

Chapter 4

Army Terminal Operations

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INTRODUCTION

4-1. Army terminal operations involve receiving, processing, and staging passengers. It also includes receiving, loading, transferring, and discharging unit equipment and cargo. The main activities executed at terminals are loading and unloading modes of transport, marshaling, manifesting, stow planning loads, and documenting movement through the terminal. Some terminals can provide transit storage.

4-2. Terminals are key nodes in the total distribution system that supports the commander's concept of operation at all levels of war and through the range of military operations. When linked by modes of transport, they define the transportation structure for the operation. Force projection missions require the early identification and establishment of terminals. A well conceived plan assures that terminals can support the deployment, reception, and onward movement of the force and its sustainment. Crucial to the execution of the operation is the assignment of the right cargo and MHE at each terminal. ITV of materiel flowing through the terminals also provides the supported CINC with information pertaining to location and final destination of all cargo.

4-3. The two broad categories of terminals are water and inland terminals. Water terminals are established at ports, beach sites, or degraded/unimproved facilities. Inland terminals include facilities such as air terminals, truck terminals, TTPs, rail yards, and inland water terminals. Commanders establish inland terminals at points along air, rail, rivers and canals, pipelines, and motor transport LOC to provide for the transshipment of cargo and personnel carried by these modes.

4-4. Terminals are also classified based on the physical facility, the general type of cargo they handle, and the methods used for cargo handling. Classifying terminals aids in determining their cargo capacity. Knowing the cargo capacity of terminals helps to develop a plan to support the military operation.

PHYSICAL FACILITY

4-5. Terminals, classified by their physical facility, fall in two categories (fixed and unimproved). Examples of fixed terminals are deep-draft vessel capable piers, established paved transient facilities with warehouse space, and an existing airfield. Examples of unimproved terminals are bare beaches and inland terminals set up to operate from unpaved surfaces and without overhead cover. Transportation planners should seek to use fixed facilities for terminals. If time and the situation allows, the CINC should also negotiate improvements of the terminal infrastructure in potential areas of operation before the deployment of the force.

CARGO HANDLING METHOD

4-6. Terminals are also classified by method of cargo handling. This classification includes containers, RO/RO, breakbulk, LO/LO, and lighterage. By using the cargo handling criteria, planners can determine the units and MHE needed to operate a terminal.

TYPES OF CARGO

4-7. The type of cargo handled is another way to classify terminals. The types of cargo include ammunition, explosives, bulk fuel, and other hazardous cargo. Establishing hazardous cargo terminals usually requires the calculation of quantity safety-distance factors. The requirement to store classified materiel and personal and official mail is another important consideration.

SECTION I - Types of Terminals

WATER TERMINALS

4-8. The availability and capabilities of water terminals is essential to the success of a military operation. Water terminals used as departing ports are called SPOE. Water terminals used as arriving ports are called SPOD. Commanders consider distances, the OPSEC plan, and the terminal capabilities when selecting a departure water terminal. The selection of arrival water terminals is equally important to the success of a military operation. Destination water terminals are crucial to establishing a lodgment and to sustaining the deployed force.

4-9. Water terminal operations are conducted at fixed, unimproved, or bare beach port facilities. One of the main objectives is to maximize the throughput of cargo. Maximizing throughput may require the military force to use a combination of terminals over time, while improving existing facilities. FM 55-60 contains more information on the establishment and operation of Army terminals.

FIXED WATER TERMINALS

4-10. Fixed water terminals permit deep-draft vessels to berth and discharge cargo directly onto a pier or quay. The cargo may move to in-transit storage areas to await terminal clearance. Another option is loading the cargo directly onto surface transport, to include rail, for onward movement. Fixed water terminals normally have a high degree of sophistication in facilities, equipment, and organization to support cargo handling, container operations, and port clearance operations.

UNIMPROVED WATER TERMINALS

4-11. An unimproved water terminal is a site with significant shortcomings that hinder operations. These may include fixed water terminals that have significant damage that may also hinder operations. An unimproved water terminal does not have the facilities, equipment, or infrastructure of a fixed water terminal. The characteristics of an unimproved water terminal facility are insufficient water depth, lack of installed MHE, and not enough berthing space to accommodate deep-draft cargo vessels. Vessel discharge normally occurs at anchor using lighterage. The Army uses unimproved facilities when fixed water terminals are not available or to increase throughput to meet requirements.

BARE BEACH TERMINALS

4-12. Bare beach terminals use lighterage and/or causeways to move cargo across a beach or to the shore. These operations are known as LOTS. LOTS may include the establishment of an off-shore petroleum discharge system. However, a LOTS operation does not refer to bare beach operations only. LOTS also applies to stream discharge operations conducted from ship anchorage sites. An example of this type of operation is ocean-going ships discharging cargo to lighterage for movement to a bare beach or to an improved terminal or unimproved terminal.

4-13. Beach facilities require selected sites to enable lighterage to move cargo to or across the beach into marshaling yards. Bare beach operations occur under less than desirable conditions. They require significant engineer support to prepare access routes to and from the beach. Landing craft, amphibians, and terminal units conduct beach operations. When the Army operates a bare beach terminal, the operation remains under the command and control of a transportation terminal battalion. The supported CINC determines what Service component has command and control of JLOTS. The Army uses bare beach facility operations when no other terminal facilities are available or to augment throughput capability at fixed terminals.

CONTAINER TERMINALS

4-14. Container terminals are facilities designed for uninterrupted, high-volume flow of containers between ship and inland transportation modes. Fixed port facilities normally have the capability to handle containers. Container terminals serve specialized, largely nonself-sustaining vessels. Gantry cranes, shoreside support structures, and associated MHE are available at water terminals designed to move containers.

ROLL-ON/ROLL-OFF TERMINALS

4-15. RO/RO terminals have special purpose ramps designed to handle vehicles that can load or discharge under their own power. Because of the rapid accumulation of equipment at pier-side, RO/RO terminals should have an open hard surface with sufficient space to support the marshaling of convoys. RO/RO is the best method to use when handling unit rolling stock. Fixed port facilities normally have a RO/RO capability.

BREAKBULK TERMINALS

4-16. Breakbulk terminal operations involve palletized or specially packaged cargo, unitized for ease of handling, but not in containers. As a minimum, the berth of breakbulk terminals should have an apron for the full length of the ship and be wide enough to support MHE operations. Breakbulk is the least desirable method of handling military cargo through a terminal because it is time consuming, MHE dependent, and manpower intensive. Fixed port facilities usually have breakbulk capability.

4-17. This type terminal supports LO/LO operations. Extensive planning is required, specifically if the LO/LO operation involves the handling of flatracks and cargo loaded in sea-sheds.

LIGHTERAGE TERMINALS

4-18. Lighterage terminal operations use self-propelled and/or towed floating craft to carry cargo between vessels at anchor and the shore or pier off-load site. Lighterage operations are inherently hazardous, complex, and time consuming. Lighterage terminals are normally associated with unimproved or bare beach facilities.

4-19. The Army uses lighterage terminal operations only when no other capability is available, when moving cargo through inland waterways to inland terminals, or to augment other ongoing cargo-handling operations. The Army also uses lighterage at fixed port facilities when no berthing space for a ship is available. Some equipment used to perform these operations include SEABEE, LASH barges, commercial self-propelled and towed barges, and landing craft. Lighterage terminals operations can handle containerized, breakbulk, or RO/RO cargo.

INLAND WATER TERMINALS

4-20. The Army establishes inland water terminals along waterways. These terminals serve a dual purpose. They receive, load, and unload cargo destined to locations accessible to and from the water terminal. They also provide for the maintenance of the watercraft and rest for the crew.

INLAND TERMINALS

4-21. Inland terminals may be used to complement an existing transportation network to move cargo. They can greatly reduce congestion and the workload of the modes. Traditional examples of inland terminals include air terminals, motor transport terminals, and rail terminals. Other commonly known facilities such as Army installations, depots, central receiving points, and supply support activities are also considered inland terminals. Inland terminals also provide facilities for connecting links of the same modes when the situation dictates a change in carrier. In emergency situations, in-transit storage is provided at origin, intermediate, destination terminals, or TTPs.

AIR TERMINALS

4-22. An air terminal is a facility that functions as an air transportation hub and accommodates the loading and unloading of aircraft and in-transit processing of traffic. Air terminals can support several types of operations. These operations are support to unit movements, common-user sustainment, and personnel replacement. Selecting departure and arrival air terminals are crucial to the success of a force projection military operation. FM 100-27 contains more information on air terminals.

TRUCK TERMINAL/TRAILER TRANSFER POINT

4-23. The Army establishes truck terminals and TTPs along MSRs (to include POL sites) to accomplish line-haul or motor transport relay operations. Truck terminals are normally located where truck companies and their motor pools are positioned in the AO. These locations are near centers of concentrated trucking activities at both ends and along the way of the line-haul operation. TTPs are established at intermediate locations between truck terminals. These terminals include provisions for the assembly and dispatch of motor transport equipment. They also may provide a maintenance capability to service equipment including refrigerated containers. FM 55-30 contains more information on establishing truck terminals and TTPs.

RAIL TERMINALS

4-24. Rail terminals are facilities normally found at the beginning, along, or at the end of a rail line. Rail yards are also terminals, although usually not capable of loading and unloading cargo or personnel. Rail yards provide a capability to assemble trains, switch cars, and perform some minor maintenance.

4-25. Rail terminals usually have service facilities, freight, and passenger stations. At Service facilities, rail personnel can inspect and repair tracks and service engines with fuel and water. They can also use scales to weigh railcars before their movement to another destination. At freight and passenger stations, the terminal handles cargo and personnel. FM 55-20 contains more information on the operation of a rail terminal.

SECTION II - Terminal Operations Planning

INTRODUCTION

4-26. Staff planning and coordinating determines the numbers, types, and locations of terminals at all levels of war. This effort is vital to the development of the distribution system. USTRANSCOM selects terminals at the strategic level of war. USTRANSCOM coordinates the selection of CONUS terminals at the strategic level of war with the CINCs. The supported and supporting CINC transportation staff, working closely with the Service components and USTRANSCOM, plans and coordinates the selection of terminals at the operational level of war. The tactical commander selects terminals at the tactical level of war.

4-27. Planning for the optimization of terminals in the transportation system involves the following five-step process:

- Computing the terminal workload required to support the operation, expressing it as cargo tonnage per day.
- Estimating the available terminal capacity, which is the total tonnage that can be received, processed, and cleared through the terminal per day.
- Estimating construction requirements, which are the requirements for repair, rehabilitation, or new construction of facilities necessary to increase the terminal capacity to equal the required terminal workload.
- Estimating equipment requirements, which is the amount of equipment needed to process the required workload through the terminal with maximum efficiency.
- Estimating personnel requirements, which are the units and individuals needed for the operation of the terminal.

PLANNING FOR THE ESTABLISHMENT OF WATER TERMINALS

4-28. History shows that about 95 percent of unit equipment and sustainment cargo moves by sealift. The use of sealift requires the availability of water terminals. Therefore, planners must understand that water terminals are key to meeting the objectives of a force projection operation. If needed for the insertion of reinforcements and sustainment, water terminals should be among the key initial objectives seized during a forcible entry. Planners should work to locate water and air terminals in close proximity. Without adequate water terminals, the insertion and sustainment of the force and the capability to support a lodgement may become extremely difficult. The Army may operate water terminals in either a single Service or common-user environment. The Army must also have the capability to take over the entire water terminal operation in countries with no effective capability.

4-29. The purpose of water terminal operations is to place equipment and supplies where and when needed. The planners consider and determine the desired flow from origin to destination and return. This flow requires coordination between the strategic and operational level of war transportation organizations.

4-30. The efficient flow of equipment and supplies through water terminals is a key element of sustainment. To assure success, the terminal units scheduled to open a terminal arrive early and off-load first. The MHE required to handle prepositioned afloat vessels must be accessible and ready to come off the ship before any other off-loading operation.

4-31. Planners should establish terminals capable of handling palletized, containerized, bulk liquid, and RO/RO cargo. The capability to handle palletized, containerized, and RO/ RO reduces transit time. Planners should also consider creating a redundancy of terminals in the AO. This redundancy can provide different ways to process cargo and increase the cargo tonnage handled in support of the operation.

PLANNING FOR THE ESTABLISHMENT OF INLAND TERMINALS

4-32. Inland terminals provide flexibility and increase the capability of the transportation system to handle cargo. Planners establish them at sites that can support inland water-ways, motor, rail, and air transport modes. When established, the terminals and the nodes that link them should form LOC that flows from origin to destination. When possible, transportation planners should use and incorporate existing terminal facilities into the transportation distribution network. Terminals serving rail and inland waterways are examples of existing facilities. Figure 4-1 shows a generic schematic layout of terminals within an AO.

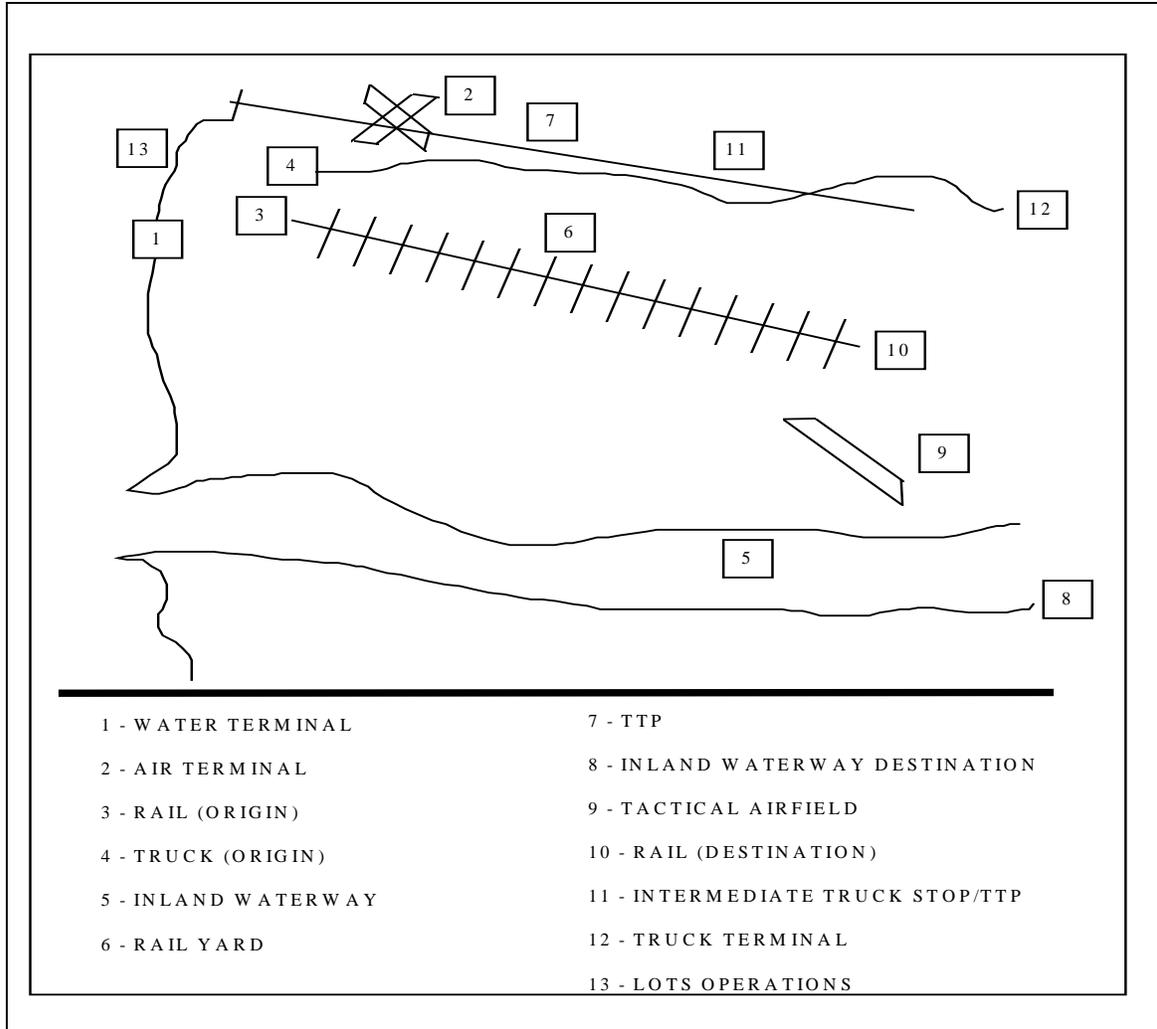


Figure 4-1. Generic Schematic Layout of Terminals Within an AO

ESTIMATION OF THROUGHPUT CAPACITY

4-33. Estimating terminal throughput capacity is key to the process of selecting terminal sites and operating units. The throughput capacity of a terminal is the lowest value of the reception, discharge, transfer, storage, and clearance capacity as described below. The throughput capacity of a terminal is dependent on its storage and clearance capacity. FM 55-60 contains a computation example.

TERMINAL RECEPTION CAPACITY

4-34. The type and sufficiency of operating space available to perform terminal operations determines the reception capacity of the terminal. This means sufficient space to stage cargo and modes of transport and while awaiting the processing of cargo and personnel. For example, important reception factors for water terminals include the number, size and type of piers or wharfs available, water depth, anchorage capacities, beach gradients, and the capability to satisfy special requirements for vessels containing hazardous cargo. The type and sufficiency of parking, warehousing, work space available for aircraft, rail cars, and motor transport assets usually dictate the reception capacity for inland terminals.

TERMINAL DISCHARGE CAPACITY

4-35. Terminal discharge capacity is the amount of personnel and materiel that can be received and off-loaded over a specified time. Discharge capacity is expressed in TEU (for containers), tons, barrels, square feet, or in numbers of personnel over a proper unit of time. Discharge or off-load capacity is normally a function of the available work force size. Discharge capacity is also affected by the physical facilities and specialized cargo handling equipment available at the terminal.

TERMINAL TRANSFER CAPACITY

4-36. Terminal transfer capacity consists of the activities required to transship personnel and cargo. Transshipment occurs at all types of terminals. Transshipment usually includes segregating, coopering, holding, documenting, and staging or storing, whenever a change in mode operator or carrier occurs.

TERMINAL STORAGE CAPACITY

4-37. Cargo storage capacity is the amount of cargo that can be stored at any one time. Storage capacity is expressed in square feet, MBL, MTONs, number of TEU, or net explosive weight. When storage space is not available, major interruptions of terminal operations occur. Ideally, cargo unloading, processing, and reloading between various transportation modes takes place without interruption.

TERMINAL CLEARANCE CAPACITY

4-38. Terminal clearance capacity measures the ability to move cargo from the terminal to its first destination. It is measured in terms of tonnage, TEU, equipment driveway, bulk liquid clearance measures, or numbers of personnel per unit of time. The first destination may be the final destination or another terminal.

Table 4-1. Water Terminal Throughput Estimation Checklist (continued)

Collect these data:	Compute these factors:	To determine:
Intrinsic capacity Average dwell time Operating capacity Terminal facilities Stacking methods Equipment used	Evaluate to determine water terminal storage capacity	
Clearance conveyance by mode Terminal equipment and personnel Gate capacity	Evaluate to determine water terminal clearance capacity	
NOTE: Once all of the above evaluations are completed, then the following should be applied: threat assessment, effect of the elements, and training level of labor.		

SECTION III - Terminal Operations at the Strategic Level of War

INTRODUCTION

4-40. USCINCTRANS operates the strategic water and air terminals used as POEs and PODs within CONUS. USCINCTRANS selects the strategic terminals in coordination with the supported and supporting combatant commanders, the Service components, and the JCS. CINCs operate terminals in their AOR and select those to support a strategic deployment in support of a supported CINC. CINCs coordinate the selection of terminals with USCINCTRANS. USCINCTRANS may operate a terminal in an OCONUS AO after executing agreements with the proper CINC.

USTRANSCOM (MTMC) OPERATED WATER TERMINALS

4-41. USCINCTRANS selects CONUS water terminals and delegates their operation to MTMC. MTMC uses its organic organizations and reserve units to operate the terminals. MTMC operates several common-user military water terminals and outports for routine peacetime cargo shipments.

4-42. To accommodate the surge of cargo during unit deployments, MTMC opens several "expansion ports." These ports normally come under the command and control of TTBs. MTMC is the coordinating link between deploying units and their specific POEs. It prepares and issues port call messages for personnel and equipment and provides all SPOE stevedoring functions. Deploying units usually move to SPOEs by highway and rail. The deploying unit is responsible for arranging en route stops to provide for crew rest and refueling. MTMC arranges for commercial highway and rail movements, to include the use of terminals, en route to the SPOE. The deploying unit usually provides security for rail moves to SPOEs.

4-43. When required, MTMC also sends a DSB to the installation and requires the ASCC to organize and provide a PSA. DSB and PSA operations are discussed later in this chapter.

As a result of experiences during Operation Desert Shield/Storm and the shorter deployment objectives established within by the Army Strategic Mobility Program, MTMC created the WDIP. The objective of WDIP is to improve the terminal interface among the deploying units, supporting installations, FORSCOM, and MTMC. WDIP uses improved communications, realistic unit movement training, refined deployment procedures, and smoother execution of future deployments to accomplish its objectives. The basic element of the WDIP is a series of installation visits by MTMC and FORSCOM personnel to address key issues such as deployment planning, installation outloading, port operations, PSAs, sealift availability, scheduling, transportation automation and documentation, and certification of hazardous material.

TRANSPORTATION TERMINAL BATTALION OR BRIGADE

4-44. The TTB is a reserve unit that mobilizes upon receipt of the execute order. TTBs normally operate at established commercial port facilities, using contracted stevedores. The TTB provides traffic management and monitors commercial contracts for the movement of DOD cargo, including unit equipment, resupply, and retrograde shipments. Although TTBs are assigned to a specific port, they can operate at any designated SPOE. TTBs provide MTMC with the capability to expand the number of ports and to sustain SPOE operations. At the request of a supported or supporting CINC, FORSCOM and MTMC can deploy TTBs to operate an OCONUS water terminal.

DEPLOYMENT SUPPORT BRIGADES

4-45. DSBs are TDA RC units. They are made up of several individual UMTs. The teams can help deploying units at their location. When mobilized, DSBs fall under the command authority of MTMC. MTMC directs the DSB's UMTs to the designated installations. UMTs then establish liaison with the deploying unit transportation representative, movement control organization, and/or the ITO.

4-46. The DSB provides liaison and coordination for movement of port-called units to designated terminals. The liaison includes movement schedules; documentation; special cargo-handling requirements; hazardous, sensitive, and nonstandard configuration equipment; and any other information needed for deployment through the SPOE. UMTs do not actually document or load equipment.

PORT SUPPORT ACTIVITY

4-47. The PSA is a provisional organization formed by the deploying unit or its support force as directed by the ASCC. Its purpose is to support the terminal commanders in the loading and discharge of the equipment. Since the requirements vary between shipments, the ASCC tailors each PSA to fit the situation. Among the activities a PSA performs are driving special equipment and providing a trouble-shooting maintenance capability. PSAs operate almost exclusively in the terminal staging area. A MOU between the ASCC and MTMC identifies support requirements. The PSA is under the operational control of the terminal commander.

PORT SECURITY COMPANIES

4-48. PSCs provide close-in internal security for classified operating areas and sensitive logistical facilities including operation of specialized physical security devices. The PSC is a RC unit, that when mobilized, is under the command authority of MTMC. The USCG also has reserve port authority security attachments that when activated, operate under the operational command of the Naval Component Commander.

SUPERCARGOS

4-49. Supercargos refer to unit personnel that accompany, supervise, guard, and maintain their unit equipment on board a ship. Supercargos provide maintenance support and liaison during cargo reception at the SPOE and during shipload and discharge operations. They also support port clearance operations. The ASCC of the deploying force nominates and organizes Army supercargos for deployment.

4-50. While the exact composition of the supercargo team is dependent on several factors, the team ideally includes qualified mechanics. Supercargos are also licensed and experienced on each type of vehicle they are accompanying. When more than one organization deploys on a ship, the ASCC specifies who will provide the OIC and NCOIC.

OCONUS SUPPORTING CINC WATER TERMINALS

4-51. OCONUS CINCs are designated supporting CINCs to support an operation not located in their geographical AOR. Under these circumstances, supporting CINCs establish similar procedures as those described for CONUS. These procedures include the provision of PSAs, port security, and supercargos. When MTMC operates the terminals, the supporting CINC coordinates the procedures with USTRANSCOM and MTMC.

OTHER SERVICE COMPONENT WATER TERMINALS

4-52. Other Services operate strategic water terminals. ASCC of the deploying force coordinates with terminal commanders from other Services following the same procedures as those followed for Army operated terminals. Although these terminals operate in much the same manner as USTRANSCOM/MTMC terminals, there may be minor differences in procedures.

CONUS INLAND TERMINALS

4-53. At the strategic transportation level, inland terminals include activities such as Army installations, depots, and air terminals. These terminals are evaluated and selected during the planning process. Deploying units use these terminals during practice deployments.

US ARMY INSTALLATIONS AND DEPOTS

4-54. Installations and depots are the dominant terminals of origin for strategic deployments. Personnel, equipment, and supplies first experience the DTS at these locations. Depots usually have well developed rail and truck terminals to handle bulk shipments for sustainment and resupply. Unlike depots, installations are seldom staffed to accomplish the physical terminal activities. Deploying units provide the bulk of the manpower required for the preparation and out-loading of unit equipment. The installations provide the deploying units with blocking, bracing, and packing materials required to prepare their shipments. AR 55-355 stipulates the shipping and receiving capabilities for CONUS Army installations and depots. Regional CINCs prepare transportation facility guides for their AO.

USTRANSCOM (AMC) OPERATED AIR TERMINALS

4-55. AMC is the USTRANSCOM Air Force component command and is responsible for operating, or arranging for the operation of, all CONUS air terminals. AMC and contracted aircraft use these terminals to support Army organizations.

4-56. The Air Force usually positions a TALCE at the designated air terminal to oversee operations. The Air Force is responsible for providing the specialized MHE to load and off-load cargo and personnel from the aircraft. The deploying Army units provide pusher vehicles, shoring, and other MHE required to bring the cargo to its loading site or to clear the terminal.

4-57. Typically, units will deploy most of their personnel by air from their supporting airfield or from the nearest designated aerial port. The unit's equipment normally deploys by sea. Unit personnel will link-up with their equipment at their destination SPOD. Although the majority of unit equipment normally moves by sealift, some high priority equipment moves by air.

4-58. The ASCC coordinates the movement of Army personnel and cargo into and out of designated air terminals. The ASCC bases the coordination on information received from USTRANSCOM. The responsible movement control organization usually notifies the units about impending moves. Army units can expect that AMC will consolidate cargo at predesignated CONUS aerial terminals to maximize the productivity of the airlift system.

ARMY OPERATIONS AT AMC AIR TERMINALS

4-59. Army transportation support at air terminals assist with the deployment, redeployment, and sustainment of Army forces. Normally, an Army A/DACG assists the TALCE or MST in processing, loading, and off-loading deploying and arriving Army personnel and equipment. ATMCTs are designed to sustain A/DACG type operations for longer periods of time. By order of the ASCC, ATMCTs may replace A/DACG, as required.

Arrival/Departure Airfield Control Groups

4-60. A/DACGs are provisional organizations created to operate for a specific time or mission. They are not TOE units. The ASCC may direct personnel from deploying units, supporting organizations, installation staff, or other commands to form the A/DACGs. If required, the ASCC disbands the A/DACG or replaces it with a terminal transfer capability or an ATMCT for movement control purposes, when the specific period of operation has passed or the mission is completed. The duties of an A/DACG are described in FM 55-12.

Air Terminal Movement Control Teams

4-61. ATMCTs are transportation movement control TOE organizations assigned to transportation battalions (MC) or Corps MCCs. They operate primarily at Air Force terminals to support all Army sustainment requirements. ATMCTs perform movement control functions at air terminals. They will normally be assigned to an air terminal when:

- An airfield is designated an aerial port for the sustained air movement of personnel and material and to serve as an authorized APOE/APOD in a theater of operation.
- An airfield serves both unit movement and nonunit movement personnel and sustainment flow.
- The theater is joint or combined with multiple users of limited common-user transportation assets. FM 55-10 contains more information on the operations of the ATMCT.

SECTION IV - Terminal Operations at the Operational Level of War

INTRODUCTION

4-62. Operational level of war terminals are those operated in the AO. Certain operational level terminals are the entry point into or departure point from the AO and the initial points for theater distribution. They are typically located at ISBs, SPODs, APODs, supply support activities, and in-transit transfer points. Terminals must link to modes of transport to ensure the continuous flow of personnel and cargo.

4-63. The supported CINC and Service component commands select entry or departure point terminals at the operational level of war. The CINC usually retains the authority to select the POEs and PODs. The CINC coordinates the selection with USTRANSCOM and subordinate Service components.

4-64. The supported CINC normally delegates the responsibility for the selection and operation of inland terminals to the proper Service component commanders. As an example, the CINC will normally assign operational air terminal responsibilities to the AFSCC and operational water terminal operations to the Army or Navy Component Commander. The CINC may also opt to enter into an agreement with USCINCTRANS to allow MTMC to operate selected POE/POD water terminals. The selection and operation of terminals may require coordination with HN and allied transportation authorities.

4-65. The ASCC recommends to the CINC the types and quantities of units necessary to operate the designated Army terminals.

ARMY TERMINAL ORGANIZATIONS

4-66. Transportation planners choose from among a variety of Army transportation units to operate the terminals in the area of operation. These organizations are designed to provide maximum flexibility. They allow a planner to fit the units to the commander's concept of the operation by matching them with the size of the force deployed and the characteristics of the terminals available.

4-67. To provide command and control for the terminal units, the transportation structure provides a Army TRANSCOM, a transportation composite group, and an active duty TTB. A TRANSCOM provides command and control of two or more composite groups. The transportation composite group, the most likely element to deploy for command and control purposes, can manage two or more terminal battalions. The Army strategic mobility plan contingency corps requires support from a transportation composite group. The composite group may also support an independent division. When the size of the force is less than a division, an active duty TTB may be the senior Army terminal activity in the AO.

4-68. The organizations discussed above usually command and control the modes of transport available in the AO as well as the terminal units. Appendix C contains a description of the units a transportation planner should consider when selecting terminal units to fit a military operation.

WATER TERMINAL OPERATIONS, PLANNING AND EXECUTION CONSIDERATIONS

4-69. The planning and execution of water terminal operations at the operational level of war requires a detailed analysis of a wide range of factors. The factors include the following:

- Overall concept of the operation.
- Logistics support requirements.
- Physical characteristics and layout of the port and/or beaches.
- Relative location of highway, rail, air, and inland waterway networks.
- Location of supported and supporting units.
- Required repair and rehabilitation of existing facilities.
- Requirement for new construction.
- Requirement for security, especially if HNS is not available.

4-70. In a theater of operations, water terminals are located at one or more fixed port facilities, unimproved port facilities, or bare beaches. JLOTS operations also may be present in the theater.

4-71. Operational level of war water terminals introduce unit equipment (to include bulk fuel) into the AO and continue operations to sustain the force. During initial reception, the military terminal organization is sequenced into the AO early enough to conduct timely discharge operations. The planning must provide for the off-loading of MHE equipment to allow for the terminal unit to become operational as soon as possible. Ships should be sequenced into the terminal to match the evolving capabilities of the operating terminal unit. For example, in the early stages of the deployment, RO/RO ships should be scheduled for arrival. Container and other cargo ships should be scheduled only after the terminal has the capability to handle them. However, the transportation planner may consider container off-loading early when using self-sustaining vessels. The availability of HNS also will influence how the ships are scheduled for arrival.

4-72. The terminal unit commander also has planning and execution aspects to consider before off-load operations. Among the aspects, the following are of key importance:

- Coordinating with MSC representatives for ship operations.
- Planning ship discharge and staging.
- Planning for the ship arrival meeting.

- Planning for the provision of ship Chandler when there is no MSC presence in the AO.
- Planning to perform harbormaster functions when there is no effective governmental infrastructure to execute this task.

REQUIREMENT FOR PORT SUPPORT ACTIVITIES

4-73. The ASCC normally establishes a requirement for a PSA to meet and assist a deploying unit. This assistance takes place at the SPOD. The PSA may be an advance party from the deploying force or from units in theater. The ASCC and the terminal commander tailor the organization and capabilities of the PSA to the reception or deployment requirements. An agreement between the ASCC and the proper terminal commander defines the PSA support requirements. When the PSA belongs to a deploying force, the ASCC disestablishes it when the parent unit passes through the terminal.

4-74. PSA responsibilities include performing maintenance, providing repair parts, and correcting deficiencies in the equipment shipping configuration. It also provides equipment operators for unique equipment and security for sensitive equipment and classified cargo. The water terminal commander has operational control over the PSA activities. See FM 55-65 for more information on PSA.

WATER TERMINAL DEFENSE REQUIREMENTS

4-75. Water terminals are vulnerable to air and missile attacks, especially if US and allied forces have not established air superiority and sea control. They are also vulnerable to attacks by unconventional forces and to sabotage, terrorism, mining, espionage, and chemical or biological attacks. The rear area security commander includes these threats in the security plan.

INLAND TERMINAL OPERATIONS, PLANNING AND EXECUTION CONSIDERATIONS

4-76. The supported and supporting CINC normally delegates the operation and control of inland terminals to the ASCC, except for Air Force air terminals. The AFSCC has the responsibility for operating the Air Force air terminals.

4-77. The ASCC usually delegates the selection and operation of inland terminals to the senior transportation, aviation, and support command commanders on an area basis. However, their selection requires integrated planning to ensure they link with the LOC and support the concept of operations. These organizations plan for and establish operational inland terminals at both ends of interchange points along the LOC to provide for transshipment of cargo and personnel transported by the modes. The senior transportation commander normally operates transportation inland terminals with cargo transfer companies.

TRUCK TERMINAL AND TRAILER TRANSFER POINT REQUIREMENTS

During Desert Storm, TTPs were used as rest halts and a time to regroup for everyone. Wolf burger mobiles, fuel, and an area for sleeping were some of the capabilities provided by the TTPs.

4-78. The transportation commander places truck terminals in or near centers of concentrated trucking operations at both ends of a line-haul system. He also places TTPs at strategic locations between both ends of a line-haul system.

4-79. Truck terminals connect local pickup and/or delivery service and line-haul operations. They are assembly points and dispatch centers for motor transport equipment used in line-haul operations. They may be used for in-transit storage or freight sorting, but this should normally be minimized as it detracts from efficient operations. Cargo transfer elements provide cargo-handling service at most motor transport terminals.

4-80. The transportation commander may establish one or more intermediate truck terminals at points along the line-haul routes. Their location depends upon the organization of the line-haul operation. The location of supported DS and GS units also influence the selection of sites for intermediate terminals. These terminals provide delivery of cargo to supply support activities. The intermediate terminal may also be collocated with a TTP.

4-81. The transportation commander locates TTPs at predetermined locations along the route of a line-haul operation. They form the connecting links between segments of a route and tie the overall operation into one continuous movement. TTPs offer facilities for exchanging semitrailers between line-haul tractors operating over adjoining segments of a line-haul route. They also provide a means for controlling and reporting equipment engaged in the operation. In specific, TTPs provide facilities for exchanging semitrailers, reporting (ITV), vehicle and cargo inspections, documentation, and dispatch procedures. They may also provide mess, maintenance, and other support. TTPs are not normally used to pick up and deliver cargo.

4-82. Truck terminals and TTPs are established on or as close to the line-haul route as possible. However, requirements for hardstand, support facilities, security, and the availability of real estate may force the establishment of truck terminals or TTPs off of the line-haul route. The truck terminals and TTPs include a marshaling area and other activities and services as required to support the operation. Truck terminal site selectors should consider the following:

- Size, complexity, and duration of the operation.
- Number and type of vehicles to be employed.
- Facilities required at the terminals and transfer points.
- Anticipated backlog of semitrailers at these sites.

RAIL TERMINAL REQUIREMENTS

4-83. Rail terminals include rail yards, freight stations, passenger stations, and repair and service facilities. Except for some rail yards, they are located at the start and the end of rail lines.

4-84. Rail yards are areas with sufficient track lines to allow for the forming of trains. Trains are formed by switching and spotting rail cars. Rail yards are usually available within a rail terminal. However, well developed rail lines usually have one or more rail yards between the start and the end of a line.

4-85. Freight stations are buildings, sheds, or warehouses that provide for receiving, loading, unloading, or storing cargo. A capable freight station enhances the capability to handle cargo. Freight stations usually have a paved access to ease the loading and unloading of other modes of transport. Freight stations also have ramps to ease the handling of tracked and wheeled vehicles. Transportation planners should provide portable ramps to handle tracked and wheeled vehicles anywhere along the rail line.

4-86. Passenger stations contain a track that allows for the spotting of passenger rail cars. They also should include a facility for the use of the troops waiting to board the rail cars. Finally, a rail terminal should have adequate maintenance facilities to repair and service engines and rail cars.

4-87. While Army RC and/or HN rail units operate the railroad, cargo transfer companies operate the terminals. When available and when the tactical situation allows, commanders should exploit rail capabilities within the AO. See FM 55-20 for more information.

INLAND WATERWAY TERMINAL REQUIREMENTS

4-88. An inland waterway terminal normally includes facilities for mooring, cargo loading and unloading, dispatching and controlling, and repairing and servicing all craft capable of navigating the waterway. Appropriate cargo transfer units operate inland waterway terminals. The number of units required depends on the results of an inland waterway terminal throughput analysis.

4-89. Operational level inland waterway terminals along an inland waterway system can be classified as general cargo, container, liquid, or dry bulk commodity terminals. Terminals of the latter three types usually include special loading and discharge equipment that permits efficient handling of large volumes of cargo.

AIR TERMINAL REQUIREMENTS

4-90. Need lead in when this FM is updated.

Air Force Terminals

4-91. The Air Force Component Commander normally provides terminal facilities and operations at all points served by AMC controlled aircraft. Aerial ports are designated for the sustained transshipment of personnel and material and function as air transportation hubs accommodating the loading and unloading of aircraft and in-transit processing of traffic.

4-92. The ASCC may also provide personnel and equipment to participate in loading, unloading, and transshipping Army personnel and material at Air Force operated air terminals. In each of these situations, the ASCC assigns a cargo transfer company or equivalent capability to execute the terminal tasks. The cargo transfer company may also furnish personnel to load and unload Air Force tactical airlift aircraft conducting Army unit moves. The cargo transfer company must accept cargo from the Air Force pending cargo disposition instructions. It may also provide breakbulk facilities for consolidated shipments and cargo awaiting Army transport. The transfer company may also operate a consolidation point for retrograde air shipments. The cargo company is normally attached to the mode operating battalion responsible for clearing cargo from the air terminal.

4-93. Most material delivered by air will be either vehicles or unitized cargo on Air Force 463L pallets. An A/DACG, cargo transfer capable element, or ATMCT will normally be present to coordinate with the TALCE and assist with aircraft off-loading operations. An ATMCT, interacts with the TALCE and the A/DACG (if in place). This team expedites movement of Army personnel and cargo through Air Force and HN air terminals to Army destinations. The ATMCT normally has commitment authority for the onward movement of Army cargo from the air terminal to other terminals, including the final destination. They also coordinate with the line-haul mode operators to assure timely arrival of clearance transports at the air terminal or in-transit area. The ATMCT also coordinates the local movement of retrograde Army material and personnel.

Army Air Terminals

4-94. The ASCC delegates the responsibility for selecting and operating Army air terminals to the senior Aviation commander. Army transportation units provide support as required by establishing a cargo and passenger operation within the Army air terminals as required. The procedures followed when supporting Air Force terminals apply.

SECTION V - Terminal Operations at the Tactical Level of War

INTRODUCTION

4-95. Tactical terminals perform similar functions as the terminals operating at the strategic and operational level. Their main role is to make cargo and personnel accessible to the tactical units. At the Corps, division, and brigade level, transportation systems and tactical terminals provide the key link between dispersed supply units and frequently moving supported units. Tactical terminals enable the logistical system to move supplies, equipment, and personnel on the battlefield in support of the tactical commander's concept of operations. In short, tactical terminal operations afford the commander the capability to concentrate combat power at the critical time and place to influence the battle.

4-96. The biggest challenge is moving ammunition, water, and bulk fuel from Corps rear area to DSAs or BSAs. Terminal operations at this level of war consider the habitual support relationships that exist between truck and transfer elements and ammunition and petroleum supply companies.

ARMY TERMINAL ORGANIZATIONS

4-97. Transportation planners choose from among a variety of Army transportation units to field those necessary to operate the terminals in the tactical AO. These organizations are designed to provide maximum flexibility. They allow a planner to fit the units to the commander's concept of the operation by matching them with the size of the force deployed and the characteristics of the terminals required.

4-98. To provide command and control for the terminal units, the transportation structure provides the COSCOM with the transportation support organizations needed to command and control the terminals. To provide support for a Corps, the Army uses a transportation composite group. When the size of the force is a division or brigade, a transportation battalion may be the senior Army terminal activity in the AO. The elements discussed above may command and control the modes of transport available in the AO in addition to the terminals.

CORPS TERMINAL OPERATIONS, PLANNING AND EXECUTION CONSIDERATIONS

4-99. At the Corps level, the COSCOM functions as the major subordinate command responsible for the direction and management of logistics and terminal operations in the Corps area. Exceptions include operational level supply activities and depots or terminals at inland waterway or rail lines, located within the Corps AO. In these instances, close coordination between the COSCOM and the operational level of war transportation command will provide for the efficient and effective operation of these terminals.

4-100. The tactical commander establishes terminals at Corps Army airfields, depots, supply support activities, or any other suitable location. These terminals permit the loading, unloading, processing, or handling of in-transit personnel and materiel between various transportation modes.

4-101. The COSCOM commander normally attaches a variable number of motor transport, cargo transfer, and trailer transfer units to the subordinate CSGs and battalions to form critical inland terminal links in the theater distribution system. These units may establish truck terminals and TTPs to support the operation. Attachments normally depend on the scope and duration of supported operations, availability of HNS equivalent units, requirements to transport supplies, equipment, and units, and the distribution pattern.

4-102. Theater dependent, the COSCOM can attach a US transportation HN CLT to a CSG. The terminal transfer CLT provides the liaison and interface between the MCC and wartime HNS TTB.

4-103. To support the supply system, transportation personnel need to determine transportation and terminal requirements. Planners must analyze how requirements change as terminal operations support offensive, defensive, and retrograde operations.

AIR FORCE AIR TERMINALS

4-104. The Air Force may establish air terminals in the Corps AO to support theater airlift missions. In these instances, the AFSCC provides terminal operations to load and off-load Air Force aircraft. However, the Army tactical commander may provide personnel to participate in loading and unloading Army personnel and equipment at these facilities. These operations are similar to those executed at Air Force terminals located at the operational level of war. The tactical commander may also accept responsibility for loading and unloading Air Force aircraft at other forward landing fields or airstrips that are not a regularly scheduled stop for theater airlift aircraft. A cargo transfer company may, in each of these situations, execute the terminal mission. The cargo transfer company may furnish personnel to load and unload Air Force theater airlift aircraft conducting Army unit moves. It may provide breakbulk facilities for consolidated shipments and cargo awaiting Army ground transport. The cargo transfer company may also operate a consolidation point for retrograde air shipments. The cargo transfer company is normally attached to the mode operating battalion responsible for clearing cargo from the air terminal.

ARMY AIR TERMINALS

4-105. The Corps aviation brigade operates the Army airfields. The COSCOM operates the air terminals on the Corps Army airfields. Facilities and services are provided at these terminals to support the air movement of personnel and supplies and for the efficient use of available aircraft. The tactical commander may assign cargo transfer units to load and unload aircraft, document cargo, and operate cargo segregation and temporary holding facilities.

DIVISION TERMINAL OPERATIONS, PLANNING AND EXECUTION CONSIDERATIONS

4-106. At the division level, the DISCOM provides for the direction and management of logistics and most terminal operations. Division terminal operations may be difficult to distinguish from organic CSS operations performed by the DISCOM MSB or FSB. At this level, a terminal operation is typically conducted at the DSA, BSA, or other fixed supply or distribution points (general, ammo, petroleum, water, and so on), including forward airfields. Terminals may also be nodes even further forward, such as battalion trains, where individual customers are furnished supplies.

4-107. Tactical terminals at the division level are often the final nodes in the transportation/distribution system. However, equally important, tactical terminals also serve as the origin terminals during redeployment and retrograde operations.

4-108. Terminals at this level are usually characterized by lesser capabilities than at the operational level and may have to be augmented to meet particular phases of the operation or requirements. The key requirement for tactical terminals operated by the DISCOM and other organic CSS units is that flexibility is a must in both operation and location to provide maximum support to the combat commander.

OFFENSIVE OPERATIONS

4-109. Offensive operations often require extended supply lines. Terminals, as the nodes used for final distribution, structure the supply lines. For this reason, the location of the terminals must be planned to coincide with the phases of the attack. The logistic plan must provide for a terminal support structure designed to increase the cargo throughput capability of the entire transportation system.

4-110. Maintaining an adequate stream of support requires the prompt turnaround of transportation assets. Forward delivery of cargo results in large numbers of Corps assets in division areas and division assets in brigade areas. These assets deliver fuel to MSB and FSB class III points and ammunition to ATPs. Efficient terminal operations perform a crucial mission. They provide stability to a system that can often present a confusing picture. They provide the stability by managing the final delivery of cargo and assuring the prompt turnaround of transportation assets.

DEFENSIVE OPERATIONS

4-111. Defensive operations often require shorter supply lines. During these operations, terminal operations involving the handling of fuel decrease. However, terminals handling ammunition normally increase their tempo. Increased loading, unloading, and processing of barrier and fortification materials is also the norm. The right MHE at the right terminal is important, as most of the commodities handled during these operations are heavy.

RETROGRADE OPERATIONS

4-112. Retrograde operations may require the extending of supply lines. Like in offensive operations, the logistic plan must provide for a terminal support structure designed to support cargo movements. The plan should provide for the integration and consolidation of cargo at selected transfer points early in the operation.

4-113. The selection of terminals, to include alternate locations, must support the concept of the operation. This means terminals must have the right supplies to continue to support the tactical operations of the combat units conducting the retrograde operation. Tactical terminals move to new or alternate operational areas at appropriate times.