as the execution of the JFC's campaign plan progresses. The plan requirements aid in designing the distribution system.

2-31. The distribution plan is developed as appendix 1 (Tab F- Distribution) to annex F (sustainment) to the JFC operation order. It is a series of overlays, descriptive narratives, and arrays that delineate the architecture of the distribution system and describe how units, materiel, equipment, and sustainment resources are to be distributed within the theater. It portrays the interface of automation and communications networks for maintaining visibility of the distribution system and describes the controls for optimizing capacity of the system. It is continually updated to reflect changes in, infrastructure, support relationships, and customer locations. The distribution plan portrays an outline of the distribution process as a complete sustainment picture depicting the combined and simultaneous interactions of supply, maintenance, transportation, engineer (as appropriate), medical, finance, human resources, and field service activities.

2-32. The distribution plan becomes the guide by which planners and managers know where support should normally flow and where it may be diverted as commanders and operational needs may dictate. The distribution plan is complemented by the movements program that is used to plan known, anticipated, and contingency transportation requirements. The distribution plan, along with the movement plan, is prepared

by the TSC/ESC in coordination with all the other elements involved in distribution management. The distribution integration branch of the TSC/ESC DMC receives input from all functional elements of subordinate commands, support operations staff, and others sections of the DMC. This information is used to develop the distribution plan. The DMC tracks all changes to maintain a current status of the effectiveness of the distribution system.

2-33. The scope of the distribution plan is limited to explaining exactly how the DMC will maintain asset visibility; adjust relative capacity; and control the distribution of supplies, services, and support capabilities in-theater. The service support plan is the overarching plan, which specifies the theater concept of support, support relationships, priorities of support, and task organization for support of the force. These two separate staff products therefore differ in scope. The distribution plan describes the distribution system and directs the specific protocols by which the DMC will receive and transmit information in order to perform its mission in regard to visibility, capacity, and control of theater distribution. The service support plan is the document that guides the distribution system by directing priorities of support and support relationships and locations. The service support plan translates theater-level service support policies into a unified concept of support across the logistics/distribution spectrum. The distribution plan outlines the processes required to implement and monitor the execution of that concept.

2-34. As command elements and their associated support relationships change within the AO, the sustainment community must be tracking and be informed of these changes. Maintaining this information is critical for efficient distribution operations. This information enables the DMC, commodity managers, and logistics planners to maintain visibility and control of the distribution system. The ability of distribution activities to hold, divert, and redirect unit equipment, personnel, supplies and services, and other support to their ultimate delivery sites depends on distribution and transportation managers and commanders knowing who is supporting whom, and where they are located in the distribution process and their present location on the battlefield.

2-35. This information provides the visibility to develop running estimates and track units as they move across the AO. This synchronizes the multitude of operational missions associated with sustaining the force. Their access to visibility of the force generation process (through the Joint Operations Planning and Execution System [JOPES]) provides them the ability to plan and project unit movement of personnel and equipment with sustainment supplies through the theater distribution system. They match requirements and capabilities of resources available in the theater. In addition, the support operations staff and DPO, in conjunction with the joint force commander (JFC) staff, select the staging/transfer areas and position units along the lines of communications (LOCs) to support the flow of materiel and deploying units.

SUSTAINMENT PLANNING

2-36. Logisticians at all levels must ensure they understand the JFC's intent and concept of operations in developing and executing the sustainment plan. Theater distribution has a finite amount of resources available in the distribution pipeline. Planners must be able to efficiently and effectively anticipate changes in types and quantity of sustainment required based on an ever changing operational environment. Anticipating changing requirements will ensure that sustainment continues to extend the combatant commander's operational reach. (For a more detailed discussion on sustainment planning, see FM 3-0, *Operations*; FM 4-0, *Sustainment*; and FM 5-0, *The Operations Process*.)

2-37. The ASCC, corps, and division sustainment cells have primary responsibility for preparation, publication, and distribution of the sustainment plan. Other staff officers, both coordinating and special, assist by providing those parts of the plan pertaining to their respective AOs. The distribution plan, along with the movement plan, is prepared by the TSC/ESC in coordination with all the other elements involved in distribution management.

2-38. The system's effectiveness is measured by how it enhances and supports strategic, operational, and tactical plans. The success of those operations depends on the staff's ability to prepare a comprehensive and technically supportable sustainment plan. The sustainment plan is an integral part of the OPLAN/OPORD. It contains a statement of distribution instructions and arrangements supporting the operation that are of primary interest to the supported units and formations. It provides the commander's

plan for sustainment operations based on the information gathered and analyzed during the sustainment preparation of the operational environment process. It provides information to the supported elements, and it serves as the basis for the plans of supporting commanders to their units. The characteristics of the sustainment plan are consistent and align with the seven principles of theater distribution discussed in chapter 1 of this manual. However, an additional critical characteristic of sustainment that must be considered is integration.

2-39. Integration consists of synchronizing sustainment operations with all aspects of Army, joint, interagency, and multinational operations. First, it involves total integration of Army sustainment with the operations (plan-prepare-execute-assess) process. Support of the commander's plan is the goal of all sustainment efforts. Effective support requires a thorough understanding of the commander's intent and synchronizing sustainment plans with the concept of operations. Army forces conduct operations as part of joint, multinational, and interagency teams in unified actions. Therefore, Army forces integrate their sustainment operations with other components of the joint force to—

- Take advantage of each service component's competencies.
- Allow efficiencies through economies of scale.
- Ensure the highest priorities of the joint force are met first.
- Avoid duplicating effort and wasteful competition for the same scarce strategic lift as well as intratheater resources.

RETROGRADE PLANNING

2-40. Planning for the retrograding of materiel must be performed during the initial stages of an operation. Early retrograde planning is essential and necessary to preclude the loss of materiel assets and maximize use of retrograde transportation capabilities. Planners must address during the initial phases how to recover and retrograde during ongoing operations and how to use transportation assets effectively. Retrograde functions include turn-in classification; preparation; and how packing, transporting, and shipping operations are established and conducted. To ensure effective and timely retrograde operations, commanders at all levels must enforce supply accountability and discipline. This includes acquiring and maintaining packing materials to be used in retrograde operations. As an example, significant resources are needed to restore and repackage ammunition. In addition to assigned military organizations, contractor, and HN, support may be required.

2-41. If contractor and/or HN support is used for retrograde operations, it must be negotiated early in the operation. Contractors must know and fully understand the scope of work necessary to complete the mission. HN support should be thoroughly screened by security personnel. During all retrograde operations, leaders must ensure safety policies and procedures are carefully observed.

2-42. The movement of retrograde through the distribution system, to include maintenance evacuation of materiel, is accomplished in reverse order from the tactical through strategic level. The theater distribution system provides the theater army the ability to manage retrograde flow of all materiel. Retrograde equipment and materiel is consolidated at the lowest level supply support activity (SSA) and reported through the support operations channels to the designated commodity manager for disposition instructions. The SSA packages, documents, labels, and produces RF tags for retrograde items for shipment based upon disposition instructions received. Transportation requirements for retrograde are synchronized with inbound transportation flow to maximize use of transportation platforms.

2-43. The United States Army Materiel Command (USAMC) coordinates, monitors, controls, receives, accounts for, and arranges the retrograde shipment of Army equipment and weapon systems when released by the geographic combatant commander. This includes inspection, condition coding, repackaging, preservation, marking, coding, documentation, loading, and accountability to ensure the orderly and timely retrograde movement of all materiel and munitions no longer required in the area of operation (AO).

2-44. Under certain circumstances (e.g., major unit rotations and redeployments in conjunction with exercises and contingency operations) cargo and personnel returning to the US can be "pre-cleared" (i.e., inspected/certified at the origin instead of at the US border). When deemed to be beneficial to the DOD, US Customs and Border Protection (CBP), and US Department of Agriculture (USDA), pre-clearance

programs may be established. These pre-clearance programs will be initiated only when the GCC, USTRANSCOM, and the respective US agency or agencies explicitly agree to their establishment. The program must be in place prior to the shipment of battle damaged equipment back to CONUS for repair. The unit commander identified for movement (deployment or redeployment) must ensure that unit personnel, equipment, and materiel are in compliance with customs and agricultural requirements for that area and according to DOD Regulation 4500.9-R, *Defense Transportation Regulation*, part V.

2-45. Once preclearance procedures have been established, the theater army is normally responsible for establishing procedures and executing preclearance, inspection, and wash down on all materiel retrograded to the United States. This program must be in place prior to retrograde to preclear not only retrograde materiel but also the shipment of battle-damaged equipment back to CONUS for repair. The unit commander identified for movement (deployment or redeployment) must ensure that unit personnel, equipment, and materiel are in compliance with customs and agricultural requirements for that area and according to DOD Regulation 4500.9-R, *Defense Transportation Regulation (DTR)*, part V.

2-46. Meeting CBP and USDA standards is the obligation of each individual and commander. Historically, military police conducted and authenticated customs preclearances under the supervision of the CBP and the USDA. Military police were provided guidance, informational materials, and training by the USDA Animal and Plant Health Inspection Service (APHIS). APHIS additionally provided personnel to assist in preclearances and trained DOD personnel in how to conduct inspections of personnel and in the inspection, cleaning, and disinfecting of material. Military police provide a critical capability of training customs inspectors to support the combatant commander's rotation of forces in and out of theater.

2-47. Commanders must initiate aggressive programs to ensure that pests and disease are not included in shipments of general cargo, vehicles, or other types of containers. When it is known that significant quantities of retrograde materiel will accumulate for movement, the theater army must request Armed Forces Pest Management Board authority to place the provisions of DOD Regulation 4500.9-R, part V, into effect for clearance of shipments at specific points of origin. The Armed Forces Pest Management Board recommends policy, provides guidance, and coordinates the exchange of information on all matters related to pest management throughout DOD. The Armed Forces Pest Management Board's mission is to ensure that environmentally sound and effective programs are present to prevent pests and disease vectors from adversely affecting DOD operations.

This page intentionally left blank.

Chapter 3

Executing Distribution Operations

The execution of distribution operations require continuous monitoring of resources and movements. The distribution process is a proactive, systematic coordination of transportation, tracking, and delivery of materiel and personnel. This process requires the integration of distribution management from the strategic to the tactical levels. This chapter discusses the management, control and execution of distribution operations.

STRATEGIC-TO-THEATER DISTRIBUTION COORDINATION

3-1. The organization tasked with conducting the coordination and synchronization of the distribution system between the strategic and theater distribution pipelines are the Joint Deployment and Distribution Operations Center (JDDOC) and the Army's TSC/ESC. This coordination and synchronization ensures uninterrupted sustainment of forces on the ground. Figure 3-1 depicts a notional theater distribution system.

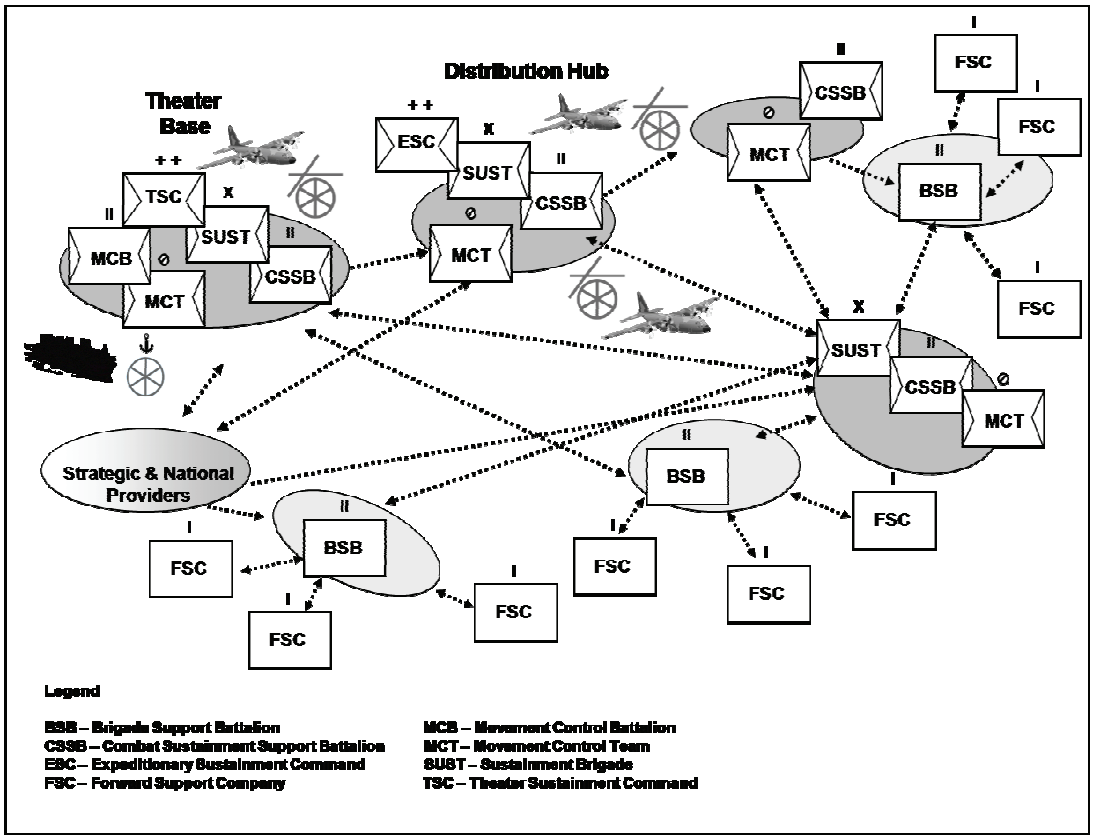

Figure 3-1. View of a Notional Intratheater Distribution System

JOINT DEPLOYMENT AND DISTRIBUTIONS OPERATIONS CENTER (JDDOC)

3-2. The JDDOC coordinates, synchronizes, and optimizes strategic and theater air, land, and sea deployment and distribution operations within the JFC. The JDDOC provides the GCC with critical information concerning force, cargo, and sustainment movement through the strategic pipeline. This information allows the JFC to make operational decisions and change sustainment priorities. The JDDOC also provides the TSC with information needed to coordinate and synchronize the theater distribution pipeline. Additional JDDOC information can be found in chapter 4.

THEATER SUSTAINMENT COMMAND (TSC)/EXPEDITIONARY SUSTAINMENT COMMAND (ESC)

3-3. The TSC/ESC manages and coordinates the theater distribution pipeline from the operational through tactical levels. It is responsible for executing sustainment priorities as designated by the JFC. The TSC/ESC performs the coordination and management function through it distribution management center (DMC). The DMC receives strategic distribution information from the JDDOC and sustainment priorities from the JFC. Upon receipt of this information, the DMC develops the theater distribution plan based on JFC guidance. Once the distribution plan is developed, it is passed to the sustainment brigade (SUST BDE) for execution.

DISTRIBUTION MANAGEMENT

3-4. Theater distribution management is optimizing the distribution networks to achieve the effective and efficient flow of personnel, equipment, and materiel to meet operational requirements. A distribution-based capability requires optimizing available infrastructure, reducing support response time, maximizing throughput, providing TDD, maintaining ITV, and processing retrograde movements. To manage and maintain an effective nonstop distribution operation, there must be integrated connectivity between the strategic, operational, and tactical logistics elements that is transparent to supported units. DMCs and movement control battalions (MCB) are responsible for controlling distribution.

3-5. The DMC develops the theater distribution management plan in coordination with the JFC. It coordinates and synchronizes Army materiel managers and movement controllers in a theater. The DMC of the SPO section has primary responsibility for Army distribution management. If the TSC/ESC serves as a joint logistics command, the JDDOC has the capability to collocate with the TSC/ESC DMC and assist in joint oversight of distribution and deployment. The DMC manages all facets of transportation, including the effective use of air, land, and sea transportation assets. It considers the impact of unit movement requirements on the distribution system.

DISTRIBUTION MANAGEMENT CENTER

3-6. The DMC monitors the distribution of all classes of supply and services, and personnel movements supporting the deployed force. It involves ensuring systems and processes are in place to monitor the flow of materiel, equipment, and personnel. The DMC provides location of mode assets and movement of critical supplies along main supply routes. It provides staff recommendations to direct, redirect, retrograde, and cross level resources to meet mission requirements. The DMC provides current priorities for distribution/redistribution activities to the MCB. The DMC influences the system by—

- Using communication networks.
- Maximizing containerization.
- Optimizing expeditionary support packages (ESPs).
- Balancing transportation assets, MHE and storage.
- Using integrated logistics aerial resupply (ILAR).
- Reducing mode transfer handling requirements and increasing ITV.
- Balancing other variables related to theater distribution.

3-7. The DMC enables logistics commanders and staffs to synchronize distribution functions within an AO. This process and the responsibilities involved are depicted in figure 3-2.

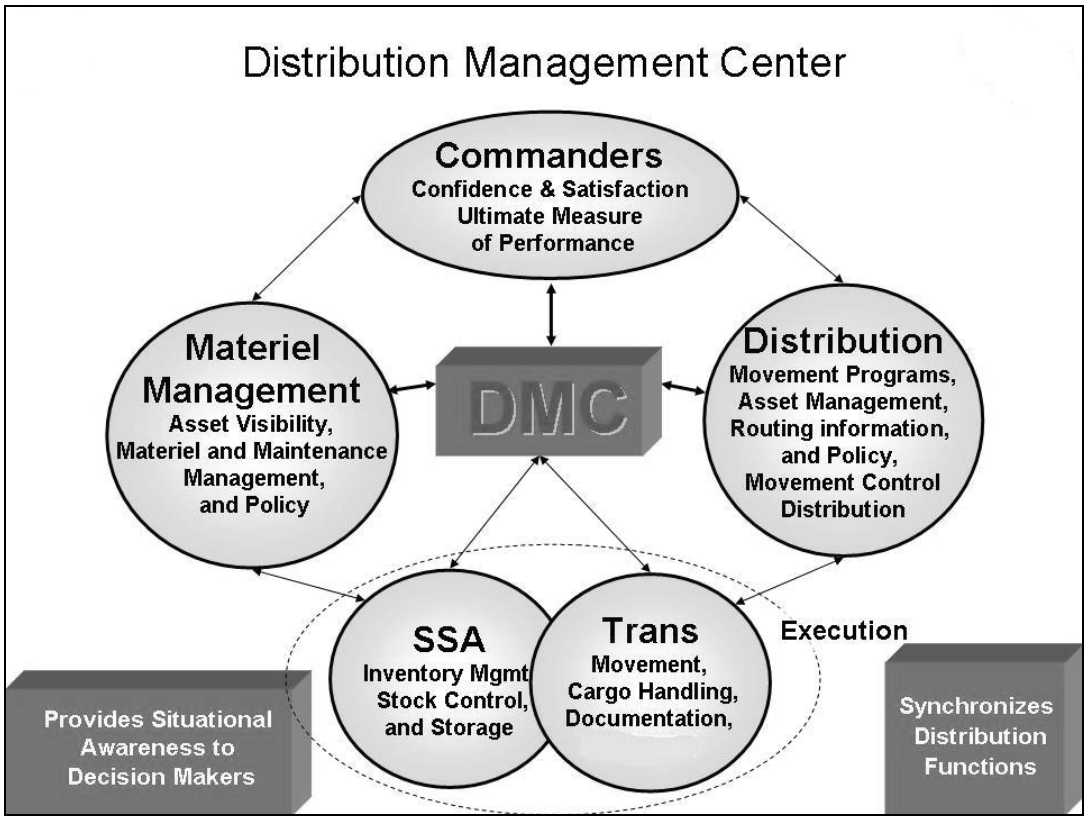

Figure 3-2. DMC distribution synchronization diagram

3-8. Figure 3-3 shows the organization of a DMC within the support section (SPO) section of the TSC/ESC. DMC actions include the following:

- Maintains continuous contact and connectivity with the JFC, Corps, and Division sustainment cells and brigade combat team (BCT) S4 for resource prioritization.
- Develops the theater distribution plan and executes priorities according to JFC directives.
- Exercises materiel management and movement control within theater.
- Coordinates with system and item managers/Army Field Support Brigade for system support and materiel requirements.
- Synchronizes operations within the distribution system to maximize throughput and follow-on sustainment.
- Manages all facets of transportation including the effective use of air, land, inland waterway and sea transportation assets.
- Establishes and maintains the common operational picture throughout the theater.
- Maintain coordination with theater army G-1 and Human Resource Sustainment Center for the movement of personnel.
- If the TSC serves as a joint logistics command, the DMC has the responsibility for operating the multinational logistics management center (MLMC) to coordinate logistics requirements for coalition forces if directed by the GCC.

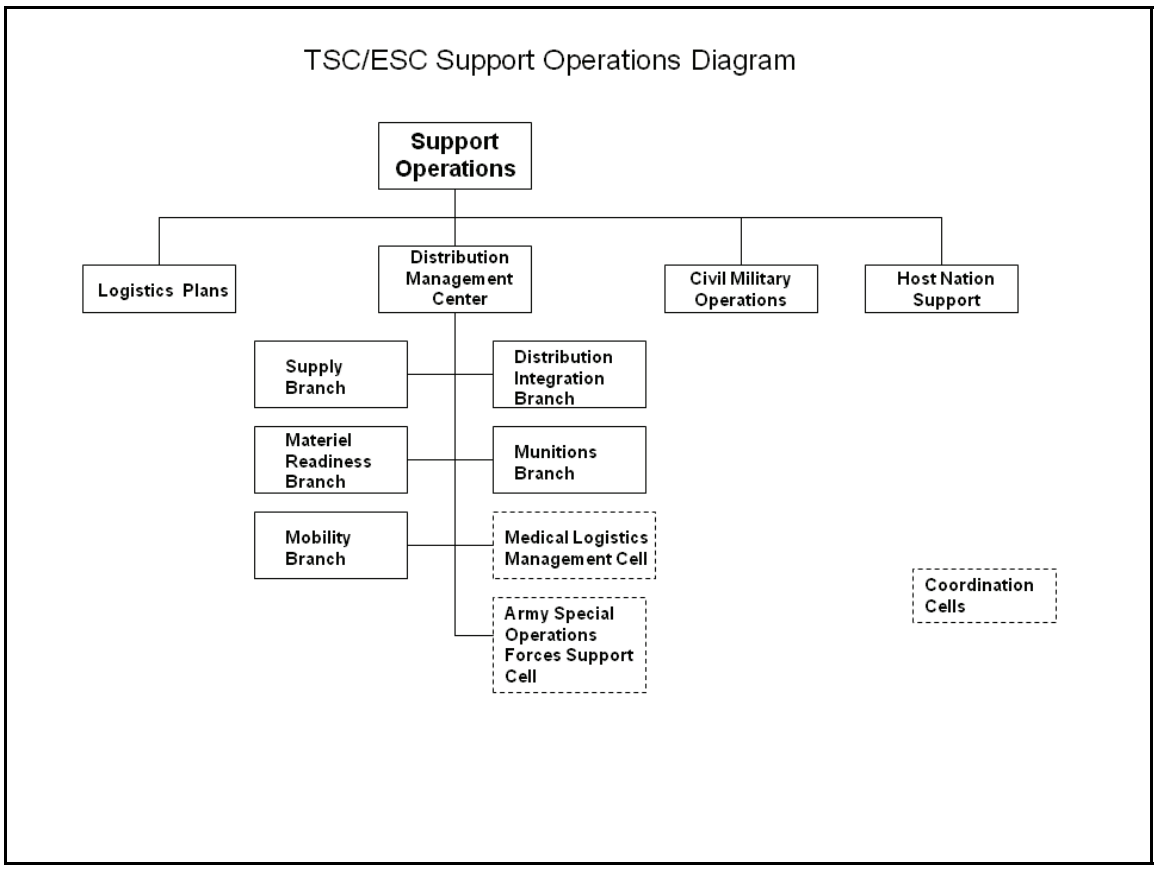

Figure 3-3. TSC/ESC DMC diagram

3-9. The SUST BDE's SPO diagram is depicted in figure 3-4. Its functions are:

- Execute material priorities established by the TSC/ESC DMC.
- Manage internal supplies and stocks.
- Assume OPCON of transportation theater opening element (TTOE) and theater distribution augmentation elements when the elements are assigned.
- Provide support and requisition management assistance to brigade support battalions (BSBs) and CSSBs.
- Provide technical supervision for the logistics mission of the SUST BDE.
- Supervise distribution, maintenance, and materiel management functions within the brigade AO.
- Serve as the key interface between supported units and the SUST BDE.
- Employ integrated and automated control, and Standard Army Management Information Systems (STAMIS) to develop a logistics common operational picture (COP) and maintain situational awareness throughout the brigade operational area.
- Serve as the key interface for maintaining accountability of personnel arriving, departing, or transiting theater.

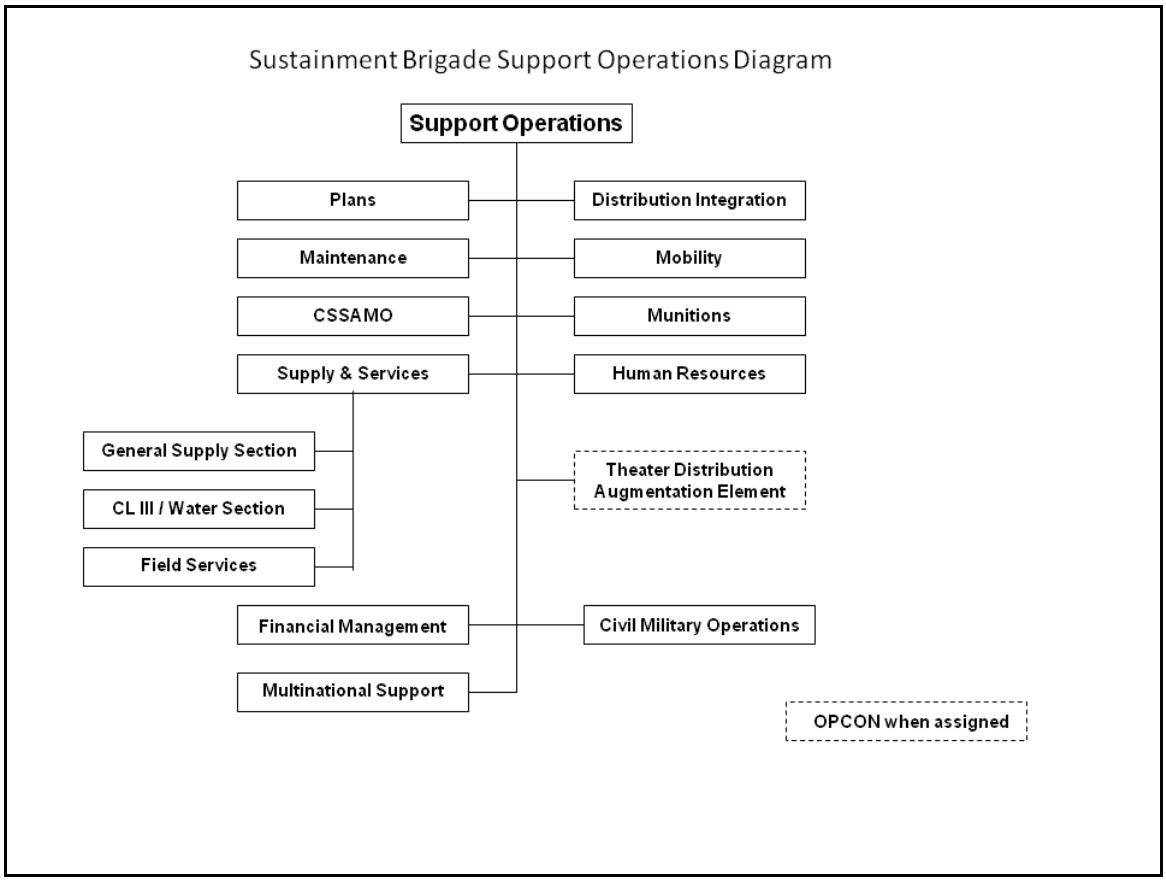

Figure 3-4. Sustainment brigade SPO diagram

MATERIEL MANAGEMENT

3-10. The DMC executes centralized materiel management capability which enables responsive support to theater requirements and reduces customer wait time. It also reduces redundant materiel management layers by centralizing materiel management functions and employing a theater-wide view of resources.

3-11. The DMC performs materiel management for all classes of supplies (less medical – CL VIII, and classified communications security equipment) and maintenance management for those activities for which the TSC/ESC has control and responsibility. DMC materiel management functions include managing, cataloging, requirements determination, requirements validation and prioritization for procurement, distribution, redistribution of excess, and retrograde of materiel. These functions are performed within the parameters of policies, plans, priorities, and allocations developed in coordination with the JFC.

3-12. In accordance with JFC support priorities, the DMC provides direction for receiving, storing, and issuing theater stocks. For requirements being considered for local procurement, the DMC validates the requirement prior to forwarding it to the local procuring activity.

3-13. Requisitions flow from the requesting unit directly to systems controlled by DMC materiel managers in accordance with standard operating procedures. This streamlined requisition process permits the TSC to reach across theater-wide resources and capabilities to satisfy Army requirements. Enabled by asset visibility, this approach not only reduces but also minimizes the level of stocks required. More detail on materiel management will be discussed in chapter 5.

MOVEMENT CONTROL

3-14. The TSC mobility branch conducts movement control through its subordinate MCBs. The TSC implements priorities in support of the JFC concept of operations. Critical TSC tasks include—

- Balancing transportation capabilities with the day-to-day and projected operational requirements.
- Preparing estimates, plans, policies, and procedures for movement control, mode operations, and terminal operations.
- Managing transportation by maintaining visibility of materiel that being transshipped at distribution nodes and the visibility of resources required to operate the nodes.
- Coordinating the movement of major units.
- Developing policies and procedures to control, regulate, and expedite the movement of intermodal assets (i.e., leased containers, flatracks, and Air Force 463L pallets) within the theater.
- Maintaining liaison with JDDOC, Joint Task Force-Port Opening (JTF-PO), HN transportation agencies, mode operators, and supported units.
- Protecting movement control assets.

3-15. The movement control teams attached to the MCB may be under operational control of the SUST BDE and assist with ITV and transportation asset allocation. The SUST BDE monitors the movement of all items until they reach the customer/destination. The SUST BDE also manages the convoy marshalling areas, convoy halt sites, and distribution hubs between the theater base and the supported units. This is accomplished through the close coordination with the MCT. More detail on movement control will be found in chapter 4.

DISTRIBUTION OPERATIONS

3-16. Theater distribution operations begin with theater opening. Theater opening is a complex joint process involving the GCC and its Service Component Commands, as well as strategic partners such as DLA, USTRANSCOM and USAMC. Theater opening requires a seamless strategic-to-operational interface and unity of effort among various commands.

THEATER OPENING

3-17. The distribution portion of theater opening is the ability to establish and initially operate PODs; to establish the distribution system and sustainment bases; and to facilitate the reception, staging, and onward movement of forces (RSO) and materiel. Theater opening includes communications, personnel protection, intelligence, civil affairs operations, human resources, financial management, Army Health System Support, engineering, movement (air/land/water transport, terminal operations), materiel management, maintenance, and contracting.

3-18. Early deployment of the transportation theater opening element is essential to successful theater opening operations and the continuous, seamless flow of materiel into the initial theater distribution system. Without adequate theater-opening capabilities, the JFC commander may not have the resources required to maintain and manage the Army theater distribution system. A tailored SUST BDE assigned theater opening responsibility and augmented by a transportation theater opening element will ensure that the JFC has the capacity and capability to establish and manage theater distribution and execute RSO.

3-19. The transportation theater opening element provides staff augmentation to the SUST BDE headquarters assigned theater opening responsibility. It augments the SUST BDE SPO section by adding the required capabilities for staff oversight for select theater opening operations. For example, it provides planning and oversight required to open and initially operate the Army theater distribution system. It also provides support to assigned customers, manages minimum essential early-entry operations, and provides control of employed units. Once theater operations transition to sustainment, the transportation theater opening element could augment the TSC/ESC DMC. As an example, the transportation theater opening element movement branch could move to the ESC to control theater-level movement control.

PORT OPERATIONS

3-20. Air and seaports of debarkation (APODs/SPODs) operations are essential for the reception of personnel and equipment. SDDC and AMC coordinate all ship and aircraft arrival at the PODs. Movement control teams (MCTs) are assigned to each POD by the movement control battalion (MCB).

3-21. SPOD assessment teams in the port opening elements are capable of analyzing the seaports for effectiveness and determining the improvements and types of units needed to potentially increase the capacity. Berths at the SPOD will vary from world class to austere or degraded. Other factors such as cranes, staging areas, container handling equipment, hazardous cargo restrictions, highway and rail access, and availability of qualified labor will determine the level of throughput that can be achieved at a particular SPOD. As cargo is offloaded from ships, it is moved to the staging area at the SPOD. The deploying unit provides port support activity (PSA) that is responsible for ship offload support (maintenance, recovery and medical) at the port. They also provide specialty drivers for certain vehicles such as tanks, Strykers, and heavy equipment transporter systems. The MCT coordinates for unit pickup and departure of equipment from the staging yard or arranges onward movement of unit equipment to its final destination.

3-22. APOD assessment teams in the port opening elements are capable of analyzing the airports for effectiveness and determining the improvements and types of units needed to potentially increase the capacity. Runways on the APOD will vary in capacity and capability for handling specific types of aircraft. Other factors such as loading areas, cargo handling equipment, ramps, aviation fuel facilities, hazardous cargo restrictions, highway access, and availability of qualified labor will determine the level of throughput that can be achieved at a particular APOD. At the APOD, the arrival/departure airfield control group is responsible for moving personnel and baggage from the plane to the staging areas. The MCT coordinates transportation to move personnel and baggage from the APOD to their final destination.

Joint Task Force-Port Opening (JTF-PO)

3-23. JTF-PO is a port opening option designed to be in place in advance of a deployment of forces, sustainment, or humanitarian/relief supplies. It gives the supported JFC rapid port opening capability to facilitate crisis response in austere environments. The initial deployment of the JTF-PO is conducted under the authority of the CDRUSTRANSCOM (as authorized in the Unified Command Plan and SECDEF standing execute order), in direct support of the supported GCC. It is a joint expeditionary capability that enables USTRANSCOM to establish and initially operate an APOD/SPOD and a distribution node, to facilitate port throughput in support of a contingency response. APOD forces are deployable within 12 hours and SPOD forces within 36 hours. Both are designed to operate for 45–60 days and then redeploy or be relieved by follow-on forces. (For more information see JP 4-09, *Distribution Operations*.)

Terminal Operations and Theater Hubs

3-24. Army terminal operations are key enablers of the theater distribution system and are conducted at common-user seaports, inland waterway ports, bare beaches (logistics-over-the-shore operations), rail terminals, aerial ports, truck terminals and trailer transfer points, centralized receiving and shipping points, supply support activities, ammunition storage areas, and other distribution nodes throughout the operating environment. The TSC and MCB (in conjunction with SDDC elements) establish initial theater hubs to facilitate the TDD of materiel moving through the theater distribution system. Terminal operations present unique aspects for distribution execution; for example, some commercial seaport operations can be conducted with no military presence at all, while other water terminal operations, such as LOTS, may require multiple units to be effective.

Logistics Over-The-Shore (LOTS)

3-25. **Logistics over-the-shore is the loading and unloading ships in an austere environment or without deep draft capable fixed port facilities.** LOTS operations include all processes from in-stream discharge through the off-loading, and arrival of equipment/cargo and supplies at the inland staging and marshalling areas. LOTS operations provide a critical capability for bringing equipment/cargo and supplies into theater with

degraded or austere port facilities, or it can be used to bypass enemy anti-access or area denial efforts. In addition, LOTS can be used to supplement existing port facilities.

3-26. The Army can conduct its own LOTS operation, or, it can operate in conjunction with the Navy. Joint logistics over-the-shore (JLOTS) is an operation in which Navy and Army logistics over-the-shore forces conduct logistics over-the-shore together under a joint force commander.

MODE OPERATIONS

3-27. Mode operations describe the methods by which sustainment and cargo are delivered. There are three available modes of operation available to distribution managers: land, sea, and air.

Land

3-28. Army pipeline, truck, rail, and terminal units provide the assets to execute surface movement of sustainment and forces within the distribution system. Land operations are the most common method by which sustainment and cargo are delivered to forces. They also face the greatest threat of enemy interdiction and denial.

Sea

3-29. Army watercraft units provide the assets to execute waterborne movement of sustainment and forces within theater. They support water operations in the employment and sustainment of forces. They provide a critical capability in mitigating area denial and anti-access techniques an adversary might use.

Air

3-30. Army and Air Force aviation units provide assets to perform air delivery of sustainment and forces within a theater. Army rotary wing aircraft provide support where terrains denies road delivery or in emergency situations. Airdrop or air delivery may also be arranged.

NODE OPERATIONS

3-31. Node operations describe the areas that sustainment and cargo pass through as they transition between modes of transportation. Node operations ensure that sustainment and cargo are consolidated as they move through the distribution system toward their destination. Node operations can be described as ports, centralized receiving and shipping point (CRSP), and BSB supply support activity (SSA).

3-32. Node operations can also follow the 'Hub and Spoke' model or be trailer transfer points (TTPs). The 'Hub and Spoke' model makes transportation much more efficient by simplifying the network of routes and nodes. TTPs operate along routes or at nodes to stage, trans-load, or unload trailers as they wait for units to come pick them up or convoys to transfer them to another node or destination.

Port

3-33. Ports of debarkation and land/borders are where sustainment arrives in theater. It is from these locations that sustainment and cargo enter their Service theater distribution system. Cargo designated for the Army then becomes part of the Army theater distribution system. Once in port, sustainment and cargo loads for the Army are consolidated and sent to locations throughout the theater. Some loads may be sent to the theater base and others may be sent to forward destinations. The CRSP segregates arriving materiel into Service and geographical specific loads.

Centralized Receiving and Shipping Points (CRSPs)

3-34. Centralized receiving and shipping points (CRSPs) conduct a cross docking function that breaks down and consolidates cargo bound for the same location. CRSP consolidate and expedite the shipment of sustainment to the BSBs and provide back haul operations from the BSB AO. CRSPs also assist in container

management for the theater. As a result of cross docking, empty containers at the CRSP are identified and returned to theater base.

3-35. Materiel arriving at a theater POD is sent to the CRSP at the distribution hub or to one of the CRSPs located in the SUST BDE areas. Information stored on the RFID tag is read and communicated to the national RF-ITV server and personnel consolidate loads bound for a supported unit. New RFID tags are processed and attached to the loads. Equipment and loads ready for shipment are placed in holding areas on the CRSP for outbound shipment to the supported units.

Supply Support Activities (SSA)

3-36. The last node in the theater distribution system is the SSA. They receive the consolidated shipments from the supporting CRSP. They are the distributors of sustainment for requesting units.

3-37. Materiel that arrives at the SSA is segregated and consolidated into loads distributed to the BSB's subordinate units. Information on the shipping label is verified, RFID tags are read and communicated to the national RF-ITV server, and the shipment record closed. The SSA is responsible for coordinating the final delivery of supplies to the supported units. Frequency of replenishment will be mission variables dependent. In operations with limited infrastructure or unsecured lines of communications, the use of the Joint Precision Air Drop System (JPADS) might be required.

CONTAINER OPERATIONS

3-38. Container operations expedite and optimize cargo-carrying capabilities via standard shipping containers and multiple modes of transport (sea, highway, rail, and air). The International Organization for Standardization (ISO) containers and flat racks enables the use of military or commercial lift assets. The ISO establishes the technical requirements for containers that facilitate the ease of handling associated material handling equipment (MHE). The ISO container is an effective and efficient shipping container for most classes of supply, less Class III (Bulk). It provides minimum obstructions to the deployment throughput, and facilitates unit integrity and cargo security, while enabling container tracking and cargo ITV.

3-39. Movement of containers may be accomplished by land, air, and sea. Land movement of ISO containers is performed by rail or highway. Although not routinely done, Air Mobility Command will provide wartime airlift support for ISO containers and tactical shelters. The type of aircraft as well as required MHE must be identified and considered at the earliest point in the planning phase. Ocean carriers will transport containers under liner terms or charter all, or part, of their vessel for container movement. Unit equipment may be containerized and transported with other cargo on MSC operated or controlled vessels or on commercial vessels. The preferred method for containerized equipment is via the method that meets the CCDR's requirements.

COMMERCIALLY OWNED/GOVERNMENT OWNED CONTAINERS

3-40. Planners must weigh the advantages and disadvantages when considering the use of commercial-owned or government-owned containers. Commercially owned/leased containers are owned by commercial ocean carriers that are contracted to support DOD operations and leased for a specific time. Generally the Service to which the container is used by is charged a fee for the use and additional detention charges are incurred if not returned within the contractual time. DOD-owned/leased containers can be used indefinitely without detention charges. DOD leased containers are an option and offer flexibility, but may not fit all situations especially for long deployments or locations where they cannot be returned to the contractor. Government owned/leased containers are nonexpendable.

3-41. In an austere environment where operations are expected to exceed 6 months, commanders should direct the use of DOD-owned containers during the initial stages of an operation. DOD-owned containers should be used until temporary storage facilities are constructed. When planning to use DOD-owned, Service-owned, or commercially owned containers, the following must be considered:

- Availability and location of containers.
- Time and resources required to position containers for loading.
- Theater infrastructure/Force structure.

- Availability of MHE at shipping point and at destination.
- Tracking capability
- Labeling and marking of owner/addressee and destination.
- Method of securing container (lock or serial band)

3-42. A critical node for containerized cargo is the initial entry container control site; this may be a seaport, aerial port, truck terminal, CRSP, or railhead. The ability of control site personnel to rapidly identify the sender and receiver address is the primary enabler for proper accounting and delivery. Every control site is responsible for the expedient receipt, staging, and onward movement/shipment of ISO containers.

THEATER CONTAINER MANAGEMENT

3-43. Positive theater container management requires commanders to designate authorities at the strategic, operational and tactical level to synchronize movement management and control, with container accountability to ensure management of containers in support of the theater requirements. The theater commanders determine the level of management in theater based on the complexity of the theater distribution environment and volume of containers. USTRANSCOM is the distribution process owner (DPO). SDDC is the global container manager and is responsible for management and control of containers within the defense transportation system. The Army Intermodal Distribution Platform Management Office is responsible for the management and control of Army-owned/leased ISO containers and other distribution platforms and for developing and implementing practices and procedures that ensure the Army operates effectively and efficiently within the DOD and commercial intermodal systems.

3-44. The Combatant Command DDOC is partnered with USTRANSCOM and, along with Defense Logistics Agency (DLA), coordinates and schedules the movement of all commodities and personnel intertheater via ground, sea, and air. Units that operate at strategic points in the operational environment are the Transportation Brigade managing port operations in theater and the SDDC terminal transportation battalion. SDDC provides statistical and administrative tracking of all containers in the AOR and uses Integrated Booking System/Container Management Module and the Army Container Asset Management System to provide current visibility of containers.

- Strategic level authorities. Combatant commands (COCOMs) are theater container manager (TCM). The TCM provides container management policy, procedures, programs, and planning guidance. Theater army level, is the container management executive agent executing the container management requirements and usage throughout the theater AOR.
- Operational level authorities. Service Component or Joint Task Force CJ4 may establish a Country Container Authority (CCA) as required. It is recommended that the CCA's responsibility is not delegated below the Expeditionary Sustainment Command (or service specific equivalent) level and is responsible for all container management operations for their respective AO.
- Tactical level authorities. Unit commanders appoint the container control officer (CCO) at their respective location. They ensure the unit CCO will track unit-owned and unit-controlled containers and are accurately accounted for, inventoried, and correctly added and maintained in ACAMS/IBS-CMM. Base/Installation level CCOs coordinate with subordinate/tenant unit/activity CCOs on container status and locations. Movement Control Battalion/Teams (MCB/T) plan, monitor, and track movements throughout their AOR, track and report container movements across borders, enforce CCA directives permitting or denying movement of carrier containers, coordinate the scheduling of the return of empty container back to consolidation areas in accordance with current movement priorities.

Receiving Containers

3-45. Once a container arrives in port, the movement of the container is a coordinated effort between SDDC, a terminal battalion and the MCT. SDDC coordinates the ship arrival and off-load priorities. The terminal battalion discharges the ship, and the MCT is responsible for coordinating transportation assets to move the

container off the port. The MCT captures visibility of the container and tracks it throughout the theater. More discussion on MCBs and MCTs can be found in chapter 4.

Staging Containers

3-46. Containers discharged from the vessel are moved to staging areas on the port. RFID tags and shipping labels are scanned and the container is scheduled for movement. Containers without those documents may become frustrated cargo and are staged separately. Frustrated cargo requires additional effort to find consignees and delays delivery of containers to the end user. Commercially owned containers as frustrated cargo may accrue detention charges.

Control and Tracking Containers

3-47. Container control is performed by distribution management center personnel and movement control personnel at transportation, storage, and distribution nodes and centers. They report daily essential information to a central container control activity, movement control battalion, or distribution operations center concerning each container's location, use, flow, and condition.

3-48. Container tracking is conducted using electronic data interchange and RFID tags (written with required information and verified as operational) attached to all containers. Information on the tag should include shipment information and conveyance characteristics (to include container number). It should also contain commodity and transportation control and movement document information of the equipment and supplies being transported. It includes item level visibility of the container contents.

3-49. The RFID tags are attached at origin and information on the tag passed to the national RF-ITV server and to the Integrated Data Environment Global Transportation Network Convergence (IGC) for joint asset visibility and the Logistics Support Activity (LOGSA) for Army AV. Interrogators will be located at the origin, destination, ports of embarkation and/or debarkation, and other critical nodes along the route. The time, date, and location data read by the interrogators will either be electronically input through the Standard Army Management Information System (that is, Transportation Coordinator's-Automated Information for Movement System II [TC–AIMS II]), Global Combat Support System Army, and Standard Army Retail Supply System with tag writing software, or communicated directly to the regional ITV server and then on to GTN, which feeds the Joint total asset visibility system. Within the Joint operations area, the Movement Tracking System (MTS), on the prime mover, integrated with automated information technology on the container, should be used to provide exact location of in-transit prime movers, equipment, supplies, and containers.

Container Management Planning for Operations

The expected duration of a joint contingency can influence how logistics planners incorporate the use of commercial and government containers in support of the GCC. Container detention occurs when ocean carrier (commercial) containers are held longer than the free time allocated within the ocean transportation contract for off-load of cargo and carrier notification for pick-up of the container. During OIF/OEF commercial containers were sent forward and became the default storage solution for forces engaged in combat operations.

This resulted in detention, maintenance, port storage and, associated "buy-out" charges that were in excess of the base price of the container. This expense occurred because storage facilities did not exist and could not be constructed in time to meet the demands for forward storage in support of the warfighter. Logistics planners need to consider storage requirements needed to sustain operations.

Containers are a viable solution for forward storage; however the peacetime model of using a commercial container to deliver cargo to the point of need and empty and the return the container within the allotted free time is not a viable option when supporting contingencies of indefinite duration and characterized by unsecured lines of communication. Logistics planners should direct the use of government-owned containers for the initial support of operations. As the theater matures, planners can institute a transload operation, as was done with support of Operation Iraqi Freedom.

In this operation, commercial containers were used to deliver to the port of debarkation, then transloaded into a government-owned container for movement in the combat area. This policy was implemented only after thousands of commercial containers had been sent forward and were utilized for storage. Support to Operation Enduring Freedom could not be supported with a transload due to lack of U.S presence at the port and terrain constraints in the operating area. In that operation, commodities such as operational rations and class IV construction materiel were sent forward in government-owned containers that were purchased as part of the normal requisition process. These commodities were rapidly consumed, freeing the container to remain forward for use as a storage capability without incurring excessive costs.

Each contingency will be different in terms of enemy activity, distance from the port to forward units and expected duration. Use of government-owned containers in the early stages of an operation will prevent the excessive costs associated with commercial containers while still meeting the operational needs of the warfighter to provide storage solutions at forward operating bases.

Figure 3-5. Container Management Vignette

RETROGRADE OPERATIONS

3-50. **Retrograde of materiel is the return of materiel from the owning/using unit back through the distribution system to the source of supply, directed ship-to location and/or point of disposal.** Retrograde operations will take place as a normal part of theater operations and as part of redeployment operations. When designated by the GCC or upon completion of theater operations, units, personnel and equipment will become part of retrograde operations. At a minimum, successful retrograde operations should cover two areas: classes of supply/consumable items and cargo/equipment.

CLASSES OF SUPPLY AND CONSUMABLE ITEMS

3-51. Items determined to be excess will be turned in using the standard procedures contained in AR 710-2 and associated pamphlets. Packaging and preservation may be required to protect the items while in transit. To prevent deterioration and damage, consumable, repairable and serviceable excess returns for credit will be returned in the original pack or in a pack which is the equivalent of the original pack. To minimize the possibility of credit loss, it is imperative that the item not be removed from the original pack until ready for use.

Usable Property–Serviceable and Repairable Property

3-52. DLA, through its field activity the Defense Reutilization and Marketing Service (DRMS), will provide the maximum amount of property disposition services as is practical within the AOR. These services will be provided on a reimbursable basis, and DRMS or DLA disposal personnel will require logistics support. These services include the following:

- The provision of technical assistance to commanders. This can include management services for hazardous waste management and disposal, technical assistance regarding demilitarization and trade security control requirements, and advice on disposal requirements. It does not include the provision of disposition instructions for property or the proper supply condition code for property as those functions are a Service responsibility.
- The receiving, storing, and issuing of federal excess personal property (FEPP). The FEPP is U.S. Government property physically located outside the United States and its territories. Although disposal requirements are generally the same as inside the United States, all disposal requirements outside the United States for FEPP are subject to change and the specific requirements of the Department of State. Serviceable and repairable items will only be received by DRMS in locations where further disposal action is possible.
- The provision of reutilization, transfer, and donation services. Reutilization is the redistribution of excess items within the DOD and can be a significant part of intratheater excess redistribution. Transfers to other federal agencies and donations to authorized recipients are

subject to the rules of the Department of State and will vary from country to country and operation to operation.

- The provision of coordination for humanitarian assistance programs (HAPs).
- The conduct of sales. The ability of DRMS to conduct sales in a given country depends on authority being granted by the Department of State and the HN, and the rules made by the Department of State and HN regarding the conduct of those sales. All such sales are essentially exports of U.S. property from the United States and are subject to U.S. export restrictions.
- The administering of abandonment and destruction.
- The overseeing of the disposal of all hazardous material (HM) or hazardous waste (HW). To the extent possible, the centralized disposal activity shall physically accept and process all property for which it has responsibility. For further specific information, see DOD 4160.21-M, Defense Materiel Disposition Manual. The Defense Materiel Disposition Manual, and DOD 4160.21-M-1, The Defense Demilitarization Manual.

Considerations by Supply Class/Commodity

Class I

3-53. Retrograde and return of Class I materiel is not normally done due to health concerns. Class I items certified no longer fit for human consumption by medical or veterinary personnel are surveyed according to applicable Service procedures. DRMS will assist in the disposal of packaged operational rations as hazardous waste.

Class II

3-54. Because Class II items are generally low cost or bulky, a key retrograde consideration is the economic trade off of in-theater disposition vice movement back to CONUS. General guidance is to consume or transfer Class II items instead of returning them to CONUS. Class II consumables are used by most military units and are typically a prime candidate for cross leveling. Some Class II materiel, including uniforms with the introduction of "friend or foe" technology, may require demilitarization prior to acceptance by DRMS for disposal. Special care must be taken by Service component generators of excess and DLA disposal personnel to ensure that demilitarization requirements are met for prescribed items prior to disposal. The cost and difficulty of performing demilitarization of these items in theater may lead to retrograde as a disposal solution.

Class III

3-55. Theater inventories of bulk Class III stocks are controlled by the Joint Petroleum Office and will be redistributed or disposed of at the conclusion of operations. Return of Class III products to stock must include provisions to ensure that returned materiel still meets quality standards. Excess and waste Class III products require disposal by trained personnel. This task is normally performed in coordination with Service component generators by DLA disposal personnel and DRMS licensed contractors by arrangement with DRMS and the appropriate HN authorities. In areas where the United States conducts contingency operations, there are rarely indigenous hazardous waste disposal facilities which meet U.S. standards either because local standards were not that high or those facilities have been destroyed. Either way, the lack of adequate facilities means HW must be taken from the theater for proper disposal, and that becomes a function of the distribution system. The International movement of hazardous wastes is governed by international agreements and obtaining contract support according to with those agreements can be a lengthy process. Operational units must collect and store hazardous wastes in an environmentally compliant fashion pending the removal by a qualified contractor.

Class IV

3-56. Excess construction materiel is usually readily usable in theater and should be transferred to other military activities. Usable Class IV generated as excess by Service components may be transferred to other U.S., HN, or multinational forces after being turned in with turn-in or transfer documentation to DRMS for disposal action. Donation by appropriate authorities to local entities is also possible, and Class IV property will not generally be considered for retrograde or redeployment.

Class V

3-57. Class V items require Soldier maintenance and stock management to assure the item is ready for use. These actions are conducted at munitions storage sites, but also may be conducted by trained personnel in theater. Class V items are usually moved back to authorized storage facilities following contingency operations. Materiel managers may use this return process as an opportunity to cross level inventories between theater army, dispose of excess/obsolete munitions through the Foreign Military Sales (FMS) process, or dispose of unserviceable/non-repairable munitions stocks. Class V disposal is subject to stringent safety and security restrictions, including demilitarization requirements. Demilitarization encompasses a wide range of processes, including disassembly, resource recovery and reuse, and treatment of explosive materials for disposal. The U.S. Army is the primary Service responsible for the demilitarization of military munitions. Munitions demilitarization is conducted at a designated military treatment site. Ammunition may be retrograded for demilitarization and disposal action or destroyed locally with host nation agreement. Items that are or have been exposed to ammunition or explosives, such as fired brass, ammunition boxes, ammo pouches, and so forth, must be certified as inert before being turned over to DRMS for disposal. Some factory ammunition boxes, inner packaging material, metal containers, and specialized storage/shipping containers may be retained by theater storage sites to be used to repack loose, serviceable ammunition in approved shipping configuration. This allows the items to be returned to the stockpile.

Class VI

3-58. Class VI materiel is not turned into DRMS for disposal unless required by status-of-forces agreements (SOFAs) or other HN agreements.

Class VII

3-59. Reparable Class VII items are returned to maintenance for overhaul or repair. Because of the limited number of operational spares, timely retrograde of damaged items and repair is critical to maintain Service force readiness levels. Class VII reparable assets should not be surveyed and transferred to disposal activities without specific approval from the program or materiel manager. In some instances, such as vehicle or aircraft accidents, engineering and safety investigations may require resolution prior to disposal. Demilitarization actions must be coordinated with DRMS prior to transfer to disposal.

Class VIII

3-60. The rapid return of reparable Class VIII medical equipment to repair facilities is critical to returning the item to the supply system or back to its original owner. Disposal of Class VIII items must be carefully monitored and coordinated with Service component medical logistical personnel. This is especially important because of the sensitivity and health risks associated with the materiel. Expired nonradioactive and unusable medical supplies (exception FSC 6505) are disposed of through DRMS activities. Federal Supply Classification 6505 items will be returned to the medical supply support activity for consideration for turn-in to prime vendor. The sensitivity of some medical items and their potential use by terrorist organizations may require the retrograde of some medical equipment for disposal. Refer to Supply Bulletin 8-75-11 and FM 4-02.1 for additional information.

Class IX

3-61. Usable excess consumable items and all reparable items are reported to the materiel manager for return, intratheater redistribution, or disposition decisions. Reparable items are returned to the established source of supply for repair and subsequent return to the global distribution system. Intensive programs have been established to monitor reparable issues and returns, simplify the return process, and create incentives for operating forces to minimize losses. Loss of a reparable component robs the system of a needed item and imposes additional time and cost to replace the lost item. ITV of retrograde reparable items is mandatory to minimize reparable item loss or delay. Serviceable items that are simply excess to unit needs must be captured and provided visibility so they may be redistributed in the theater and reduce the time and cost of replacements.

Class X

3-62. Class X items are not DOD-owned property and are expended at the point of transfer to the designated nongovernmental organization (NGO) or civil populace. Class X materiel is normally not returned once transferred to the designated recipient.

CARGO AND EQUIPMENT

3-63. Retrograde cargo and equipment will be cleaned and prepared for shipment to demobilization/home station or another theater of operation. Inspection of retrograde cargo and equipment will be performed by U.S. Department of Agriculture and U.S. Department of Homeland's Customs and Border Protection inspectors working on site at centralized wash down locations. A U.S. customs certification seal will be placed on the container or vehicle by the certifying customs inspector after equipment has passed inspection. A U.S. Customs Seal will be placed on the outside of all containers and vehicle compartments during the inspection acknowledging that no contraband or illegal items are stored on the vehicle. Certified and inspected retrograde equipment will be moved to a sterilization yard controlled by military police and Customs Border Protection until movement to the SPOE for shipment to demobilization/home station or its ultimate destination. Empty container roll in/roll out platforms, containers, and other conveyances may used to retrograde excess supplies and reparables back through the distribution pipeline and will themselves be retrograded for future reuse.

3-64. Radio frequency/automated information technology will be used to provide visibility of the distribution conveyances as they move within theater as well as when they depart the theater. This capability resides at the first SSA level of support. This is the point at which the data is captured and fed into the STAMIS.

AERIAL DELIVERY DISTRIBUTION

3-65. Aerial delivery distribution provides an efficient and effective means of conducting distribution operations. It supports units in various operational environments where terrain limits access. It can be used for routine and urgent deliveries of sustainment. Aerial delivery acts as a combat multiplier because it is effective means of by-passing enemy activities and reduces the need for route clearance of ground lines of communication GLOCs.

AIRDROP DISTRIBUTION OPERATIONS

3-66. Airdrop is the air-to-ground delivery of platform loads from an aircraft in flight. Airdrop operations provide the ability to distribute cargo, using parachutes and platforms to release supplies and equipment from an aircraft while in flight. Airdrop methods include both high and low altitude release capabilities. While still considered niche capability, the airdrop method offers significant growth potential as it supports numerous nontraditional users and has many employment applications.

JOINT PRECISION AERIAL DELIVERY SYSTEM (JPADS)

3-67. The Joint Precision Airdrop System (JPADS) is a high altitude, precision guided airdrop system that provides increased control release from the aircraft, and reduces on ground load dispersion with accuracy. Traditional airdrop required aircraft to fly at lower levels and slower speed. This made aircraft targets for enemy fire. JPADS increases aircraft safety by allowing loads to be dropped from a higher altitude into a smaller drop zone. JPADS can operate from altitudes of 24,500 up to as high as 35,000 ft mean sea level, and exhibit extraordinarily improved ground accuracies. JPADS is controlled by the assistance of a mission planner laptop with precision airdrop applications, meteorology data gathering kit, and global positioning system re-Broadcast kit.

3-68. The mission planner enables aircrews to plan and initiate load release at a precise computed air release point (CARP) or within a launch acceptance region (LAR) through application of accurate JPAD component modeling. The mission planner provides the capability to model parameters of aircraft position, altitude, airspeed, heading, ground speed, course, onboard load position (station), roll-out/exit time, decelerator opening time, and trajectory to stabilization and descent rate.

TYPES OF AIRDROP

3-69. There are three types of airdrop. The type used for a specific mission depends on what is to be dropped, how much accuracy is required, the threat situation, and airdrop equipment available.

Freedrop

3-70. Freedrop is the preferred type of airdrop to deliver humanitarian daily rations and nonfragile items. Parachutes or other devices that decrease the rate of descent of supplies are not used; however, in some cases, energy-dissipating material (such as honeycomb) may be placed around the supplies to lessen the shock when the load impacts with the ground. The load descends at a rate of 130 to 150 feet per second. Baled clothing, fortification, and barrier materials are other examples of non-fragile items that can be freedropped successfully.

High Velocity Airdrop

3-71. High-velocity airdrop is used when threat conditions dictate that the aircraft remain at high altitudes to avoid hostile air defenses but, for accuracy, drift must be minimized. Here, a small parachute provides enough drag to hold the load in an upright position while allowing a descent rate of 70 to 90 feet per second. The rapid rate of descent mitigates drift. Energy absorbing material is used to reduce the effect of the ground impact. Class I, Class III(P), and Class V are the most probable candidates for this type of delivery.

Low Velocity Airdrop

3-72. Low-velocity airdrop can be used for all supplies and equipment certified for airdrop and is the preferred type, all other factors being equal. Multiple parachutes can be used to achieve the desired rate of descent, no more than 28 feet per second. Many of the Army's light and medium tactical wheeled vehicle fleet and Class IX major assemblies are delivered using this method.

SLING-LOAD DISTRIBUTION OPERATIONS

3-73. The helicopter sling load method of carrying cargo and equipment overcomes many of the obstacles that hinder other modes of movement. Helicopter sling-load operations are used extensively in the ship-to shore movement of cargo and equipment during amphibious operations, movement of supplies and equipment over operational environment, vertical replenishment of forward units, and firepower emplacement.

CLASSIFICATION DEFINITIONS OF SLING LOAD

3-74. All sling loads are classified under one of three definitions. Those definitions are—

- **Certified Sling Loads.** Certified sling loads are those items of equipment and their associated rigging procedures which have completed the evaluation and testing required by the U.S. Army Natick Soldier Center (NSC) for sling load certification.
- **Suitable Sling Loads.** Suitable sling loads are those items of equipment and their associated rigging procedures that have not been certified but have demonstrated acceptable static lift and flight characteristics during a flight test. In most cases these loads were not pull tested in accordance with MIL-STD-913, but are known loads which have been flown without incident for years and which NSC considers to be proven safe.
- **Unique Sling Loads.** Unique loads are equipment carried on a one-time or low-frequency basis, such as telephone poles, artillery targets, or barrier material. The lack of sling load certification in itself does not preclude a commander from carrying a unique load. Due to the lack of rigging procedures, unique loads should be considered high risk loads. The movement of unique loads should be approved by the high-risk approving authority.

Chapter 4
Movement Control In Distribution

Movement control is the planning, routing, scheduling, control of personnel and cargo movements over line(s) of communication. It requires a commitment of allocated transportation assets according to command planning directives. Movement control is used to help distribute resources based on the JFC's priorities, and to balance sustainment requirements against transportation capabilities. This chapter will discuss the roles of organizations and commands responsible for conducting movement control. It will include a discussion on theater movement control boards, DMC, mobility branch, movement program execution, and movement control battalions and movement control teams.

4-1. The theater movement program is planned by the TSC's/ESC's DMC. The DMC synchronizes and executes designated priorities for support and movements from the strategic to operational levels. Coordination between the strategic to theater movement is accomplished by the JDDOC and DMC.

THEATER MOVEMENT CONTROL BOARDS AND CENTERS

4-2. The strategic and operational movement information, coordination, and synchronization are managed through the establishment of boards and centers. The following discusses the Theater-Joint Transportation Board, Joint Distribution Board, Joint Deployment Distribution Operations Center and Joint Movement Center.

THEATER-JOINT TRANSPORTATION BOARD (T-JTB)

4-3. The JFC may establish a T-JTB to review and manage policies, priorities, and transportation allocation. The T-JTB provides the JFC with the capability to change transportation resource allocation and adjust to changing circumstances or emergency situations. The T-JTB's role is to resolve transportations issues within a JFC's AOR. The T-JTB consist of representatives from the Service components, movement control agencies, and the command J3 (Operations), J4 (Logistics), and J5 (Plans and Policy). The TSC provides Army support if a T-JTB is established.

4-4. The T-JTB is an ad hoc organization and established when directed by the JFC. The JFC determines the chairperson for the T-JTB (normally the J4). The T-JTB's major responsibilities include reviewing and recommending priorities and policies, recommending asset allocation, and resolving conflicts between Service component commands.

JOINT DISTRIBUTION BOARD (JDB)

4-5. The JDB provides theater movement controllers with updates on distribution priorities, major unit moves, and a means to provide input concerning changes to main supply route (MSR) and area status. It provides an operational to tactical view of the theater movement program. The TSC/ESC may establish a JDB to review daily distribution priorities and resolve transportation asset conflicts. JDB participants are, but not limited to—

- ASCC sustainment cell.
- TSC/ESC DMC.
- SUST BDE SPO.
- Corps transportation officer (CTO).

- Division transportation officer (DTO).
- MCB and MCTs.

JOINT DEPLOYMENT DISTRIBUTION OPERATIONS CENTER (JDDOC)

4-6. The JDDOC supports theater movement control by resolving movement conflicts and transportation request that exceeds TSC capability. The JDDOC supports the theater by serving as a link between multiple organizations, including coalition partners, commercial transportation, NGO liaison elements, and national partners. It can also coordinate and synchronize joint and coalition movement request within theater.

JOINT MOVEMENT CENTER (JMC)

4-7. The JMC coordinates the employment of theater transportation (including that provided by allied or host nations) to support theater operations. It oversees the execution of theater transportation priorities. It is also responsible for planning movement operations and for monitoring the overall performance of the theater transportation system. In the absence of a JTB, the JMC is the primary advisor to the JFC in the transportation allocation process. The JMC identifies the difference between forecasted requirements and current capabilities of all modes to assist in the planning process.

4-8. The JMC is organized along functional lines and is designed with a peacetime nucleus that can expand in proportion to the size of the joint forces and the desires of the JFC. A fully developed JMC will have an administrative section and two divisions such as plans and programs and operations. The combatant commander will first use his own staff and Service component staff personnel resources for the nucleus of the JMC. When expanding a JMC, the JFC will consider the structure of his dominant force and component-unique movement control requirements. The JFC may also draw on reserve personnel to augment the JMC. The JMC's major responsibilities include the following:

- Planning theater transportation by land, sea, and air (excluding bulk liquid fuel that moves by pipeline). Allocating transportation capability available within the theater among the projected transportation tasks and components.
- Monitoring sea and air deployment and recommending changes to movement requirements in Joint Operation Planning Execution System (JOPES). Reviewing and validating sea channels.
- Monitoring container control activities of all joint force components. Managing transportation requirements that cannot be met at lower levels in the movement control system.

DMC, MOBILITY BRANCH

4-9. The mobility branch conducts movement control by managing transportation assets. This is done through coordination with the supporting MCB. The mobility branch—

- Provides guidance, plans, policies, and staff supervision for movements. This includes theater highway regulation (both road and rail), traffic circulation, and maneuver and mobility support OPLANS.
- Coordinates with supply and distribution integration branches for distribution management of all commodities (less Class VIII and communications security equipment), passenger, and unit movements (RSOI, redeployment, and retrograde).
- Functions as the executive agent for movement control by overseeing the development and implementation of the movement program executed by the movement control battalion (MCB).
- Provides supplemental modal movement management for personnel and materiel, except bulk Class III by pipeline, within, into, or out of theater.
- Manages United States and host nation transportation assets identified as common user. Also, provides theater level liaison to host nation(s) and for contracted assets.
- Serves as container, flat rack, and air pallet manager and coordinates all aspects of intermodal container use.

- Manages container operations to include synchronizing support to retrograde operations with priority being return of ISO shipping containers, aerial delivery platforms, and flatracks to the distribution system.
- Enforces priorities for air, water, and land transportation (both road and rail) established by the theater army and the supported combatant commander.

PREPARING AND EXECUTING MOVEMENT PROGRAM

4-10. The theater movement program serves as an authority to commit transportation assets. It authorizes the MCTs to issue transportation movement releases (TMR), directs mode operators to furnish assets, arrange commercial movements, and alerts receiving units to accept programmed shipments so that they can unload transportation assets promptly.

4-11. An effective theater movement program is vital for operational support. Units are required to provide accurate data when identifying transportation requirements and inform movement planners of current and future operations. Movement planners must be flexible due to changing priorities, requirements, asset availability, and LOC status. Movement plans should have developed courses of action based on changing situations and priorities. The MCB requires a sufficient number of MCTs and communications equipment to conduct movement control and provide operational flexibility. To plan an integrated distribution system, the following logistics planners must coordinate the movement program:

- ASCC sustainment cell.
- TSC/ESC DMC.
- SUST BDE SPO.
- Corps transportation officer/division transportation officer.
- Joint Movement Center (JMC).
- MCB and MCTs.

4-12. The preparation and execution of the movement program consists of 10 steps. These steps are discussed in the following paragraphs.

ASSESS THE DISTRIBUTION SYSTEM

4-13. Assessing the distribution system requires a review of the complete logistics picture that shows the port and supply locations, nodes, and maintenance and transportation activities. This assessment allows planners to know where and how support normally flows and where it may be diverted as operational needs dictate. The distribution system constantly evolves as the theater develops. The commander's concept of operations, number, types, and locations of units guide development of the distribution system.

4-14. Movement planners use this assessment to develop the transportation network. The assessment evaluates the complete system of routes pertaining to all modes of transportation available in the theater. Movement planners assess intelligence and engineer information on the theater to determine the capabilities of available transportation networks. They analyze the enemy situation to determine existing or potential threats to movement. Concurrently, they assess the suitability and feasibility of moving supplies and personnel over those transportation networks. Based on these assessments, movement planners recommend locations for transportation units and modes to make full use of the transportation networks.

4-15. Movement planners coordinate with shippers and receivers at various nodes to assess their capability to receive, handle, and load materiel shipped by various transportation modes. This capability is based on the availability of MHE, ramps, labor, storage capacity, and other factors that affect transportation services. This information is necessary to efficiently schedule transportation and prevent congestion.

DETERMINE REQUIREMENTS

4-16. An effective movement program depends on requirements determination. Movement requirements must be forecasted and submitted far enough in advance for the transportation and supply systems to adjust their resources.

4-17. Movement planners use planning periods for forecasting requirements. The length of these periods is determined upon the number and frequency of changes that may be experienced or anticipated. A 10-day planning period is desirable to allow a firm forecast of requirements for the current 5-day period and a tentative forecast for the succeeding 5-day period. With a 10-day planning period, a new planning cycle is initiated every five days. The availability of information that integrates movement and supply information increases the accuracy of forecasts. It also allows for more accurate movement programming.

4-18. Materiel movement requirements are developed in support of on-going or planned tactical/combat operations, and grouped by classes of supply, estimated weight and cube, required delivery date (RDD), priority, origin, and destination. Special handling requirements such as refrigerated cargo, hazardous cargo, and controlled or sensitive cargo should also be identified.

4-19. Personnel movement estimates are grouped by category such as troops, civilians, patients, and prisoners of war. Subordinate units must provide their movement requirements that exceed organic transportation capability for inclusion in the movement program.

DETERMINE CAPABILITIES

4-20. Movement planners throughout theater determine the number of transportation units and their equipment available to support common-user movement requirements. Other factors include: total number of host nation (HN) transportation assets (commercial, rail, inland waterways, and coastal shipping), U.S.-contracted assets, and reception, MHE, and in-transit storage capabilities. Movement planners must update capabilities with changes as they occur and adjust movement programs accordingly.

4-21. Theater airlift and airdrop may be planned for if the JTB or JMC allocates air assets for logistics air movement operations within the theater. The TSC/ESC will determine allocations airlift based on command priorities.

BALANCE REQUIREMENTS AGAINST CAPABILITIES

4-22. Balancing requirements against capabilities determines whether the available transportation assets will support movement requirements. Planners determine the workload for each transportation asset and segment of the transportation network. This is not limited to simply programming the use of available transportation capability.

4-23. Planners should also consider the capabilities of the transportation network. For example, if a critical shipment must move into an area that is accessible by multiple road routes, and only one rail route, the most probable option may be to program the movement by motor transport.

4-24. If planners identify transportation shortfalls, they will plan movement according to command priorities and the transportation shipment priority. The remainder will be adjusted and coordinated with the shipper, receiver, materiel managers, and logistics staffs.

DETERMINE CRITICAL POINTS

4-25. Movement planners must identify critical points where restrictions could slow or stop movement. Congested critical points limit the efficiency and effectiveness of the entire transportation network. Critical points include, but not limited to, terminals, ports, bridges, tunnels, intersections and cargo transfer points.

4-26. After identifying the critical points, planners are required to determine alternate plans or control measures that reduce or eliminate the risk of congestion. The MCB will place a MCT on the ground where the problems are expected so they can respond before delays congest the system. They should coordinate with the engineers and military police for support where necessary.

DETERMINE CHECK POINTS

4-27. Checkpoints should be easily recognizable features that can be clearly identified on both the MSR checkpoint list and on the route. Checkpoints provide a ready reference data about the MSR network such as link numbers, feeder routes into the MSR, and distances. Movement control personnel and customers can use

this information to identify what path to use from origin to destination and to identify segment numbers for use in requesting movement bids and receiving march credits. Automated information technology devices can be used to report the passing of vehicles and convoys at checkpoints or they can be physically manned or when the vehicle or convoy passes the checkpoint it can just be reported by the Blue Force Tracker or some other source of communication.

DETERMINE SHORTFALLS AND RECOMMENDED SOLUTIONS

4-28. Once shortfalls between movement requirements and available transportation assets are identified, solutions must be developed. Planners must determine the best COA for resolving the shortfall.

COORDINATE THE PROGRAM

4-29. Planners and distribution managers coordinate the movement program with operations, supply, MPs, engineer, and air staffs to delineate responsibilities during execution. Coordination is conducted during development and after publishing to ensure integrated planning and coordinated execution.

4-30. The MCB distributes the movement program to each command for comment and concurrence. During this phase, the program is used to facilitate planning and to show the evolving distribution patterns and projected logistic activity but does not authorize shipments to take place. It becomes a directive once it is approved by the assistant chief of staff, logistics, G4.

FORMAT AND PUBLISH THE PROGRAM

4-31. The movement program is published with assigned program line numbers. Each line number identifies a movement requirement that is either cargo or personnel. This line number is used to identify the requirement and provide additional information throughout the development of the movement program. More on this can be found in chapter 7, FM 4-01.30, *Movement Control*.

EXECUTING THE MOVEMENT PROGRAM

4-32. Activation of a movement program line number begins when the shipper contacts its supporting MCT and requests its line number be activated. The MCT will coordinate with the MCT at the destination and receiver when a positive inbound/outbound clearance is required. If command priorities change during the program execution and the changes affect program executions, the MCTs will coordinate with affected shippers and receivers.

Port Clearance

4-33. The DMC begins preparing the port clearance program as soon as it receives advance manifest data from CONUS ports, terminal units, or other ports of origin. Once the manifest is available, the port clearance MCT programs transportation assets based on anticipated arrival date, and activate line numbers and/or programs. If a shipping delay or diversion occurs, the DMC provides input to the port commander. A close working relationship between the DMC and MCB is required to program and expedite moving non-unit equipment and supplies, especially those shipped in containers.

THEATER MOVEMENT CONTROL ORGANIZATIONS

4-34. Theater movement control organizations subordinate to the TSC/ESC are responsible for all materiel and cargo movements in theater distribution. These movements are controlled by the MCB and its MCTs. The division transportation and corps transportation officers track, deconflict and approve movements in their battlespace on behalf of battlespace owners.

MOVEMENT CONTROL BATTALION (MCB)

4-35. The MCB is attached to the TSC/ESC and controls the movement of all forces, equipment, materiel, and sustainment within theater. It commands between 4 and 10 movement control teams (MCT) and is responsible to the TSC/ESC for the execution of the theater movement program. The MCB provides transportation asset visibility and coordinates the use of common-user land transportation assets, intermodal container assets such

as ISO containers, 463L pallets, and flatracks. The MCB also provides in-transit visibility of unit moves and convoy movements.

4-36. The MCB coordinates with host nation authorities for cargo transfer locations, road clearances, border (land gateway) clearances, escort support, and additional transportation support. The MCB will control as many subordinate MCTs as required based on the number of customers, air terminals, rail terminals, seaports, and MSRs.

4-37. The TSC may divide the theater into transportation movement regions. This approach permits centralized control by the TSC and allows the MCB mission command of movement control functions.

MOVEMENT CONTROL TEAMS (MCT)

4-38. The MCT is a 21-Soldier team created with the capability to perform movement control missions to include port, area, movement regulation, and cargo documentation. Their role is to expedite, coordinate and monitor traffic moving through the theater distribution system. Each team has a headquarters section and four identical subunits (or sections). The MCT can operate as a single team or separately at up to four different locations. MCTs are the common point of contact for mode operators and users of transportation.

4-39. A single MCT can be tailored to the mission and operational environment. It can be split into four sections in different locations. As the mission expands, the team can deploy a section onto the MSRs to conduct highway regulation and movement control. As the operation matures, that same MCT can operate at a second airfield or seaport. Units requiring movement support exceeding organic transportation assets submit transportation movement request to the MCT. The MCT will forward the request to the MCB to determine mode (airdrop, fixed wing, rotary wing, truck, rail, or waterway).

4-40. MCTs are placed at various nodes that best support the TSC concept of support. A MCT may collocate with a SUST BDE to provide movement control support on an area basis. An additional MCT can work directly for the division transportation officer (DTO) to assist in the planning and execution of movement control in the division AO. Elements of a MCT may locate at other nodes such as centralized receiving and shipping point (CRSP), Convoy Support Center (CSC), and container yards. MCTs enforce the highway regulation plan established by the TSC/ESC and may deploy its sections along MSRs to assist with convoy tracking.

DIVISION TRANSPORTATION OFFICER (DTO) ROLES AND RESPONSIBILITIES

4-41. The DTO is a staff planner who coordinates with the division sustainment cell and movement and maneuver cells on tactical moves, operations, logistical, and administrative matters. The DTO is responsible for movement control planning and transportation management functions within the division area. The DTO coordinates with transportation planners and managers at the division and Corps level for requirements coordinated outside the division area.

4-42. The DTO is the primary advisor to the division commander and participates in the military decision-making process as a member of the division staff on transportation matters. The DTO coordinates plans and actions with the provost marshal (PM), division engineer, CTO, and others as required. The DTO is the focal point for transportation technical guidance and assistance to the division.

CORPS TRANSPORTATION OFFICER (CTO) ROLES AND RESPONSIBILITIES

4-43. The CTO is a staff officer who works for the corps. The CTO coordinates with the sustainment cell and movement and maneuver cell during unit movement, force tracking and maneuver planning, and assesses the impact of these operations on transportation requirements and highway regulation in the corps area. The CTO advises the sustainment cells and movement and maneuver cells on logistical and unit movement requirements, which includes support of reception and onward movement of forces, replacement operations, and reconstitution. The CTO assesses the overall effectiveness of movement programs and recommends the types of transportation units and assets required to accomplish the corps missions.

Chapter 5
Materiel Management and Supply

Materiel management functions are the warehousing, managing, cataloging, requirements determination, requirements validation, and prioritization for procurement, distribution, redistribution of excess, and retrograding of materiel. Materiel managers in the DMC are responsible for managing materiel within theater and executing the priorities established by the GCC. This chapter discusses how materiel management and supply activities are conducted in theater.

MATERIEL MANAGEMENT FUNCTIONS

5-1. The theater distribution system allows units to request, receive, store, maintain, distribute, retrograde, and control the flow of resources. The DMC executes materiel management functions at the TSC/ESC enabling a theater-wide visibility of materiel. It performs materiel management for all classes of supplies (less medical and communications security equipment) and maintenance management for those activities for which the TSC has control and responsibility. The materiel management functions are discussed below.

WAREHOUSING

5-2. Materiel managers use warehousing as a means to organize, sort, and safeguard materiel. The function of warehousing is the process of receiving, storing, issuing, securing, and accounting for materiel. Warehousing does not imply the use of fixed facilities and can be performed in tents, containers, or an open area.

MANAGING

5-3. Materiel managers maintain accountability and visibility of materiel and cross-level materiel to fill shortages and ensure materiel is available to meet operational needs. They use the function of managing to monitor and control materiel in theater.

CATALOGING

5-4. Materiel managers must properly catalog materiel to maintain visibility. They need the correct identification and location for materiel stored in warehouses to meet requirements. Unidentified, improperly cataloged items require materiel managers to order materiel that may end up as excess materiel in theater.

REQUIREMENTS DETERMINATION

5-5. Requirements determination aid materiel managers in defining capabilities to support anticipated workloads. Materiel and distribution managers must have visibility of all requirements to ensure the distribution system effectiveness. Requirements are determined by identifying all resources based on materiel release orders and transportation requests. Other activities such as mail, medical support, and personnel replacement place requirements on the distribution system.

REQUIREMENTS VALIDATION AND PRIORITIZATION

5-6. Materiel managers are required to validate all requirements against commander's priorities. Validation and prioritization is the function of certifying movement and resource requirements against commander's priorities. They allocate the necessary support needed to execute validated requirements and support the commander's priorities.

DISTRIBUTION

5-7. Distribution is the operational process of synchronizing all elements of the logistics system to deliver the right things to the right place at the right time to support the combatant commander. Materiel managers require visibility of materiel moving through the theater distribution system and the decision points for making changes to fulfill shortages, priorities, and operational needs.

REDISTRIBUTION

5-8. Materiel managers use the function of redistribution to reallocate excess materiel to other locations in theater. Materiel managers eliminate excess materiel in theater through redistribution to fill shortages and requirements.

RETROGRADE

5-9. Retrograde is the return of materiel from the owning/using unit back through the distribution system to the source of supply, directed ship to location and/or point of disposal. Materiel managers may use the retrograde process to redirect sustainment to different locations to fill shortages and meet requirements. More on retrograde can be found in chapter 3.

SUPPLY

5-10. **Supply is the procurement, distribution, maintenance while in storage, and salvage of supplies, including the determination of kind and quantity of supplies (FM 4-0)**. Supply operations with total asset visibility enablers merge the tactical, operational, and strategic levels into a seamless supply system. The automated management system allows a unit to place their requests and assists sustainment units in providing responsive support in a timely manner.

5-11. Forward support companies maintain a minimal level of combat essential supplies to satisfy high-priority requisitions and to account for minor interruptions in the distribution system. The number of items maintained is based on anticipated wartime usage rates. Beginning with the transition-to-war time phase, the number of items maintained is adjusted to the wartime demand.

5-12. The TSC provides direction for receipt, storage, and issue of theater stocks. When the required stocks are not available or stock replenishment is required, requirements pass to the appropriate CONUS national inventory control point (NICP). Arriving shipments are routinely throughput from the port directly to the BSB then to the forward support company (FSC). With the exception of Class V, throughput routinely makes up 70 percent or more of the flow of supplies within the theater distribution system. Otherwise, shipments are directed to distribution terminals for reconfiguration or to an appropriate general support storage activity in the theater.

CLASS I

5-13. Class I items are initially pushed from CONUS or other locations to the theater. The mix of perishable and semi-perishable rations depends on the JFCs feeding policy, the arrival dates of units capable of handling Class I items, and the availability of refrigerated storage.

5-14. Class I supplies arriving in the theater are moved to a theater distribution center (TDC) capable of handling them. TDC issue Class I items to their customers, the consuming units. They stock Class I supplies based on unit strength reports submitted by the units they support. Currently, the supply point method is used to issue Class I items to consuming units.

CLASSES II, III (PACKAGED), AND IV

5-15. Classes II, III (Packaged), and IV represent a broad range of general supplies. Class II consists of common consumable items such as clothing, individual equipment; tentage; tool sets and kits; maps; administrative/housekeeping supplies; and chemical, biological, radiological, and nuclear (CBRN) protective equipment. Class III (Packaged) consists of packaged petroleum oils and lubricants (POL) products that can be handled in basically the same manner as dry cargo. Class IV consists of fortification, barrier, and construction

materials. They are issued to consuming units when requested. Typically, these items move via surface transportation.

CLASS III (BULK) SUPPLIES

5-16. The TSC centrally manages, controls, and allocates it according to the GCC priorities. The SUST BDE commander, in coordination with the TSC, is responsible for providing bulk petroleum to supported forces. Support to multinational forces is based on memorandum of agreement (MOA).

5-17. Distribution planning is the basis for the design, construction, and operation of the theater petroleum distribution system. The SUST BDE commander is also responsible for quality surveillance and liaison with the supported forces.

CLASS V

5-18. Materiel managers must be aware of distribution requirements to support pending operations and/or changes to the CSR. Class V distribution is a high priority, controlled event that places additional strain on the distribution system. The sustainment brigade that operates the theater storage area (TSA) must keep the DMC informed of changes and limitations to Class V distribution. The TSA maintains the theater Class V stocks. Its mission is to receive Class V from the national level and conduct operational level reconfiguration. Sustainment brigades distribute Class V forward to ammunition support activities (ASA) at distribution hubs and to BCT ammunition transfer holding points (ATHPs).

CLASS VI

5-19. Army and Air Force Exchange Service (AAFES) sales teams, operating fixed-area facilities and tactical field exchanges, may establish essential post exchange services at the operational and tactical levels. In the early stages of an operation, essential exchange stocks may be turned over to the theater supply system. Health and comfort packs (HCPs) provide everyday necessities when AAFES is not available. Delivery of HCPs is based on headcounts provided for field feeding. Health and comfort packages contain health and sanitation items such as toothbrushes, toothpaste, razors, and personal demand items. The HCP-type II contains additional health and comfort items for female Soldiers. As the theater matures and conditions permit, exchange activities can be established or expanded and a wider variety of items can be sold. Class VI items forwarded to the theater are based on personnel strength figures.

CLASS VII

5-20. Class VII supplies consist of major end items such as weapon systems (launchers, tanks, and so forth), communication systems, automated data processing systems, mobile machine shops, and vehicles. Major end items are a combination of products that are ready to use. They represent a low percentage of total line items but a high percentage of the total dollar value of the Army inventory. Due to the high dollar cost and their overall importance to combat readiness, major end items are controlled through the TSC command channels. The requisitioning, distribution, maintenance, retrograde and disposal of these items are intensely managed at each support level to ensure visibility and operational readiness.

CLASS VIII (MEDICAL MATERIEL INCLUDING MEDICAL REPAIR PARTS)

5-21. Army medical logistics (MEDLOG) support (including blood management) is an integral part of the Army Health System (AHS). Medical logistics is distinguished from line logistics in that its products and services are used almost exclusively by the medical system. The MEDLOG system provides specialized materiel required by the AHS to reduce morbidity and mortality among Soldiers, while line logistics focuses on the sustainment of major end items and general troop support to maximize combat power.

5-22. The medical products and services provided are critical to the success of the AHS support mission and are subject to the same strict standards and guidelines that govern the health care industry in the United States. Another key to this success is the delivery of a MEDLOG capability that anticipates the needs of the customer and is tailored to continuously provide end-to-end sustainment of the AHS mission throughout full spectrum

operations. Providing timely and effective AHS support is a team effort which integrates the clinical and operational aspects of the mission. The provision of MEDLOG support requires collaboration between the medical logisticians, clinicians, and other health care providers on the battlefield and encompasses the following functions:

- Materiel acquisition.
- Materiel supply and resupply (receiving, shipping, storage, and stock record/property accounting).
- Medical equipment maintenance and repair support.
- Optical fabrication and repair.
- Production of medical gases.
- Blood storage and distribution.
- Management of medical facilities and infrastructure.
- Medical contracting support.

5-23. Critical to ensuring that sustainment distribution meets the Soldiers' needs is establishing a functional theater distribution plan that enables a responsive Army supply chain from the tactical level, to the strategic sustaining base. Theater Class VIII supply management is accomplished through a unit distribution system that pushes preconfigured supplies and services to supported units throughout the AO. Blood and resuscitative fluids are dispersed throughout the AHS using predetermined distribution guidelines.

5-24. Class VIII support packages or preconfigured push-packages are used to support initial sustainment operations. The Class VIII support packages for initial sustainment operations are maintained by the U.S. Army Medical Materiel Agency (USAMMA) as part of the Army Prepositioned Stock program's Army War Reserve Sustainment (AWRS) stocks. The AWRS stock is used to resupply a unit after it has consumed its unit basic load (UBL).

5-25. In a mature theater, Class VIII resupply support is provided by the medical logistics companies (MLCs) operating throughout the AO, while the MLMC forward support team provides theater-level commodity management of Class VIII materiel. The MLMC forward support team is subordinate to the medical command (deployment support) (MEDCOM [DS]) and collocates with the DMC of the TSC/ESC. The MEDCOM (DS) is the senior medical command within the theater in support of the ASCC. The MLC is the principal MEDLOG unit that serves as the SSA for medical units within the AO and is assigned to a multifunctional medical battalion (MMB) for control.

5-26. The MLMC support team, in conjunction with the MLC or MMB, may be designated by the GCC to serve as the single integrated medical logistics manager (SIMLM) for joint operations. (See FM 4-02.1 for additional information on theater MEDLOG support and JP 4-02 for SIMLM operations.)

CLASS IX

5-27. The TSC manages Class IX supplies for the theater. The degree of management is generally proportional to the contribution repair parts make to the operational readiness of the end items they are supporting. Items such as major assemblies, that directly affect the ability of end items to operate in combat, receive particular attention. Another factor affecting management is dollar value of supplies. Operations essential and high-dollar value items are intensely managed at all levels. Low-cost, noncombat essential items may be managed within the established parameters of the automated systems at the various echelons of supply, thereby allowing the manager to concentrate on fewer items.

5-28. The operational level of Class IX support focuses on maintaining a theater sustainment level of supply that provides a safety level for all repair parts and a level of stockage for the items that will not be sent to the theater via air line of communication. Easing these supply requirements are the serviceable assets that sustainment maintenance repair of line replaceable units generates. These theater-generated assets can offset the requirement to support from the strategic level of supply.

5-29. Air delivery cargo arrives daily at predetermined in-theater aerial ports. Most Class IX items are delivered directly to the requesting SUST BDE or BSB. (FM 10-1 and FM 10-27 contain additional information on Class IX supply.)

Glossary

SECTION I – ACRONYMS AND ABBREVIATIONS

Acronym	Definition
AAFES	Army and Air Force Exchange Service
ABCS	Army Battle Command System
ACOM	Army commands
ACUS	Area Common User System
AHS	Army Health System
AIT	automatic information technology
AMC	Air Mobility Command
AMEDD	Army Medical Department
AO	area of operations
AOR	area of responsibility
APHIS	Animal and Plant Health Inspection Service
APOE	aerial port of embarkation
APOD	aerial port of debarkation
ARFOR	Army Force
ASCC	Army Service Component Commander
ASR	alternate supply route
ATHP	ammunition transfer holding points
AV	asset visibility
AWRS	Army War Reserve Sustainment
BC	battle command
BCT	brigade combat team
BSB	brigade support battalion
CARP	computed air release point
CBRN	chemical, biological, radiological, and nuclear
CCA	country container authority
CCDR	combatant commander
CL	class
COA	courses of action
COCOM	combatant command
CONUS	continental United States
COP	common operational picture
CP	command post
CRAF	Civil Reserve Air Fleet
CRSP	centralized receiving and ship point
CSS	combat services support
CSSB	combat sustainment support battalion

CULT	common-user land transport
DCST	Defense Logistics Agency contingency support team
DDOC	Deployment Distribution Operations Center
DLA	Defense Logistics Agency
DMC	distribution management center
DOD	Department of Defense
DOT	Department of Transportation
DPO	distribution process owner
DRMS	Defense Reutilization and Marketing Service
DTS	Defense Transportation System
EEFI	essential elements of friendly information
EPW	enemy prisoner of war
ESC	expeditionary sustainment command
ESP	expeditionary support packages
FEPP	federal excess personal property
FFIR	friendly force information requirements
FSC	forward support companies
GCC	geographic combatant commander
GCSS-Army	Global Combat Support System-Army
GLOC	ground line of communication
HAP	humanitarian assistance programs
HCP	health and comfort pack
HM	hazardous material
HN	host nation
HW	hazardous waste
ID	identification ID
IGC	Integrated Data Environment Global Transportation Network Convergence
ISO	international organization for standardization
ITV	in-transit visibility
J4	logistics staff section
JDB	Joint Distribution Board
JDDOC	joint deployment and distribution operations center
JFC	joint force commander
JLOTS	joint logistics over-the-shore
JMC	joint movment center
JOA	joint operations area
JOPES	Joint Operation Planning and Execution System
JP	joint publication
JPADS	Joint Precision Air Drop System
JTF	joint task force
JTF-PO	joint task force-port opening

LAR	launch acceptance region
LOC	lines of communications
LOGCAP	logistics civilian augmentation program
LOGSA	logistics support activity
LOTS	logistics over-the-shore
MARAD	Maritime Adminstation
MCB	movement control battalion
MCT	movement control team
MEDCOM	United States Army Medical Command
MEDLOG	medical logistics
METT-TC	mission, enemy, terrain and weather, troops and support available, time available and civil considerations
MHE	material handling equipment
MLC	medical logistics companies
MLMC	medical logistics management center
MMB	multifunctional medical battalion
MOA	memorandum of agreement
MP	Military Police
MSC	Military Sealift Command
MSR	main supply routes
MTS	Movement Tracking System
NGO	nongovernmental organization
NICP	national inventory control point
OPCON	operational control
OPLAN	operations plan
OPORD	operations order
POD	port of debarkation
POE	port of embarkation
POL	petroleum oils and lubricants
PSA	port support activity
RDD	required delivery date
RF	radio frequency
RFID	radio frequency identification
ROC	rear operations center
RRF	Ready Reserve Fleet
RSO&I	reception, staging, onward movement, and integration
SDDC	Surface Deployment and Distribution Command
SECDEF	Secretary of Defense
SIMLM	single integrated medical logistics manager
SLOC	sea line of communications

SOFA	status-of-forces agreement
SOP	standing operating procedure
SPM	single port manager
SPO	support operations
SPOD	seaport of debarkation
SPOE	seaport of embarkation
SSA	supply support activity
STAMIS	Standard Army Management Information System
SUST BDE	sustainment brigade
TC-AIMS II	Transportation Coordinator's Automated Information for Movement System II
TD	theater distribution
TDC	theater distribution center
TDD	time-definite delivery
T-JDB	theater-joint distribution board
TO	theater opening
TPFDD	time-phased force and deployment data
TSC	theater sustainment command
TTOE	transportation theater opening element
U.S.	United States
UBL	unit basic load
UCP	Unified Command Plan
USACASCOM	United States Army Combined Arms Support Command
USAMC	United States Army Materiel Command
USAMMA	United States Army Medical Materiel Agency
USDA	United States Department of Agriculture
USTRANSCOM	United States Transportation Command
VISA	Voluntary Intermodal Sealift Agreement
ZULU	time zone indicator for Universal Time

SECTION II – TERMS

Anticipation
The ability to foresee events and requirements and initiate necessary actions that most appropriately satisfy a response.

Cataloging
The process of identifying, marking, and documenting an item or items for the purpose of obtaining and maintaining accountability.

Capacity
The measure of materiel that can move through the distribution system and the capability of the infrastructure to provide a two-way flow of resources.

Continuity
The uninterrupted provision of sustainment across all levels of war.

Distribution
The operational process of synchronizing all elements of the logistics system to deliver the "right things" to the "right place" at the "right time" to support the combatant commander (JP 1-02)

Global distribution
The operational process of coordinating and synchronizing all elements of the logistic system to achieve time definite delivery to support the CCDR.

Improvisation
The ability to adapt sustainment operations to unexpected situations or circumstances affecting a mission.

Integration
The joining all of the elements of sustainment to operations assuring unity of purpose and effort.

In-transit visibility (ITV)
The ability to track the identity, status and location of DOD units, sustainment and personal property from origin to consignee or destination.

Logistics Over-the-Shore
The loading and unloading ships in an austere environment or without deep draft capable fixed port facilities.

Managing
The monitoring and control of materiel in theater.

Movement control
The planning, routing, scheduling, controlling, coordination, and in-transit visibility of personnel, units, equipment, and supplies moving over Line(s) of Communication (LOC).

Rapid and precise response
The ability to meet the constantly changing needs of the force.

Redistribution
The return of excess materiel to the supply system.

Requirements determination
The process of identifying all resources based on materiel release orders and transportation requests.

Requirements validation and prioritization
The process of certifying movement and resource requirements against commander's priorities.

Responsiveness
The ability to meet changing requirements on short notice and to rapidly sustain efforts in meet changing circumstances over time.

Retrograde
The return of materiel from the owning/using unit back through the distribution system to the source of supply, directed Ship To location and/or point of disposal.

Theater distribution (TD)
The flow of equipment, personnel and materiel within theater to meet the GCC missions (JP 1-02).

Theater distribution management
Optimizing the distribution networks to achieve the effective and efficient flow of personnel, equipment, and materiel to meet the combatant commander's requirements.

Supply
The procurement, distribution, maintenance while in storage, and salvage of supplies, including the determination of kind and quantity of supplies (FM 4-0).

Survivability
The ability to protect personnel, information, infrastructure, and assets from destruction or degradations.

Theater distribution management
Optimizing the distribution networks to achieve the effective and efficient flow of personnel, equipment, and materiel to meet the combatant commander's requirements.

Theater opening
The ability to establish and initially operate PODs, to establish the distribution system and sustainment bases, and to facilitate the reception, staging, and onward movement of forces (RSO) and materiel.

Throughput
Bypassing one or more nodes in the distribution system to minimize handling and speed delivery forward.

Time-definite delivery
The consistent delivery of requested logistic support at a time and destination specified by the requiring activity.

Visibility
The tracking of items and resources moving within the distribution system.

Warehousing
The process of storing, issuing, receiving securing, and accounting for materiel.

References

SOURCES USED

These are the sources quoted or paraphrased in this publication.

ARMY REGULATIONS

AR 710-2, *Supply Policy Below the National Level*, 28 March 2008.

FIELD MANUALS

FM 1-02, *Operational Terms and Graphics*, 21 September 2004.

FM 3-0, *Operations*, 27 February 2008.

FM 3-34, *Engineer Operations*, 2 April 2009.

FM 4-0, *Sustainment*, 30 April 2009.

FM 4-02, *Force Health Protection in a Global Environment*, 13 February 2003.

FM 4-02.1, *Army Medical Logistics*, 8 December 2009.

FM 4-30.1, *Munitions Distribution in the Theater of Operations*, 16 December 2003.

FM 4-94, *Theater Sustainment Command*, 12 February 2010.

FM 5-0, *The Operations Process,* 26 March 2010.

JOINT PUBLICATIONS

JP 1-02, *Department of Defense Dictionary of Military and Associated Terms*, 8 November 2010.

JP 4-09, *Distribution Operations*, 5 February 2010.

JP 4-02*, Health Service Support*, 31 October 2006.

OTHER PUBLICATIONS

DA Pam 30-22, *Operating Procedures for the Army Food Program*, 6 February 2007.

DOD 4160.21-M*, Defense Materiel Disposition Manual*, 18 August 1997.

DOD 4160.21-M-1, *Defense Demilitarization Manual*, 1 October 1991.

DTR 4500.9-R, *DOD Customs and Borders Clearance Policies and Procedures*, Part V of *Defense Transportation Regulation*, 17 November 2009. Available online at http://www.transcom.mil/dtr/part-v/.

Natick Pamphlet 30-25, *Operational Rations of the Department of Defense*, April 2002.

DOCUMENTS NEEDED

These documents must be available to the intended users of this publication.

None.

READINGS RECOMMENDED

These readings contain relevant supplemental information.

None.

PRESCRIBED FORMS

None.

REFERENCED FORMS

DA forms are available on the APD website (www.apd.army.mil).

DA Form 2028. *Recommended Changes to Publications and Blank Forms*.

Index

ATTP 4-0.1
20 May 2011

By order of the Secretary of the Army:

MARTIN E. DEMPSEY
General, United States Army
Chief of Staff

Official:

JOYCE E. MORROW
Administrative Assistant to the
Secretary of the Army
1111602

DISTRIBUTION:

Active Army, Army National Guard, and U.S. Army Reserve: To be distributed in accordance with the initial distribution number (IDN) 116015, requirements for ATTP 4-0.1.