

CHAPTER 1

SUPPLYING THE THEATER OF OPERATIONS

Section I

PRE-WAR SUPPLY SUPPORT

WAR RESERVE STOCKS

War reserve stocks are stocks acquired in peacetime to meet the increased military requirements that occur when war breaks out. War reserves support mobilization requirements and sustain operations until resupply can be established and expanded. War reserve stocks include decremented stocks, contingency stocks, and the types of items found in the various theater reserve stocks. AR 11-11 cites required stockage levels. An example is pre-positioned materiel configured to unit sets maintained in oversea areas. Policies and procedures for the management of war reserves are described in AR 710-1.

Pre-Positioned War Reserve Stocks

In a theater, the theater commander manages pre-positioned stocks. According to DA policy and guidelines, war reserve stocks may be pre-positioned oversea, on ships, or in areas within CONUS.

Oversea war reserves. These war reserves are positioned throughout a potential theater. They support post D-day combat consumption until supplies arrive from CONUS or other theater storage areas. Most war reserves are positioned in the COMMZ. A maximum of 10 days of supplies are positioned in forward deployed corps and TAACOM units for the transition to war. During peacetime, these stocks are controlled by a theater army. At or near the start of hostilities, they are released to the corps and TAACOMs where they are stored.

Supplies pre-positioned on ships. As part of the Near-Term Pre-Positioning Force, the US has chartered merchant ships which remain on station. These ships will join with the equipment pre-positioned at sea and then proceed to trouble spots. Vessels and cargo undergo cyclic inspection

and maintenance to ensure good readiness posture. They can also provide selected sustaining supplies for Air Force and Army units.

CONUS war reserves. War reserves are held in CONUS when they cannot be pre-positioned at or near the point of probable conflict. Reserves may be held in CONUS depots for a specific force, area, or operational project. They may also be held for use as contingency support stocks.

Other War Reserve Materiel Stocks

These stocks consist of all other war reserve items. They include Class VII major end items, secondary end items, and repair parts. These assets will have purpose codes of C, D, or E, as explained in AR 725-50.

Deployment

During the early portion of the mounting phase, supplies must be brought up to required levels. Assault forces must be self-sustaining until they withdraw or link up with ground forces. In the event of a contingency or airhead operation, division elements deploy with prescribed amounts of all classes of accompanying supplies. These supplies are taken into the objective area by both assault and follow-on echelons. Three days of supply are desired in the airhead. The minimum safety level is two days. During the initial phase of deployment, this is the only source of resupply. Emergency resupply will likely be limited to Class I, III, and V items. Before beginning an operation, commanders should ensure that--

- Equipment shortages are made up.
- Reserve stocks of critical items are established.
- Priorities are established for issue of float stocks and other controlled Class II, IV, and VII items.

- Procedures and policies are established for aerial supply of Class I, III packaged, and V items.
- Procedures and channels for recovery, evacuation, and disposition of captured or abandoned items are reviewed.
- Data on availability and capability of transportation is available.

For more details on logistics preparation of the battlefield, see FM 10-1, Chapter 2.

PRE-POSITIONED MATERIEL CONFIGURED TO UNIT SETS

Pre-positioning part of a CONUS-based unit's equipment in an oversea theater reduces strategic lift requirements. This results in a quicker reaction time for a combat unit to meet a contingency. POMCUS items, consisting primarily of Class VII weapons systems, are located at storage sites, which are manned by a US Army combat equipment group.

INITIAL PREPLANNED SUPPLY SUPPORT

Initial preplanned supply support is the combat-essential materiel required early in a military operation. Precut requisitions are maintained at CONUS NICPs or TAMMCs. When alerted for deployment, a unit directs the NICP, MMC, or DAAS to release preplanned increments of 5 to 15 DOS. These increments help sustain deployed forces between the time accompanying supplies and pre-positioned stocks are exhausted and demand-supported resupply starts in a theater of operations. For more details, see AR 725-50, Chapter 12.

HOST-NATION SUPPORT

HNS is the civil and military assistance provided by host nations to allied forces and organizations. This support may occur in time of peace, transition to war, or war. As a rule, the location of forces on the battlefield determines whether you can use HNS. The rearmost areas are ideal for this support. Corps rear areas and echelons above corps are more static and lend themselves to HNS. However, in an undeveloped theater, HNS may be used wherever needed. AR 570-9 has DA policies and responsibilities for HNS. In the past, US forces

relied on organic support. Today, logisticians must keep abreast of agreements on how their allies can help support the battle logistically.

Agreements

International agreements document commitments for HNS. Through agreements, the host nation sets forth its intent and willingness to support US requirements. For example, will host-nation civilians remain at war reserve storage sites after hostilities begin? Is the host nation to retain territorial responsibility and control of supply ports, rail facilities, and airspace? It may be that the host nation will turn over control of MSRs to another nation or alliance. Host-nation transport could be used to move supplies from seaports to GSUs and beyond. Support available in a given theater will depend on the host-nation's political climate; national laws; industrial development; and military, civilian, and commercial resources. Laundry, textile renovation, and CEB are CSS services which host nations could provide. These services would, in turn, affect Class II stockage and supply flow procedures.

Reasonably Assured HNS

Support based on signed national agreements, plans, or other acceptable documents maybe considered reasonably assured support. Such support affects the size and composition of our force support structure and, in turn, affects deployment plans, demand forecasts, and supply stockage levels.

Prudent Risk HNS

This is the risk that we accept as to the amount of support which may be provided to US forces. Army staff officers must consider the minimum force structure needed to meet and remain responsive to mission requirements. The theater commander, in coordination with HQDA, must determine the types and levels of HNS that can be accepted without placing mission accomplishment at an unnecessary risk.

Contingency Contracting

Supplies and services may be available in some nations where no HNS agreements are in place.

Contingency contracting may provide this source. Whereas HNS represents government-to-government agreements, contingency contracting is conducted directly with local businessmen or firms. Recent experiences have shown the value of local contracting to support the initial deployment phase of US forces. All the limitations noted above for HNS remain valid, however; and contingency contracting must be considered as primarily a short-term source.

TRANSITION TO WAR

The transition phase begins with advance warning of an impending war. It continues until SEALOC have been reopened and the necessary logistics structure is in place to sustain war. During the transition phase, all supplies and logistics functions nonessential to the war effort must be eliminated. The SSA initiates selective cancellation action on requisitions deemed nonessential for combat and unnecessary for individual health and welfare. For example, certain health and safety items, such as toilet paper, though not in the pre-positioned war reserve materiel stocks and not coded combat essential, must be requisitioned because they are essential for health reasons. Procedures for preparing and processing cancellation documents are covered in AR 725-50, Chapters 3 and 4. Canceling nonessential requisitions lessens the strain on ADP equipment. It also reduces the number of requisitions on CSS units which must distribute CONUS war reserves, fill unit shortages, and equip all forces on deployment alert. On mobilization day, selected general supplies are removed from storage and transported to forward areas. Initially, combat forces must rely on accompanying basic loads, oversea war reserves, and air delivery of Class IX and maintenance-related Class II items. An emergency airlift of general supply items, normally shipped by SEALOC and surface transport, will probably be necessary.

Corps Transition Support

Forward deployed corps, COSCOM, and TAACOM units stock a maximum of 10 days of

pre-positioned war reserve materiel stocks which consist of Class I supplies; selected Class II, III, IV, V, and VII supplies; and Class IX items not delivered by air. This enables the corps to support units through D+10. After these stocks are exhausted, the corps requisitions from the TAMMC, which directs the TAACOM to issue from its theater army area GSUs. These war reserves become the corps initial wartime ASL. The corps then becomes the source of surface resupply for divisional and nondivisional DSUs. The corps also makes the transition to war with a 30-day supply of essential, air-eligible, maintenance-related Class II, III packaged, and IX items.

TAACOM Transition Support

At the direction of the theater army commander, the TAMMC releases preplanned packages of surface-delivered supplies to the TAACOM. TAACOM GSUs are the main source of surface supply for TAACOM DSUs and for units passing through the COMMZ. Though managed by the TAMMC, war reserves are stored in TAACOM GSUs. Like the corps, the TAACOM goes to war with a 30-day supply of GS, maintenance-related Class II and Class IX items delivered by ALOC. These supplies support materiel operating in the COMMZ and repair of items evacuated to the rear.

Requisition and Materiel Flow

In peacetime, divisional, COSCOM, and TAACOM DS and GS units are resupplied by DSS from CONUS. During the transition-to-war phase, the units are resupplied from the 30 days of sustaining theater army stocks in TAACOM GSUs. As required, the TAMMC calls forward preplanned supply packages from CONUS depots. As the tactical situation changes, the TAMMC may request modifications in these supply packages.

Requests. In the BSA and the DSA, using units submit requests to the supply point run by their supporting DSU. If possible, high-priority requests are filled, and the DMMC is notified of the fill. All other requests are transmitted to the DMMC. If

a request is for a controlled item, the DMMC transmits a requisition through the CMMC to the TAMMC.

Issue. Supplies are issued from the lowest level. If the item is on hand in a DSU, the MMC cuts an MRO directing the DSU to issue the item. (Main supply points may be directed to issue the item to a forward supply point.) If the item is not on hand at a DSU but is on hand at a GSU, the MMC directs the GSU to issue the item to the DSU.

Requisition. When the item is NOT on hand in the DSA, the DMMC prepares and transmits a requisition to the CMMC. When the item is NOT on hand in the corps rear area, the CMMC transmits

the requisition to the TAMMC which queries the TAACOM MMC. When the item is not available at a TAACOM GSU or DSU, the TAACOM MMC transmits the requisition to the TAMMC. The TAMMC transmits replenishment requisitions and any requisitions for items not on hand in the theater to the appropriate NICP. The NICP cuts an MRO directing a depot to issue the item. In an emergency, the item may be airlifted to the theater. However, most general supply items are shipped by surface transport to the theater. When possible, supplies are throughput to DSUs. Other items are transported by HNS or transportation command assets to a TAACOM GSU. For more details and graphics, see FM 10-1, Chapter 5.

Section II

SUPPLY SUPPORT DURING SUSTAINED OPERATIONS

WARTIME SUPPLY STOCKAGE LEVELS

Adequate stockage levels help the transition to war and ensure sustainability during hostilities. DA prescribes stockage objectives for the theater in terms of DOS. Initial stockage is based on expected usage rates. After the war begins, range and depth of stockage are adjusted to meet wartime demand criteria. Quantities are computed based on actual or expected demand, OST, and safety levels. GSUs normally maintain a wartime sustaining level of 5 to 10 DOS plus OST for all classes except Class II and IX items to be delivered by ALOC. However, to provide sustained supply support, the theater army commander may allow up to 30 days of critical Class II and IX items to be stocked.

Direct Support Units

DSUs at all levels in division, corps, and TAACOM stock an RO for general supplies consisting of a 30-day operating level, a 5-day safety level, and actual OST by item. Stockage levels for all other classes are prescribed by the theater army commander. Stockage levels at corps and TAACOM

GSUs vary depending on the class of supply. AR 710-2 shows the DOS for each class of general supply.

War Reserve Stockage List

The war reserve stockage list identifies items which are to be maintained as war reserve stocks. The list is used to compute war reserve requirements essential to sustain combat and to support sudden mobilization requirements.

DIRECT SUPPORT SYSTEM

General supplies, Class II, III packaged, IV, and VII, are distributed through a DSS. This supply distribution system is described in FMs 38-725-1 and 63-4. Under this supply distribution system, supplies are throughput from CONUS wholesale depots to the requesting SSA. Throughput reduces the need for an intermediate supply level. Theater SSAs supported by the DSS include DSUs and GSUs. For related automated procedures, see the appropriate 38-series TM. Units send requests to their SSA. Requisitions are transmitted from the SSA to the MMC. They are edited

for validity and PD. For selected items, the TAMMC screens theater assets to determine if requisitions with PDs 01 through 03 and NMCS requisitions can be filled from assets on hand which are below the 30-day safety level or war reserve stockage level. If there are safety level or reserve stocks on hand in the theater, the requisitions are filled. Partial issues can also be made. CMMCs, TAACOM, MMCs, and TAMMCs transmit requisitions to CONUS NICPs. An image copy of all transactions is maintained in the LIF data bank. The inventory control point then transceives an MRO to the supporting distribution depot when depot assets are available. An MRO is cut only on assets reported on hand. Consolidation and containerization points pack cargo according to theater distribution plans. Containerized shipments are then moved to the port of embarkation. Class IX and maintenance-related Class II DSS cargo is transported by ALOC. All other cargo is shipped to the theater by surface transportation. When supplies reach the theater port, MCCs coordinate with MMCs on routing. Routing instructions are based on transport assets, routes, and the tactical situation. Shipping containers or pallets are then transported to the requisitioning SSA or supply point. If possible, shipments are routed directly to the requisitioner. Containerized cargo en route at the outbreak of hostilities may be diverted to the appropriate GSU.

SEALIFT AND CONTAINERIZED SURFACE DISTRIBUTION

The logistics of rapidly supplying and sustaining forces and other US government agencies deployed in areas where little or no pre-positioned materiel is on hand or where no HNS is assured is staggering. More than 90 percent of all wartime cargo tonnage will go by sea, regardless of where the conflict is. With the exception of Class IX and maintenance-related Class II items, general supplies arrive in the theater through seaports in 20- and 40-foot general cargo containers. Nearly all general supplies are shipped to the theater and transported within the theater in containers. Close to 75 percent of Class IV items can be containerized.

Only 20 percent of Class VII items can be shipped in containers.

Containerization

Intermodal container service is the preferred method of shipping DOD-sponsored surface cargo. Container resources of the commercial transportation industry are used when they are responsive to military requirements. When commercial containers do not meet military requirements, DOD-owned or leased containers may be used. Therefore, Army-owned containers and container-handling equipment must be compatible with commercial container ships, transporters, and handling equipment. Advantages in shipping supplies in containers include:

- Shorter time required to prepare shipments.
- Lower freight cost.
- Less breakage.
- Reduced documentation.
- Less pilferage.
- Better accountability.
- Less ADP effort.

Seaport Facilities

Fixed-port terminals provide suitable facilities to off-load containers and transfer them to inland transportation modes. Use fixed-port facilities to the maximum extent possible. They can discharge many containers rapidly, are equipped with container-handling equipment, and are located close to inland transportation hubs. Logistics over-the-shore operations can be used with fixed-port operations if berthing space is limited. See FM 55-17 for more details on terminal operations.

Fixed-port terminals. Equipped with modern MHE, these terminals are usually located at or near rail- or truck-loading sites. Commercial operators handle military container operations at fixed ports. The host nation may continue to operate existing facilities during wartime. For planning purposes, container ships may be discharged and back loaded at the pier in 24 to 48 hours. Transportation terminal service companies are organized to discharge and load containers. A

shore-based crane can pick up and position containers in three varying amounts per day depending on its make. The most efficient cranes can position as many as 40 containers per hour.

Logistics over-the-shore operations. Extra time and resources are needed to move containers from ships to and across the beach. Crane ships off-load containers to lighters. Lighters transport cargo to a beach transfer point. Terminal service companies are assigned the mission of discharge, loading, and beach operations. Trailers transport containers from the beach or shore to container marshaling areas and long-haul truck-loading points.

Roll-on, roll-off cargo ships. Fully loaded trailers may be driven aboard especially designed cargo ships. This type of container ship can transport 900 to 1,500 containers. Trailers are hooked up to tractors and driven ashore at the oversea terminal.

Supply Distribution

Most of the cargo unloaded at seaports will be moved initially to TAACOM GSUs whose stocks are managed by the TAMMC. Some cargo may be transported to TAACOM DSUs. Whenever feasible, supplies should be throughput from seaport or marshaling areas to corps and division supply echelons.

Container Surface Distribution

Commercial and military containers (20 and 40 foot) transport supplies from CONUS directly to GSUs in the COMMZ and corps rear area and to DSUs throughout the theater. Part of the 30-day COMMZ general supplies may be temporarily stored in containers. Twenty-foot containers are used primarily in intratheater loops between GSUs and from GSUs to DSUs and DISCOM units. High-priority cargo and intensively managed high-cost Class VII items may be shipped in containers from CONUS and transported by truck directly to DSUs and DISCOMs. Units have 48 hours to strip and return containers to the transportation system.

Automated Control and Support

The DA Standard Port System-Enhanced provides automated support for water terminal operations

during war as well as during peace. It provides management data on inbound and retrograde shipments. The theater army MCA maintains information on the location and status of all containers in the theater. It coordinates with the TAMMC on priorities for container shipments and reassignment.

RAIL NETWORKS AND INLAND WATERWAYS

Road networks may be inadequate for the volume of traffic required to move units and sustainment forward and to evacuate damaged equipment and combat casualties. Using host-nation rail networks and inland waterways to move a portion of requirements can help alleviate potential congestion. Movement planners should plan for the use of rail and inland water modes when available and feasible.

Rail Networks

Though vulnerable to enemy aircraft, guerrilla actions, and sabotage, rail is the best mode to move large quantities of supplies and equipment over extended distances. For more details on rail operations, see FM 55-20.

Inland Waterways

Inland waterways help suppliers move cargo from an ocean terminal to an inland transfer point not accessible to ships with a deep draft. Using inland waterways relieves congested road networks and reduces the number of vehicles required to supply combat forces. For more details on Army water transport operations, see FM 55-50.

AIR DELIVERY OF SUPPLIES

Air transportation is a flexible and essential element of the transportation system. It becomes increasingly important as the intensity, depth, and duration of operations increase. Both the Army and Air Force provide air transportation. Army aviation in CSS air movement operations includes:

- Support for intratheater airlift.
- Logistics over-the-shore operations.
- Troop and personnel movements.
- Aerial preplanned and immediate resupply.

- Movement of critical Class IX and maintenance-related Class II supplies.
- Retrograde of reparable.
- Pre-positioning of fuel and ammunition.
- Movement of low-density and high-cost munitions when time, distance, situation, or condition of the roads inhibits ground transportation.

Air Force airlift and airdrop supplement the Army's transportation capability. They can be viable modes for CSS movement requirements under certain circumstances. However, they require much longer lead times to plan and coordinate than Army airlift assets. Army aviation assets are allocated by the theater army, corps, and division commanders to support CSS air movement operations. Once allocated, these assets are committed by the TAMCA, MCC, and MCO. Air Force aircraft are apportioned by the joint force commander. The Air Force provides the aircraft, civil air patrol services, and the personnel and equipment to load the aircraft. The Army provides the supplies, rigs them as necessary, transports them to the airfield, and off-loads them from ground transport. The QM airdrop equipment repair and supply company supplies airdrop equipment. The light and heavy airdrop supply company prepares supplies for airdrop. FM 10-512 shows how to prepare and rig typical supply loads of bulk material on platforms for airdrop.

Airlift Requests

FM 100-27 shows the flow of requests for airlift of supplies. FM 55-10 provides detailed request procedures for both Army and Air Force airlift. Request formats vary by oversea command based on standardization agreements, but generally contain the data elements found on DD Form 1974.

Sling-Load Operations

FM 55-40, Appendix G, describes responsibilities for loading equipment in support of air transport operations. Supporting unit personnel requisition slings, A-22 bags, cargo nets, and containers needed for sling-load operations. The supporting unit selects the pickup zone and provides ground crews to pack, rig, and inspect loads and to hook

up the loads to the helicopter. It also provides the receiving unit with derigging and disposition instructions. The using unit selects the landing zone, derigs the load, and coordinates the recovery of air delivery items with the supporting unit. The using unit also inspects and maintains the slings.

Recovery and Evacuation of Air Delivery Equipment

Airdrop operations require special rigging equipment to deliver supplies. Air delivery equipment is expensive, in short supply, and hard to replace. Increased requirements for air delivery dictate that air delivery equipment be recovered and evacuated to the QM airdrop equipment repair and supply company. Recovery and evacuation priorities are listed in TM 10-500-7.

GROUND MOVEMENT OF SUPPLIES

Movement control organizations at all echelons plan the movement of supplies by all surface modes. Planning has two parts. First is the development of the distribution pattern, which considers the location of supported units, supply activities, and transportation units and facilities. Second is the development of the transportation network and movement programming to satisfy the daily programmed and unprogrammed requirements. More details on ground movement of supplies are in FM 55-10.

Transportation Planning

Transportation planners must consider the physical transportation network and facilities available, the size and disposition of the supported forces, and the location of the primary in-theater supply activities in their plans. They should select seaports, aerial ports, and rail and road networks to make it easy to distribute personnel and materiel into the area of operations. The facilities and networks selected must accommodate the expected volume of movement. When the facilities or networks are not well developed, the planner must influence the placement of the supported force and the location of supply and maintenance activities so that the operation can be supported with the

transportation resources available. The size of the transportation support structure depends on the following:

- Size of the force to be supported.
- Expected tonnage to be received and moved.
- Number of facilities (water ports, aerial ports, mode transfer points, and trailer transfer points) used.
- Physical size of the area to be supported.

Movements Plan and Program

The movements program is a result of movements planning. The program is prepared jointly by the MCC and the MMC at each echelon.

The movements plan. The movements plan includes a forecast of movement requirements and the available transport capability. Both requirements and capabilities are in general terms. When the plan is coordinated and approved, *specific* transportation resources are allocated against specific movement requirements. The movements plan then becomes the movements program. The three major logistics levels (division, corps, and TAA) should have mutually supporting movements programs. The seven basic steps in planning are:

- Assessing the distribution pattern.
- Determining movement requirements.
- Determining transportation capabilities.
- Balancing requirements against capabilities.
- Determining shortfalls.
- Recommending solutions.
- Coordinating, publishing, and distributing the plan.

The movements program. The movements program period varies with the stability of the situation and the ability of supply and personnel managers to forecast their requirements. Forecasts must be submitted far enough in advance for the transportation and supply systems to adjust their resources to carry out the program. A desirable cycle for the program is 14 days, for which there is a firm forecast of requirements for the initial 7-day period and a tentative forecast for the succeeding 7-day period.

Daily adjustments should be made only for urgent unforecasted requirements.

Movement Control

The MCC or MCA controls transportation assets in the theater. The theater army MCA, MCC, and MCO control transportation assets by allocating and committing available transportation resources to satisfy movement requirements. They allocate and commit based on their commander's priorities. Transportation priorities are established by required delivery date, the issue priority of the cargo, or by preestablished command priorities by unit or commodity. When movement requirements exceed capabilities, movement planners request support from higher headquarters.

Movement control teams. MCTs are assigned to the corps MCC and TAMCA. They are positioned in the corps and COMMZ to allow close and constant coordination with the units they support. In the corps, MCTs are collocated with each CSG. They also operate in a geographic area or at specific sites to expedite, coordinate, and monitor traffic moving through the transportation system. MCTs process movement requests and arrange transportation for moving personnel and materiel. They receive and process programmed and unprogrammed transportation requests. They commit mode operators for programmed movements or select the mode for unprogrammed movements. The MCTs support highway regulation by receiving and passing clearance requests for movement on controlled MSR's. They also enforce movement priorities, monitor container use, and help customers.

Highway regulation. Highway regulation is a responsibility of the commander having area jurisdiction. He and his staff plan, schedule, route, and direct the use of highways. The MCC's highway traffic division regulates highway traffic. Subordinate highway regulating point teams carry out highway regulation plans. MPs support highway traffic regulation by performing traffic, straggler, and refugee control activities. Regulated movements include convoys, oversized or overweight vehicles, vehicles moving by infiltration, and troop

movements on foot. Responsibilities of the highway traffic division and its highway regulating point teams include circulation planning, routing, and scheduling of traffic. The traffic plan portrays the road network and how it is to be used and maintained. The plan normally includes restrictive route features; route designations; direction of movement; and locations of boundaries, units, highway regulating points, traffic control points,

and major supply or shipping activities. Traffic is routed over designated routes to balance the vehicle and route characteristics (road surfaces, curves, and bridge capacities) and to reduce traffic congestion or conflicts. Traffic scheduling is the coordination of times for movement along specified routes to satisfy command movement priorities; minimize delays, conflicts, and congestion; and promote security and passive defense.

Section III

SUPPLY SUPPORT FOR DIFFERENT TACTICAL OPERATIONS

AIRLAND BATTLE DOCTRINE

AirLand battle is the Army's basic operational concept for fighting the next war. AirLand battle doctrine emphasizes the need for coordinated air and ground actions. It includes plans for three simultaneous operations--deep, close, and rear. AirLand battle can enable a well-organized, small force to defeat a poorly organized, larger force. The four tenets of AirLand battle are initiative, depth, agility, and synchronization. See Table 1-1. These principles apply to all levels of conflict, including low-intensity conflict which primarily involves peacekeeping and counteracting terrorist activities. For more details on AirLand battle, see FMs 100-5 and 100-10. QM supply companies can

provide support to AirLand battle by--

- Ensuring continued logistical support.
- Shifting support to different user units without delay when directed by higher headquarters.
- Reacting to any rear area threat.
- Pushing CSS forward to those who can benefit most from the overall battle plan.

COVERING FORCE OPERATIONS

The covering force is normally the first ground maneuver force to make contact with the enemy. It operates between the forward edge of the battle area and the forward line of troops.

Table 1-1. Four tenets of AirLand battle

TENET	ACTION
Initiative	Anticipate and plan for offensive actions.
Depth	Consider the full width and depth of the battlefield.
Agility	Think and act quicker than the enemy.
Synchronization	Coordinate deep, close, and rear operations. Coordinate air and ground actions.

Operational Concept

The purpose of the covering force is to weaken and delay the enemy as it prepares to attack divisions and separate brigades in the main battle area. The size and makeup of the covering force depend on the terrain, the mission and mobility of the force, and the number of troops available. As a rule, the covering force does not have the strength or firepower to defeat the enemy. Instead, its mission is to disrupt enemy operations by harassing, disorganizing, deceiving, and delaying enemy forces. The covering force slows down the attack, gives divisions and separate brigades needed maneuver space and reaction time, and provides information about the enemy's strength, location, and direction of attack.

Supply Support

Supply support in the covering force area is provided by forward supply companies. The covering force must sustain itself until it is resupplied. It carries basic loads of Class I operational rations, Class II and IV items, and Class II and V supplies. If there is enough transportation available, more supplies can be moved. If Class III and V stocks are pre-positioned, transportation assets can be used for Class II, III, IV, and VII items. Critical Class VII items may be pre-positioned in a "ready-to-fight" condition. Details uncovering force operations are in FM 63-1.

CLOSE BATTLE AREA OPERATIONS

The close battle area is between the covering force and the brigade rear boundary. This is the area where heavy fighting takes place.

Operational Concept

The role of our forces in the close battle area is to repel, to counterattack, and to seize the initiative from enemy forces. Our forces must be able to shift locations and firepower to stop enemy attempts to break into our lines of defense. FM 71-100 covers operational concepts used in close battle to defeat enemy forces.

Supply Support

Combat units in the close battle area rely on their CSS elements and on DS backup units for battle support. Corps CSS units can be located in the BSA to support the majority of corps field artillery units being employed in the brigade area. Nondivisional combat units get both DS and GS from corps CSS units. Corps CSS units provide backup DS and GS to divisions. An FSB employed in the BSA provides DS to each division maneuver brigade. FM 63-20 provides information on FSBs. Though based in the DSA, an MSB provides support forward, as required, to include backup support to the FSB. CSS units that support the close battle area must be able to gather and distribute supplies and equipment rapidly. They must perform needed support functions in the battle area and in corps forward areas. Corps ground and air transportation elements provide resupply and emergency supply deliveries in the close battle area.

REAR OPERATIONS

The rear operations area of the AirLand battle covers the area from the brigade rear boundary to the division rear boundary. The corps rear area goes from the division rear boundary to the corps rear boundary. Each echelon has its own area and its own rear operations commander.

Operational Concept

Rear area operations may be directed against threats ranging from sabotage to airborne or air assault operations. The deputy corps commander in the corps rear CP coordinates with the RAOC. In the rear area, CS and CSS units are generally grouped together in bases or base clusters for protection or to support a specific mission. FMs 71-100, 100-5, and 100-15 explain the coordination and services provided by rear area units. These FMs also explain how CSS operations effect the AirLand battle.

Supply Support

Supply points and CSS units are scattered throughout the rear area. In the DSA, an MSB provides DS

to division units in the division rear. FM 63-21 covers the MSB. A CSB supports nondivisional forces employed in the division sector. Nondivisional units obtain DS and GS from CSGs. Forward CSGs also provide reinforcing DS maintenance, field services, and GS supply to division forces. Depending on the task organization of forward CSGs and CSBs, they could provide GS petroleum, GS ammunition, and GS general supplies to division forces. GSUs provide Class II, III packaged, IV, VII, and IX supply support for divisional and nondivisional DSUs. Corps units and above provide air and ground transportation needed to deliver new equipment, supplies, EPWs, and other personnel to forward areas. They also back haul disabled equipment to a backup DS unit in the corps or to a GS maintenance unit beyond the corps rear boundary. The rear area may become a battlefield just like the forward edge of the battle area. CSS soldiers must be trained to defend and protect themselves as well as provide mission support.

CONTINGENCY FORCE OPERATIONS

Contingency force operations are those conducted with a rapid response to a sudden crisis. Units must be prepared to deploy rapidly and on short notice. HNS may be questionable. Local third-country forces may be poorly trained and poorly equipped.

Operational Concept

Operations begin with a rapid show of force. Heavy reliance is placed on support from the other services. The scope and nature of the operation determine the force organization and operations. Forces should be more mobile than the enemy. Commanders should also use economy of force, surprise, and bold aggressive actions.

Supply Support

Force planners have reduced support to the essentials. There will be limited or no prestockage of supplies. Because of austere base development, DS and GS supply companies are often required early in contingency operations. FM 63-6 covers

logistical support of contingency operations. Support is divided to provide accompanying and follow-on supplies.

Accompanying supplies. Sufficient supplies must accompany the assault force to enable it to sustain itself until it is resupplied. Accompanying and follow-on supplies for contingency force operations will be uploaded in modular unit-owned containers. They must not exceed the force's ability to carry and secure them. Supplies are usually limited to basic combat loads and a limited number of items critical to the operation. Class IV barrier and fortification materials are often critical to the initial phases of a contingency operation.

Follow-on supplies. Follow-on supplies must replenish combat losses. Airports and seaports may be few and far from CONUS. How the contingency force is deployed will indicate how it will be resupplied. If the force is deployed by sea, it will probably carry its initial supplies and be resupplied by SEALOC with critical items provided by air. If the force is airdropped or airlanded, initial supply would probably be by air. Resupply would be by ALOC until SEALOC and surface supply were established. Local transportation networks may be primitive. Therefore, enough transportation units must be assigned to ensure that airports and seaports do not become clogged with supplies. Until SEALOC can be established, replacement of Class VII weapons systems will be limited to those systems which can be recovered and repaired.

SPECIAL OPERATIONS

SO are military operations of a sensitive nature conducted by specially trained, equipped, and organized DOD forces. These forces are committed against strategic or tactical targets in pursuit of national, military, political, economic, or psychological objectives. These operations may be conducted during periods of peace or during hostilities. They may support conventional operations, or they may be used independently when the

use of conventional forces is either inappropriate or unbearable.

Requirements

SO forces of the US Army have both standard and mission-peculiar supply requirements. More details on SO are in FMs 31-20, 90-8, and 100-25.

Standard supply requirements. Standard supply requirements are supported by the CSS GSU tasked to support the theater army special operations support command. The TASOSC is subordinate to the theater or unified SOC or SOTF. All supporting supply requirements of a standard nature are consolidated by the ARSOC and forwarded to the supporting GSU. Certain SO assets, normally psychological operations and civil affairs units, are traditionally attached to infantry, armor, and mechanized units at battalion, brigade, and division level as well as to corps headquarters. These units receive support for standard supply requirements directly from the organization to which they are attached.

Mission-peculiar supply requirements. Mission-peculiar supply requirements are supported through SOC or SOTF logistical channels. CSS GSU personnel furnish the support to the employed SO elements.

Supply Support

All supply requirements are planned for and coordinated by the SO units concerned prior to deployment. Plans for support of unit supply requirements are approved at the SOC and coordinated through the ARSOC.

Accompanying supplies. Sufficient supplies will accompany each SO unit to sustain it until the unit comes under ARSOC subsequent to deployment. Accompanying supplies include those required to support unit personnel and organizational needs. These supplies must not exceed organic transport capability. The unit must acquire and prepare supplies for deployment.

Force supplies. These supplies back up accompanying supplies. Force supplies include all classes of supplies. Force supplies are planned for by the

units concerned. The ARSOC coordinates and supervises forward positioning of force supplies.

Reserve supplies. Reserve supplies are primarily for emergency use. Reserve supplies are planned for by the units concerned. The ARSOC coordinates and supervises the forward positioning of these supplies.

Follow-on supplies. Follow-on supplies are supplies which may be required to support employed SO assets. They include major backup items of equipment, Class V, and repair parts. They can also include those supplies anticipated for use by indigenous groups. Follow-on supplies are delivered into the operational area on an on-call or a preplanned basis. These supplies are maintained at the primary bases of the SO units concerned. Levels and amounts are determined prior to deployment.

Automatic follow-on supplies. Automatic follow-on supplies are delivered on a preplanned basis at times and locations coordinated prior to employment of SO assets. All classes of supplies are included.

On-call, follow-on supplies. On-call, follow-on supplies are delivered upon request to SO assets in the operational area. They are usually of a contingency nature and are delivered when and where the using unit requests. On-call, follow-on supplies include all classes of supplies and are planned for prior to employment.

Routine supply requirements. Routine supply requirements are supplies requested and delivered through normal supply procedures. They are initiated following deployment. These supplies are issued on a routine basis except in emergencies. The ARSOC monitors routine supply requirements.

AIR ASSAULT OPERATIONS

Air assault operations involve using helicopters to deploy over extended areas. Air assault operations can be conducted anywhere in the world depending on weather conditions. More details on air assault operations are in FMs 10-27-2 and 10-27-3.

Operational Concept

In air assault operations, supplies, troops, and equipment are moved throughout the battlefield in aircraft, usually helicopters. Air assault operations may involve airlifting units for combat operations, shifting and relocating units within the combat zone, or moving and delivering supplies and equipment. Airlift in support of air assault operations is classified as either CS or CSS, depending on the mission and the kind of cargo airtitled.

Request Procedures

Requests for air assault support can start at any level of command. There are two types of support requests: requests for preplanned, immediate operations and requests for emergency airlift combat support. Both types are sent through operations and logistics channels to the commander with the authority and capability to approve them. FM 100-27 and the air delivery information in this chapter explain each request procedure. The unit requesting the support is generally responsible for planning, obtaining, and coordinating the supplies and personnel to be airlifted.

Supply Support

Because air assault forces must be able to deploy rapidly, they carry only essential supplies and equipment with them. These supplies need to be replenished frequently. Supplies and equipment not needed for survival or combat should be left in the rear and moved forward when needed. Supply support is generally provided by an independent unit with CSS elements attached.

Support for ground forces. Ground forces in an air assault operation carry enough essential items to sustain them for a limited time. GS items are provided by CSS units and other ground forces. Routine resupply items should be delivered as close as possible to ground forces instead of being stockpiled at a central location. This will help forces deploy more rapidly and relocate more quickly. Emergency ground force resupply should include prepackaged, mixed loads so that if the force gets only a few of the requested loads, it will get a mixture of essential supplies.

Support for the air element. The air element of an air assault operation requires special aircraft repair parts, supplies, and services. Generally, these are provided by a supporting aviation unit. A forward arming and refueling point may need to be set up to help sustain the aviation element of the operation. Special needs must be coordinated between the ground element and the aviation force commanders during the planning phase.

AIRBORNE OPERATIONS

An airborne operation involves moving and delivering forces, supplies, and equipment by air into an objective area. In addition to being airlanded into combat, airborne forces can parachute into combat.

Operational Concept

Divisional airborne brigades receive supply support from a forward supply company located in each BSA. Logistics units from the division base come under the control of the S&T battalion. A separate brigade receives CSS from the brigade support battalion. A separate brigade will be a satellite on a support command for CSS. FMs 10-27-2 and 10-27-3 explain the composition and organization of airborne and air assault brigades and divisions.

Supply Support

Until CSS units join ground forces during the follow-up operation, all supply support for an airborne operation is preplanned by the G4. The G4's estimates are based on the three phases of supply requirements involved in an airborne operation.

Accompanying supplies. Individual soldiers carry these supplies into the assault area. They include the supplies airdropped with the deploying unit. Maneuver units in airborne and air assault divisions normally carry a basic load of ammunition, a three-day stock of Class I and III packaged supplies, and a prescribed load of fast-moving repair parts. Accompanying supplies are the only source of supply during the first stages of the operation. They include unit, force, and reserve

supplies. Unit supplies include the basic loads of ammunition and the prescribed loads of the other classes of supply. The rigging, loading, recovery, issue, and control of unit supplies are the responsibility of the airborne unit. Force supplies are bulk supplies that act as backup for unit supplies. Force supplies include all classes of supply. The S4 of the deploying unit is responsible for controlling these supplies. Reserve supplies are set aside and stored at the division for later use. Also, they are used for special or emergency missions. The DISCOM is responsible for issuing and controlling reserve supplies.

Follow-up supplies. These supplies are delivered by air after the unit has made its initial assault. They help the unit operate until normal supply procedures can be set up. Follow-up supplies include all classes of supply. They are generally prepackaged, rigged, and stored at the beginning of the operation for immediate distribution. Quantities are based upon the G4's estimate of the unit's daily requirements. The battalion S4 requests follow-up supplies for the battalion. If more than one battalion requests follow-up supplies at the same time, the commander decides which has priority. A two-day level of extra stocks, including Class IV and a small stock of critical repair parts, is often kept near the departure airfield. These stocks are delivered automatically or on call. Automatic follow-up supplies are delivered on a preplanned schedule, normally once a day beginning with D+2. The amount delivered is based on an estimate of the quantities of supplies used daily by the requesting unit. Automatic follow-up supplies are either airdropped to the unit or airlanded at a central supply point. Because quantities are preplanned, they may not include the exact amounts of particular items deploying forces need. On-call, follow-up supplies are delivered to the deployed unit as needed. They are generally used for emergency purposes or to fill a routine request for a specific item. Emergency supplies must be delivered within 24 hours. On-call, follow-up supplies of a routine nature are delivered on

a flexible schedule, generally between 24 and 72 hours after being requested.

Routine supplies. These supplies are requested and delivered through normal supply procedures. Routine supply generally begins once a CSS unit is attached to the airborne operation. After routine supply begins, the airborne unit generally does not request follow-up supplies, except in emergencies. The DISCOM commander decides when routine supply deliveries should begin. He bases his decision on the tactical situation and the supply status of the division.

LOW-INTENSITY CONFLICT

LIC is a political-military confrontation between contending states or groups. It is less than conventional war and more than the routine, peaceful competition among states. It frequently involves protracted struggles of competing principles and ideologies. LIC ranges from subversion to the use of armed force. It is waged by a combination of political, economic, informational, and military instruments. LICs are often localized, generally in the Third World, but contain regional and global security implications.

Operational Concept

LIC does not describe a specific operation. Operations in a LIC environment are divided into four general categories:

- Support for insurgency and counterinsurgency.
- Combating terrorism.
- Peacekeeping operations.
- Peacetime contingency operations.

Supply Support

As a rule, there are not enough logistics and health services in a LIC. CSS elements may precede combat or CS units into the area of operation or may be the only military force deployed. CSS elements may provide support for US government or allied civilian agencies as well as US military or allied forces. CSS elements may also provide humanitarian and civic assistance. Because CSS units must be tailored to fit the assigned mission

and situation, they must remain flexible. More details on LIC are in FMs 63-6 and 100-20.

RETROGRADE OPERATIONS

A retrograde operation is a movement to the rear or away from the enemy. Such an operation may be forced or voluntary.

Operational Concept

Retrograde operations gain time, preserve forces, avoid combat under undesirable conditions, or draw the enemy into an unfavorable position. Commanders use them to harass, exhaust, resist, delay, and damage an enemy. Retrograde operations are also used in operational maneuvers to reposition forces, to shorten lines of communications, or to permit the withdrawal of another force for use elsewhere. All retrograde operations are difficult, and delays and withdrawals are inherently risky. To succeed, they must be well organized and well executed. A disorganized retrograde operation in the presence of a stronger enemy invites disaster.

Supply Support

Supply efforts during a retrograde operation must be concentrated on the most critical supplies: Class III, V, and IX. The key to providing responsive supply support during a retrograde operation is to project force supply requirements throughout the operation and to distribute these supplies according to the projections. When projections are made, provisions are made to move forward only essential supplies. All other supplies are moved rearward to the new support areas. To avoid destroying or evacuating supplies unnecessarily in any retrograde action, commanders must control the flow of supplies into forward areas. When commanders contemplate a delay, withdrawal, or retirement, they should plan for early removal of excess supplies and early displacement of logistics facilities. By positioning supplies along routes of withdrawal, CSS commanders can simplify support and can reduce the enemy's ability to interfere with logistical operations. More details on supply support are in FM 63-6.

DEEP OPERATIONS

Deep operations are operations directed against enemy forces not in close contact. They are designed to influence the conditions in which future close operations will be conducted. At the operational level, deep operations include efforts to isolate current battles and to influence where, when, and against whom future battles will be fought. At the tactical level, deep operations are designed to shape the battlefield to assure advantage in subsequent engagements.

Operational Concept

Because of the relative scarcity of resources with which to perform deep operations, they must be directed against those enemy capabilities which most directly threaten the success of projected friendly operations. They must be attacked decisively, with enough power to assure the desired impact. Deep operations include--

- Deception.
- Deep surveillance and target acquisition.
- Interdiction (by ground or air fires, ground or aerial maneuvers, special operating forces, or any combination of these).
- Command, control, and communications countermeasures.
- Command and control.

Supply Support

There are two ways to sustain deep operations. The force can carry with it all the resources needed throughout the mission, or it can be sustained over a LOC. Sustaining deep operations forces depends on the situation. You must consider depth and duration of the operation, the size and organization of the force, the enemy situation, and the weather and terrain. Sustainment over surface LOC has the advantage of the capability to carry large tonnages of supplies and equipment to specific destinations. It is less subject to weather than ALOC. A disadvantage is that LOC extend far beyond the FLOT into territory that is subject to enemy influence and control. Sustainment over ALOC has the advantage of being fast and responsive.

It has the same disadvantage as sustainment over surface LOC. The LOC must be either temporarily or continuously secured. This requires temporary or continuing air superiority or, at least, parity. These conditions require close interservice cooperation, because much of the airlift capability belongs to the Air Force. More details on supply support in deep operations are in FM 63-2.

HEAVY-LIGHT AND LIGHT-HEAVY OPERATIONS

There are many who will argue that light forces do not have a role on a mid- or high-intensity battlefield against a mobile enemy. History has demonstrated that heavy-light combined arms forces can engage and decisively defeat such a force when employed properly.

Operational Concept

The key to effective employment of heavy and light forces as a combined arms team is to maximize the capabilities of both parts of the force and use the advantages offered by each to offset the vulnerabilities of the other within the framework of METT-T. Light forces are particularly effective when used as part of the combined arms team. Also, light forces are effective in economy of force operations and operations with the intent of denying terrain to an enemy force. Light forces,

with proper augmentation based on METT-T, allow the maneuver commander freedom to employ armored and mechanized forces elsewhere on the battlefield. Light forces can be employed by heavy forces to conduct raids and ambushes, operations in restricted urban terrain, and rear operations.

Supply Support

Heavy forces use a combination of supply point or unit distribution systems to sustain the force in combat. Light forces are not structured to use the same system as a heavy force. Heavy-light operations require more logistical planning and coordination for both the heavy and light portions of the force than independent operations. Logistical planning and coordination for a light force is done at the brigade level. The light battalion, unlike a heavy battalion, does not have the organizational structure or capability to plan for its logistical requirements. Requiring a light infantry battalion or company to conduct its own logistical planning and support diverts its attentions and resources from its primary combat mission. A heavy brigade that has a light force must be prepared to plan and provide logistical support for the unit. This includes all classes of support and supply from casualty evacuation to food, water, and maintenance. Logistical support for a heavy-light force must be planned for and pushed to the force. FMs 63-2, 63-20, and 63-21 have details on support of heavy-light mixes.

Section IV

SUPPLY SUPPORT OF OPERATIONS IN DIFFERENT ENVIRONMENTS

NUCLEAR, BIOLOGICAL, AND CHEMICAL OPERATIONS

Threat forces have specialized NBC troops and units. They also train all of their combat and CS soldiers in NBC warfare. US forces must be prepared to fight in an NBC environment. Combat units cannot fight for long without support. The units that provide the support are prime targets for

NBC attacks. FMs 3-3, 3-4, 3-5, and 3-100 have details on NBC individual and collective protective measures, contamination avoidance, and decontamination techniques. NBC warfare will affect equipment supply routes, supply requirements, and supply trains.

Effect on Equipment

The electromagnetic pulse from a nuclear detonation can damage ADP and communications equipment that processes supply requirements. Tape disks can be wiped out. Cover critical supplies and equipment with tarpaulins, shelter halves, or ponchos to protect them from contamination. Monitor items exposed to contamination before use. Perform partial decontamination of unit equipment as far forward as possible. Only mission-essential surfaces need to be decontaminated using on-board decontamination apparatus. Complete decontamination requires the aid of battalion decontamination teams or units authorized special decontamination equipment. Perform complete decontamination only when absolutely necessary. CSS units may need to get replacement equipment if their vehicles and MHE were damaged or destroyed during the conflict. Recovery and salvage operations may be hampered by contamination of damaged equipment. The using unit decontaminates damaged unit equipment partially prior to evacuation.

Effect on Supply Requirements

A nuclear blast can crush supplies. Thermal radiation can cause fires at supply points. NBC defense companies and forward CSS units must stay highly mobile so that they can support units in contaminated areas on short notice. To ensure mobility, they carry a limited amount of protective items, replacement clothing, bathing supplies, and decontaminating material. They also maintain a limited ASL. Because of this, supporting units may need to stock greater quantities of protective overgarments than authorized in CTAs. As the NBC threat increases, units often widen the distance between supply points and supported units. Increased distances decrease the chances of more than one unit being destroyed or contaminated at the same time. The need for increased distances places added pressure on CSS units in providing supply support. Once an attack occurs, decontamination companies and the units they support also require increased deliveries of chemical antidotes and protective and replacement clothing and

equipment. FMs 63-1, 63-2, and 63-3 discuss CSS operations and logistics support in separate brigades, divisions, and corps.

Class II. Commanders establish the level of MOPP gear that must be worn. Contaminated protective clothing must be burned, buried, or destroyed. As the threat of an NBC attack increases, units also need extra quantities of tarpaulins, plastic sheets, and other materials to use as protective coverings for vehicles and equipment. Heat from a nuclear blast can melt and deteriorate plastic and rubber items. CSS units will be called on to provide large quantities of protective and replacement clothing and equipment as well as decontamination materials and equipment. Class II items needed for decontamination operations are listed in tables in FM 3-21. Contaminated items of individual equipment that cannot be decontaminated by the soldier using the individual decontamination kit are decontaminated by battalion decontamination teams. Contaminated uniforms and other clothing items must be containerized or packaged to prevent the spread of contamination.

Class III packaged. Class III packaged supplies include NBC decontaminates. Other than for such items, Class III packaged consumption does not increase greatly during NBC operations. Heat from a nuclear blast can cause Class III packaged combustibles to ignite and lubricants and metal containers to melt. Flammable items should be kept separate from other supplies and equipment. Smoke screens generated by vaporizing fog oil in mechanical smoke generators and smoke pots may reduce the heat and blinding effects of nuclear blasts.

Class IV. Since CSS units are scattered widely during NBC operations, there is a greater possibility of theft, sabotage, and enemy attack. The need for tighter security causes increased requests for barbed wire, barrier materials, and other fortification supplies. Units also need more sandbags and building materials to construct emergency shelters and underground storage areas. After an NBC attack, CSS units supporting decontamination platoons need

additional construction materials to build sumps and decontamination sites.

Class VI. Decontamination units need large quantities of bathing, shaving, and sanitation supplies. As a rule, these types of supplies are part of Class I ration supplement sundries packs and are distributed with subsistence items. Ration supplement sundries packs are normally low-priority items. Dry shaving powder, scissors, and disinfectant may be added to the list of necessary Class VI items. During NBC operations, these items could become mission essential because they help ensure proper fit of MOPP gear. To maintain troop morale during sustained war, Class VI supplies are sold by sales teams or AAFES exchanges set up in the COMMZ or corps.

Class VII. Class VII supplies include protective masks and NBC apparatus. Since weapons systems and other Class VII equipment may be damaged or destroyed during a conflict, consumption of Class VII supplies will increase accordingly. Replacement items come from war reserves and operating stocks. They are issued first to units that can reenter the battle the quickest.

Effect on Supply Routes

Main supply routes may be blocked by fallen trees, rubble, and debris caused by nuclear blasts. Earth-moving equipment may have to be used to clear routes. Alternate supply routes and sources are needed. However, alternate supply routes can result in increased turnaround and increased need for cargo vehicles. Other units may be using these alternate routes to relocate to uncontaminated areas. If alternate routes are not passable, some of the MSR's may have to be cleared or decontaminated. This delay increases the OST for all supplies and equipment. Supplies may have to be airlifted to forward units. Resupplying by air has the advantage of flying over contaminated areas.

Effect on Supply Trains

During NBC operations, CSS units give support first to combat units in forward areas. Next, they support CS and other CSS units in forward areas.

CSS units operating in rear areas have the lowest priority. MMCs divert supplies from their original destinations to forward CSS units. Only mission-essential supplies and equipment are stocked in the forward CSS units. Resupply to these forward units is generally done at night using unit pile or truck-to-truck distribution so that the supplies can be issued as far forward as possible.

SMOKE OPERATIONS

Our forces must be prepared to use smoke and to fight in a smoke environment against an enemy who may be better trained and better equipped for such operations. Smoke operations are covered in FM 3-50. Chemical smoke generator companies generate smoke by vaporizing packaged Class III fog oil.

Operational Concept

Smoke screens support not only combat operations but CSS operations as well. Smoke screens can help conceal MSR's and mark supply points for air delivery of supplies. By screening our logistics support operations and positions, smoke operations increase our battlefield effectiveness.

Supply Support

QM general supply companies, GS; S&S companies, DS; and main supply companies supply chemical smoke generator companies with the fog oil needed to produce smoke.

NIGHT OPERATIONS

Often the tactical situation is such that supplies must be delivered at night. Since the use of MHE is reduced by darkness, supplies should be prepared and loaded on trucks during the day for night delivery to forward supply points. The supply point external SOP should require supported units to send extra personnel to serve as walking guides and to help load supplies onto the trucks by hand. Blackout procedures in the internal SOP may require personnel to take the following actions:

- Use flashlights that have lens filters.
- Black out doors and windows of storage buildings.

- Block light from large tents with salvage tentage.
- Use ponchos as blackout flaps on other tents.
- Use blackout lights on vehicles and fork-lift trucks.

There are several factors to consider when your unit moves at night. They include the rate of march, vehicle density, and light discipline. Instruct your officers and NCOs on safety precautions to be followed in a night move. See FM 55-30 for more details on night convoys, including advantages and disadvantages.

URBAN OPERATIONS

US forces must be prepared to fight in areas where buildings and man-made obstacles block LOC. When soldiers fight in urban areas, buildings and terrain limit the mobility and capabilities of weapons systems. Unlike jungles or deserts, urban environments have no recurring physical feature. Units must be prepared to fight in small, mountain, farm villages and in densely populated cities. Combat operations are also hampered by civilians remaining in fighting zones. Units may need to provide food, shelter, and protection for internees or refugees. This may require supplies and manpower normally used to support combat activities. Also, security must be tightened when civilians are near, since sabotage, theft, and intelligence leaks increase. Buildings, low visibility, civilians, and close combat make it difficult to apply basic tactical guidelines. FMs 90-10 and 90-10-1 describe how to plan for and conduct operations in urban areas.

Effect on Equipment

Crowded and built-up areas limit the amount of movement and the use of combat equipment. Units should rely more on hand-carried or easily transported items. Limit recovery operations to moving disabled equipment to guarded areas along supply routes. Often vehicles and equipment cannot be evacuated because of rubble. Instead, units will have to rely on increased cannibalization. Units

may be able to get replacement items and parts from local civilian manufacturers.

Effect on Supply Requirements

Urban areas may have warehouses, sheds, and buildings to use for storing and securing supplies. Units should use existing LOC and storage facilities as much as possible. This cuts down on the OST and reduces manpower and resources that would have been used to construct facilities.

Class II. Increase Class II stocks during urban operations to allow for those items that were damaged, destroyed, or lost.

Class III packaged. Using engineer and generator-powered equipment to clear rubble increases the need for packaged POL, especially diesel fuel. Units should stock enough Class III packaged supplies to cover supplies damaged or destroyed by fire or combat and to meet requirements for smoke screens.

Class IV. Close combat and the need for increased security operations increase the need for Class IV materials. Units need increased amounts of barrier materials, barbed wire, sandbags, and construction supplies to build shelters and to fortify and secure buildings and storage areas.

Class VI. There is no marked increase in sanitation and health items generated by operations in urban areas. Generally, the amount and type of personal health items contained in Class I ration supplement sundries packs meet the health and welfare needs of most units. If additional or different personal health items are needed, contact a medical supply support unit. In sustained war, Class VI items might be sold by sales teams or AAFES exchanges to support troop morale.

Class VII. Limited space and mobility in most urban areas limit requirements for Class VII items. However, units should increase their stocks of hand-held or portable weapons. In most cases, major equipment cannot be replaced or evacuated to rear areas for repair. If parts are not available to repair Class VII items, cannibalize severely damaged US equipment or captured enemy items.

Class X. Requirements for Class X items may double or triple during an urban conflict if units are responsible for providing clothing, food, shelter, and protection for civilians remaining in the battle area. Because of this, commanders may be faced with the problems of where and how to get these items, where to store them, and how to distribute them.

Effect on Supply Routes

As a rule, urban areas have railroads, ports, highways, and pipelines already set up. Use them to help deliver and distribute supplies and equipment. Sometimes supply routes may be jammed by civilian refugees or blocked by rubble. When this happens, you may have to set aside and secure supply routes for military use only. Use air support to help locate new routes. Engineer units can help clear them. In emergencies, supplies can be airlifted. However, an airlift or airdrop should be reserved for high-priority or mission-essential supplies that will help sustain combat.

DESERT OPERATIONS

As a result of their natural resources and strategic locations, desert areas are most important. Limited concealment and cover in a desert environment make logistics facilities easy targets. FM 90-3 has details on desert operations. It describes how to prepare for desert operations and how CSS units function in desert environments.

Effect on Equipment

The desert puts an extra strain on equipment. Engines have a tendency to overheat. Plastics, lubricants, and rubber deteriorate. Dust and sand add to these problems. Filters require frequent replacement. Air and fluids expand and contract more rapidly due to the extreme temperature changes. Desert winds can be destructive to large pieces of equipment. The harsh environment requires that equipment be carefully maintained.

Effect on Supply Requirements

Supply is vital in the desert, where water is scarce and mobility limited. Long distances between units slow resupply and make LOC vulnerable.

Units in the desert should keep stocks at higher levels to cope with increased work loads. However, quantities should not be increased to the point that mobility is affected. Units need to make arrangements for unexpected requirements and mission-essential equipment to be moved by air to forward sites.

Class II. Class II consumption increases in the desert. Clothing exchange may not be possible in the early stages of a desert operation. In forward areas, it might not be possible at all. Increased clothing supplies are needed due to limited CEB points. A greater variety of clothing is needed to cope with extreme temperature changes. Clothing requirements will range from goggles and tropical wear to sleeping bags and heavy sweaters. In harsh rocky terrain, there will be a high demand for footwear. There is also an increased need for neck scarves and canteens. Extra tents and tarpaulins are needed to protect equipment from sand. A need for items such as tools increases because they tend to get lost more easily in the sand.

Class III packaged. The desert heat, dust, and sand increase the need for lubricants, oils, and antifreeze. High winds, dust storms, and air currents rising from hot sands make it difficult to maintain smoke screens generated from fog oil. However, it is possible to use fog oil to screen artillery positions and reduce muzzle flash in the early morning and late evening. Make sure motor oils with proper specifications are on hand for a hot desert environment.

Class IV. Requirements for Class IV items, such as sandbags and lumber, are increased to build fighting positions in desert operations.

Class VI. There is a high demand for Class VI supplies, especially for liquids and skin and eye ointments. Soap, toiletries, and disposable towelettes will be needed for bathing when the tactical situation and water scarcity prevent bath service. If transportation is limited, Class VI items are given low priority. Class I ration supplement sundries packs are needed in a desert environment. Medical units should receive priority for sundries packs.

issue when there is limited transportation space. In sustained war, Class VI items are sold by sales teams or by AAFES exchanges.

Class VII. The intensity of battle regulates the demand for Class VII supplies in a desert environment. Refrigeration equipment will be needed to move remains to an area of interment.

Effect on Supply Routes

MSRs in the desert are possible targets for ambush during night operations. They are also subject to being mined. The following concealment tactics can lessen the threat to supply routes.

- Vehicles should not form a pattern when stationary or moving.
- Vehicles should follow existing tracks so that the enemy cannot tell how many vehicles have passed.
- All vehicles of a given type should look alike. This will allow water and fuel vehicles to blend in. Also, canopies will ensure vehicle disguise and help protect them from the sun's heat.
- Exhaust systems should be screened to reduce the chance of heat detection.
- Noise should be muffled. Doors can be removed to prevent them from being slammed.

Effect on Supply Points

Supply points that are widely dispersed are vulnerable to attack by ground and air forces. Their stocks should be kept as mobile as possible in the event that rapid displacement is necessary. Stockpiling of vehicles should be kept to a minimum. A supply point in the desert should be supported by additional transportation units. This enables greater mobility. When supported units move, it may be necessary to divide supply point operations. Some personnel and equipment may be sent to establish a new position. The rest can carry on operations at the original location until units move out. Because supply points are vulnerable to attack, emphasize selecting positions that offer concealment rather than tactical efficiency. This is especially true where air defense cover is limited. Camouflage nets, pattern painting, and mud

covering on reflective surfaces help to ensure survival. To help conceal desert supply points--

- Place stocks irregularly to prevent a definite pattern from being formed and spotted from the air.
- Follow the local ground pattern. The shape of the area should not be square or rectangular.
- Pile supplies as low as possible, and dig in if possible.
- Cover stocks with sand, burlap, netting, or anything that blends with the terrain.
- Mix contents of each supply point. This prevents a shortage of one item occurring from destruction of stocks.
- Select a location where vehicles can use existing trails.

COUNTERGUERRILLA OPERATIONS

Because CSS units stock large amounts of food, ammunition, fuel, and other mission-essential supplies, they are prime targets for guerrilla attacks. Generally, CSS units are isolated and do not have combat troops assigned for protection and security. Therefore, CSS troops must perform security and defense activities in addition to their support missions. Jungle and mountain terrains make it easy for guerrilla forces to attack.

Effect on Supply Requirements

To lessen the effects of guerrilla attacks, CSS units are scattered to help prevent mass destruction. They also change locations frequently to maintain security. Supplies may need to be transported over roads that are not secure. Pack animals or personnel may be used to transport supplies. Forward CSS units should keep only a minimum of essential supplies on hand. This will give them greater mobility. It also reduces the number of personnel needed to maintain and protect the stocks. Some supplies can be airlifted to CSS units. However, airlift should be used only in emergency situations.

Class II. As sabotage and security operations increase, units need extra amounts of some Class II items. Also, Class II items are highly preferable,

and they will need to be replaced if destroyed. Use secure radios to communicate so that the guerrillas cannot detect you.

Class III packaged. Class III packaged consumption does not increase greatly during counter guerrilla operations. CSS units should keep enough stocks of Class III packaged on hand to replace losses caused by fires or damaged or destroyed containers.

Class IV. The need for barbed wire, barrier materials, and sandbags matches the need for tighter security. Construction materials may be needed to help camouflage supplies and equipment or to build decoy items. Engineer support used to build and repair bridges, sheds, and shelters also increases the need for fortification and construction supplies.

Class VI. Since only essential health and sanitation supplies are needed during counter guerrilla operations, there is a decrease in Class VI supply requests. Generally, the only Class VI supplies issued are in the Class I ration supplement sundries packs distributed with subsistence. When the tactical situation permits, sales teams or AAFES exchanges sell Class VI items.

Class VII. One of the major aims of guerrilla activities is to damage or destroy weapons systems. This increases the need for Class VII supplies. Forward CSS units may need to rely on other noncombat unit stocks for exchange of radios, small arms, and vehicles. Essential items are issued to units that can reenter battle first. Give Class VII supplies transportation priority so that fighting can continue.

Effect on Supply Routes

Use multiple supply routes. This makes it difficult for guerrilla forces to know where and when to attack.

Effect on Supply Trains

DS units support counter guerrilla operations from brigade trains. When a division is deployed, CSS units operate in the DSA. Supply trains provide supplies and services to units in the brigade area.

JUNGLE OPERATIONS

Jungle regions are potential battlefields. Climate, terrain, and vegetation vary with location. The jungle environment may include swamps, cultivated areas, grasslands, or densely forested areas. Dense vegetation, high temperatures, and high humidity require adjustments in supply support operations. Abundant rainfall can slow surface resupply operations. Climate and vegetation can restrict movement, observation, communications, and target acquisition. The degree to which units are trained to fight and support in the jungle will determine success or failure. FM 90-5 provides guidance on fighting and surviving in the jungle.

Effect on Equipment

Leather, canvas, and rubber are subject to mold and have a tendency to wear out quickly in the jungle. High temperature and humidity may cause equipment to rot and may aid the growth of bacteria. Equipment requires daily cleaning in a jungle environment.

Effect on Supply Requirements

Use unit distribution to deliver supplies directly to forward companies. Supplies can be moved more quickly by air from field trains than over land from combat trains. Waterways can also be part of a transport supply system. However, pack animals or humans are often the only means of moving supplies in jungle operations.

Class II. The tropical environment causes Class II items to deteriorate rapidly. Use tarpaulins to protect equipment from the rain. Combat boots and socks seldom last long. Extra stocks should be stored at supply points. Clothing may require treatment with fungicides and might have to be exchanged every five or six days. Wet weather poncho liners may be needed. Screens and filters help keep insects from getting into equipment.

Class III packaged. Since there are only a limited number of vehicles forward during jungle operations, supplying Class III packaged items is not a great problem. Helicopters can supply the forward positions with 55-gallon drums of diesel fuel, motor fuel, and fog oil using cargo nets. Protective

lubricants, lacquers, and varnishes are required to help prevent rust. In jungle operations, requirements for fog oil increase when tactics call for smoke measures or smoke screen countermeasures.

Class IV. Construction materials and special barrier equipment are heavy and bulky. Using large amounts of Class IV materials creates transportation problems. Lift helicopters are a practical method of moving these items in a jungle environment.

Class VI. Lotions to protect personnel from insect bites and poisonous plants are needed in a jungle environment. Personal demand items help to build morale.

Class VII. Major end items need to be protected from a jungle environment. Vehicles need to be inspected frequently. Major end items not in use should be sent to the rear areas.

Effect on Supply Routes

In the jungle, supply vehicles are easily ambushed, mined, or booby trapped. Road-clearing and mine-clearing operations should be repeated each morning before traffic starts to move. Patrols provide security against ambush and attack. Clearing vegetation near roads will help prevent ambush. If supply vehicles are ambushed, escort vehicles, combat vehicles, and attack helicopters should assist in countering the attack.

Effect on Supply Trains

Supply trains are located in the forward areas. Since most resupply is done by air, the combat trains may be located with the field trains in the brigade trains area. Combat trains provide rations, ammunition, lubricants, medics, and a maintenance element. Field trains provide POL, vehicles, ammunition, rations, and an aid station. Airlift supply allows fewer supplies to be stockpiled in the combat trains.

AMPHIBIOUS OPERATIONS

Amphibious operations involve assaults from seacraft or aircraft against enemy shores. Using sea vessels as bases increases force mobility. Since

forces are gathered aboard ships or in aircraft, there is a less noticeable buildup of troops, supplies, and equipment. This gives commanders an edge in choosing where and when to attack. Using helicopters and amphibious vehicles to move troops and supplies from sea bases to attack points requires detailed planning and coordination. FM 20-12 describes amphibious embarkation of landing forces. FM 31-12 tells how to plan, prepare, and train for amphibious operations.

Effect on Equipment

Water damage can be a major problem. Proper waterproofing will reduce equipment breakdown and damage. Commanders should set up areas to ensure that vehicles and other equipment are returned to mission-capable condition.

Effect on Supply Requirements

Initial or assault supplies are carried in amphibious vehicles or helicopters during the assault. These supplies provide initial support for landing forces and operations. Commanders should plan on a 5- to 15-day stock of survival and mission-essential supplies. This will allow operations to continue until resupply can occur. Weather and sea conditions may hamper resupply operations. Assault supplies should be carefully selected and packed to allow rapid unloading and distribution and to make the best use of transportation and storage space. Careful packing will also serve to reduce congestion in beach support areas during the early critical stages of the assault. Only limited amounts can be sent as assault supplies. Commanders should ensure that follow-up supply quantities are increased to make up deficiencies. Resupply levels need to be high enough to lessen the need for air delivery of emergency supplies. When setting resupply levels, commanders should increase those supplies needed by CSS units as well as those needed by combat or CS activities. Assault teams submit requests for emergency supplies to the division. Emergency supplies are airlifted to the landing area or beachhead or placed on floating dumps.

Class II. The environment that amphibious forces will face upon landing determines the need for an increase or decrease in Class II supplies. In most cases, units should consider increasing clothing and individual equipment and waterproofing substances.

Class III packaged. The quantity of Class III packaged supplies which units need to stock depends on the area in which the amphibious operations take place. As a rule, large quantities of 55-gallon drums of diesel and motor fuel are needed. Protective lubricants are needed to prevent rust.

Class IV. Units need increased amounts of construction materials and barrier equipment during amphibious operations. Use these materials to secure the beachheads and build temporary storage areas and shelters. Class IV stockage depends on the mission and the number of combat units assigned to accomplish the mission.

Class VI. Issue personal demand items as soon as practical to build up morale. As a rule, these items are in Class I ration supplement sundries packs issued with subsistence. If more items are needed, units may contact medical support companies.

Class VII. Salt water can deteriorate and severely damage Class VII items. Commanders must plan for replacement items for all mission-essential equipment as well as possible airlift of essential items. Units should try to get as many replacement items and repair parts as possible from cannibalizing captured enemy equipment or nonreparable US items.

Effect on Floating Dumps

Floating dumps are supply points made up of landing craft and amphibious vehicles. Shore parties depend on floating dumps until enough items can be stocked at the beachhead or until resupply operations can begin. When landing craft are available, commanders should request them. Their speed increases mobility. Landing craft are loaded with supplies and equipment which shore parties need to carry out and sustain operations. There may be 6 to 10 floating dumps per assault landing team. Each dump

should carry a basic load of mission-essential and survival supplies and equipment. Supplies are delivered to the shore parties as they are needed.

COLD WEATHER AND MOUNTAIN OPERATIONS

Cold weather and mountain operations pose a special challenge to CSS units. Winter and mountain weather increase the time required to perform supply support. Mobility in mountain or cold weather areas is difficult. Proper equipment is vital to successful operations. FMs 9-207, 31-71, and 90-6 provide guidance on mountain and cold weather operations. They describe how CSS units can plan for and support operations in this weather.

Effect on Equipment

Cold weather, high altitudes, and rough terrain require special clothing and equipment. Army BDUs and combat boots wear out quickly in rocky terrain. Adequate stocks of clothing must be available to replace damaged and worn-out items.

Effect on Supply Requirements

It may be necessary to disperse support units in mountainous terrain. Though this reduces vulnerability, it increases local security and command and control problems. To ensure a continuous flow of supplies, CSS units must be well protected against ground and air attack. Unit distribution is often used in mountain operations. Deliver supplies as far forward as terrain and weather permit. Communication is limited. Airfields, good roads, and railroads are also limited. Their scarcity hampers supply flow. You may need pack animals, tracked vehicles, sleds, and skis to deliver supplies. Successful supply operations require flexibility and advance planning on the part of logisticians and supply class managers.

Class II. Rugged terrain increases the need for replacement of clothing, boots, and other personal items. Cold weather items such as parkas, liners, mitten inserts, sleeping bags, and goggles are also in high demand. White coverings or cold weather

camouflage nets simplify the camouflaging of troops, equipment, and supplies in snow-covered areas.

Class III packaged. Increased stocks of Class III packaged lubricants, antifreeze, and fuels are needed. Tanks operating in mountainous terrain need 30 to 50 percent more fuel and coolant. Fuel cans are frequently required to refuel vehicles in forward areas when terrain conditions restrict the use of tank and pump units. Class III packaged goods should be constantly checked for package warping and product deterioration resulting from temperature changes. Since smoke screens last longer under extreme cold conditions, less fog oil is required.

Class IV. Using local materials reduces Class IV needs and demands on the transportation system. Mountainous areas often contain trees which can be used to erect fortifications and barriers and prepare cold weather shelters.

Class VI. Lip balm and skin lotion are needed. They combat the effects of cold weather.

Class VII. Transporting large end items to forward units is difficult in cold weather and mountainous areas. Therefore, emphasize maintenance, repair, and

return to user of such items rather than the use of replacement end items.

Effect on Supply Routes

Routes to and through supply train areas are important when deciding on site selection. Establishing a number of supply routes will help reduce the amount of traffic and lessen the chance of enemy attack. Cold weather or a mountain environment often provides ideal terrain for enemy attacks and ambushes on supply route traffic. Enemy units can be dropped by air or can infiltrate from the rear to seize important road junctions. It may be necessary to establish route patrols and observation posts to secure MSRs. Observation posts along supply routes should have surveillance devices to help improve the ability to operate in bad weather and at night.

Effect on Supply Trains

Locate supply trains as far forward as possible. To increase dispersion, battalion trains are divided into combat and field trains. Combat trains may be set up in valleys or ravines on the near slope of the terrain that the unit is occupying. Keep trains small and mobile so they can be relocated quickly.