

Movement, Maneuver and Sustainment

CHAPTER I

JOINT LOGISTICS OVERVIEW

“Logistics is the bridge between the economy of the Nation and the tactical operations of its combat forces. Obviously then, the logistics system must be in harmony, both with the economic system of the Nation and with the tactical concepts and environment of the combat forces.”

Rear Admiral Henry E. Eccles, US Navy (1959)

1. Introduction

a. Sustainment is one of the six joint functions (command and control [C2], intelligence, fires, movement and maneuver, protection, and sustainment) described in Joint Publication (JP) 3-0, *Joint Operations*. Sustainment provides the joint force commanders (JFCs) freedom of action, endurance, and the ability to extend operational reach. Effective sustainment determines the depth to which the joint force can conduct decisive operations, allowing the JFC to seize, retain, and exploit the initiative. Sustainment is primarily the responsibility of the supported combatant commander (CCDR) and subordinate Service component commanders in close cooperation with the Services, combat support agencies (CSAs), and supporting commands. Sustainment is the provision of logistics and personnel services necessary to maintain and prolong operations until mission accomplishment and redeployment of the force. Joint logistics supports sustained readiness for joint forces.

b. JP 4-0, *Joint Logistics*, focuses on logistics. This publication provides logistics guidance essential to the operational capability and success of the joint force. JP 4-0, *Joint Logistics*, also provides a framework for CCDRs and subordinate JFCs to integrate capabilities from national, multinational, Services, and CSAs to provide forces properly equipped and trained, when and where required.

c. Future operations will take place in an increasingly contested global forum, in non-permissive, uncertain, and hostile environments, confronted by physical, cyberspace, and diplomatic restrictions. To meet the wide variety of global challenges, CCDRs, JFCs, and their staffs must develop a clear understanding of joint logistics to include the relationship between logistical organizations, personnel, core functions, principles, imperatives, and the operational environment. A diverse and rapidly changing operational environment with increased threats to logistics requires JFCs to deploy strong, agile, and capable military forces whose actions are synchronized with other instruments of US national power and partner nations (PNs). This publication provides guidance for joint logistics, describes core logistic functions essential to success, and offers a framework to plan, execute, assess, and coordinate joint logistics.

d. Logistics concerns the integration of strategic, operational, and tactical support efforts within the theater, while scheduling the mobilization and movement of forces and materiel to support the JFC's concept of operations (CONOPS). The relative combat power that military forces can generate against an adversary is constrained by a nation's capability to plan for, gain access to, and deliver forces and materiel to required points of application.

The core logistics functions are: supply, maintenance, deployment and distribution, health services (HS), logistic services, engineering, and operational contract support (OCS) (discussed in Chapter II, “Core Logistics Functions”). Logistics includes planning and executing the movement and support of forces as well as those aspects of military operations that deal with:

- (1) Materiel acquisition, receipt, storage, movement, distribution, maintenance, evacuation, and disposition.
- (2) Patient movement (PM), evacuation, and hospitalization.
- (3) Facilities and infrastructure acquisition, construction, maintenance, operation, and disposition.
- (4) Logistic services (food, water and ice, contingency basing and hygiene).
- (5) OCS (synchronization of contract support for operations and contract management).
- (6) Infrastructure assessment, repairs, and maintenance.
- (7) Common-user logistics (CUL) support to other US Government departments and agencies, intergovernmental organizations (IGOs), nongovernmental organizations (NGOs), and other nations.
- (8) Detention compounds (establish and sustain large-scale to support enduring detainee operations).
- (9) Host-nation support.
- (10) Disposal operations.
- (11) In-transit visibility (ITV) and asset visibility (AV).
- (12) Engineering support.

2. Joint Logistics

a. Joint logistics is the coordinated use, synchronization, and sharing of two or more Military Departments’ logistics resources to support the joint force. The joint logistics enterprise (JLEnt) projects and sustains a logistically ready joint force by leveraging Department of Defense (DOD), interagency, nongovernmental agencies, multinational, and industrial resources. The identification of established coordination frameworks, agreements, and other connections creates an efficient and effective logistic network to support the mission.

b. **JLEnt.** The JLEnt is a multitiered matrix of key global logistics providers cooperatively structured to achieve a common purpose. It may be bound by an assortment of

collaborative agreements, contracts, policy, legislation, or treaties designed to make it function in the best interest of the JFC or other supported organization. The JLEnt includes organizations and partnerships from the Services, combatant commands (CCMDs), joint task forces (JTFs), CSAs, other US Government departments and agencies, and NGOs. Commercial partners also play a vital role in virtually all aspects of the JLEnt and function on a global scale providing comprehensive, end-to-end capabilities. The JLEnt may also include multinational partners. Participants operate across the strategic, operational, and tactical levels—many are affiliated with either supported or supporting commands and operate under a variety of command relationships. Knowing the roles, responsibilities, and authorities of JLEnt partners is essential to planning, executing, controlling, and assessing logistic operations. JLEnt partners must collaborate to ensure the coordinated employment and sharing of capabilities and resources.

c. **Building Partnership Capacity (BPC).** Complicated supply lines, finite resources, the challenges of providing robust logistics in austere environments, and shared lines of communications (LOCs) require the ability to establish and foster nontraditional partnerships. BPC is important for sharing the costs and responsibilities, improving information flow, and establishing PN agreements. BPC includes coordination of resources with multinational partners, IGOs, and NGOs. BPC improves unity of effort within the entire JLEnt. BPC is an essential component of joint operations because the Services seldom have sufficient capability to support a joint force independently. BPC is an ongoing, long-term relationship development process that may not yield immediate results. The earlier the BPC efforts begin the better the chance of success for securing partner logistics support when needed. By combining capabilities, commanders can provide maximum effectiveness and flexibility to the joint force focused on common outcomes, that deliver sustained logistics support.

d. **Personnel.** Joint logisticians are military personnel, civilians, and contractors who specialize in providing joint logistics support extending from the national industrial base to the end user. Joint logisticians plan, supervise, execute, synchronize, and coordinate core joint logistic functions. They understand tactical, operational, and strategic operations and synchronize efforts to effectively meet joint force requirements. Joint logisticians reach a level of proficiency through a combination of training, education, and operational experience created by Service, joint, and multinational duty assignments. Joint logisticians are exposed to logistic operations in a complex, diverse, and globally dispersed environment. Key attributes of a joint logistician include the ability to:

- (1) Apply policy and doctrine to improve joint force readiness.
- (2) Plan logistics support and integrate the support into the CCCR's plan.
- (3) Assist commanders in defining requirements and translating the commander's intent into logistics-related tasks.
- (4) Assess the operational situation to determine if joint logistic processes are established and working.

- (5) Plan and execute joint logistics in a changing and uncertain environment.
- (6) Forecast and articulate logistic requirements, shortfalls, risks, and supportability of operation plans (OPLANs).
- (7) Coordinate Service, CSA, interagency, and multinational logistic capabilities.
- (8) Assist JFCs as they exercise authority and provide direction for the common support of forces.
- (9) Leverage commercial logistics best practices and processes.
- (10) Identify risks that must be assumed and actions required to mitigate those risks.

3. Joint Logistics Environment

a. Military leaders conduct operations in a complicated, interconnected, and global environment. Operations are distributed and conducted rapidly and simultaneously across multiple joint operations areas (JOAs), within a single theater, or across boundaries of more than one geographic combatant commander (GCC). These operations can involve a variety of military forces, other governmental organizations, and multinational forces. The joint logistics environment is the sum of conditions and circumstances that affect logistics. The joint logistics environment exists at the strategic, operational, and tactical levels (see Figure I-1). Globalization, technology advancements, anti-access/area-denial, and flexible adversaries create a complex, ever-changing operational environment. Understanding this environment is essential to planning, executing, synchronizing, and coordinating logistic operations.

b. Joint logistics takes place throughout the operational environment. Service components and CSAs provide the expertise while the JFC's staff focuses on integrating the capabilities with operations. Access to secure networks is necessary to sustain joint force readiness and is achieved through Internet-based applications. Effective networks: find and access relevant information; facilitate collaboration; distribute data to forward deployed areas; increase performance and reliability; utilize the enterprise infrastructure for evolving DOD systems are resilient; and leverage PN's capabilities.

4. Key Organizations

The JLEnt is connected by a web of relationships among global logistics providers, supporting and supported organizations and units, and other entities. The key DOD organizations in the JLEnt include the Services, CCMDs, Defense Logistics Agency (DLA), United States Transportation Command (USTRANSCOM), the Joint Staff J-3 [Operations Directorate], and the Joint Staff J-4 [Logistics Directorate] (see Figure I-2). Effective joint logistics depends on clearly defined roles, responsibilities, and relationships between the global logistics providers. Global logistics providers manage end-to-end processes that provide capabilities to the supported CCDR to fulfill requirements.

Joint Logistics Environment Operating Framework

<u>Strategic Level</u>	<u>Operational Level</u>	<u>Tactical Level</u>
Campaign Quality	Coordinate, Integrate, and Synchronize	Effectiveness
- Industrial base capacity enables sustained operations - End-to-end processes drive efficiencies across Services, agencies, and industry - Effectiveness dependent upon optimizing processes against required outcomes	- Combatant commander integrates joint requirements with national systems - Must optimize component, agency, and other partner nation capabilities to meet requirements - Most significant impact for joint logistics and the joint force	- Outcome is measured - Operational readiness enables “freedom of action” - Desired outcomes should drive optimization—from strategic to tactical

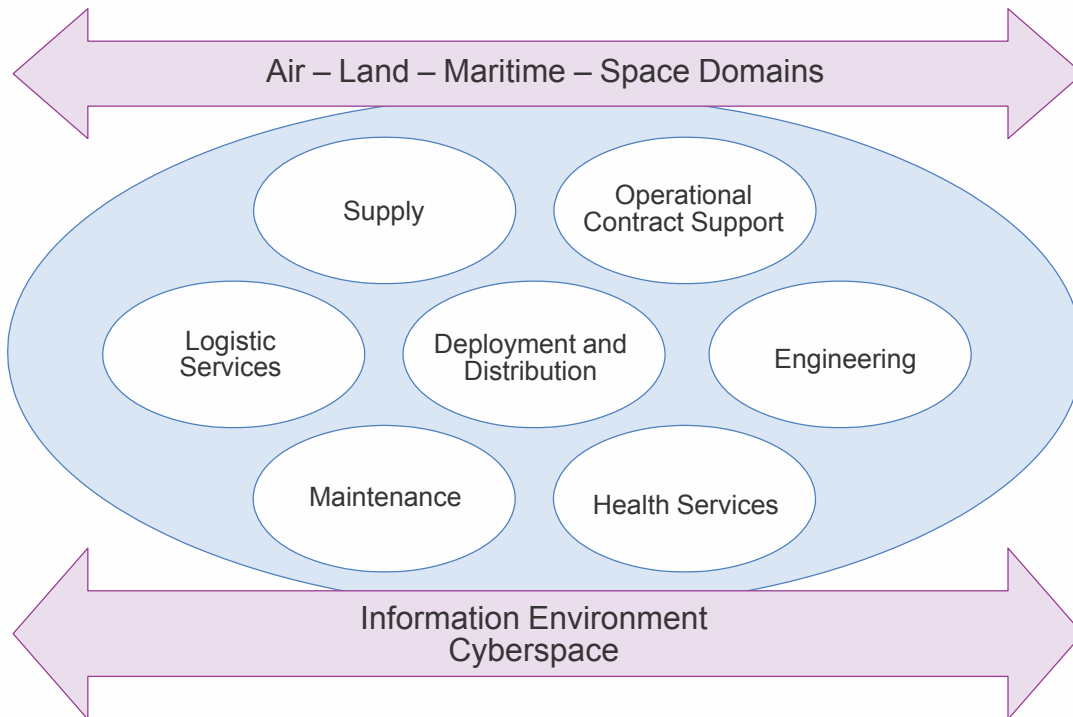


Figure I-1. Joint Logistics Environment Operating Framework

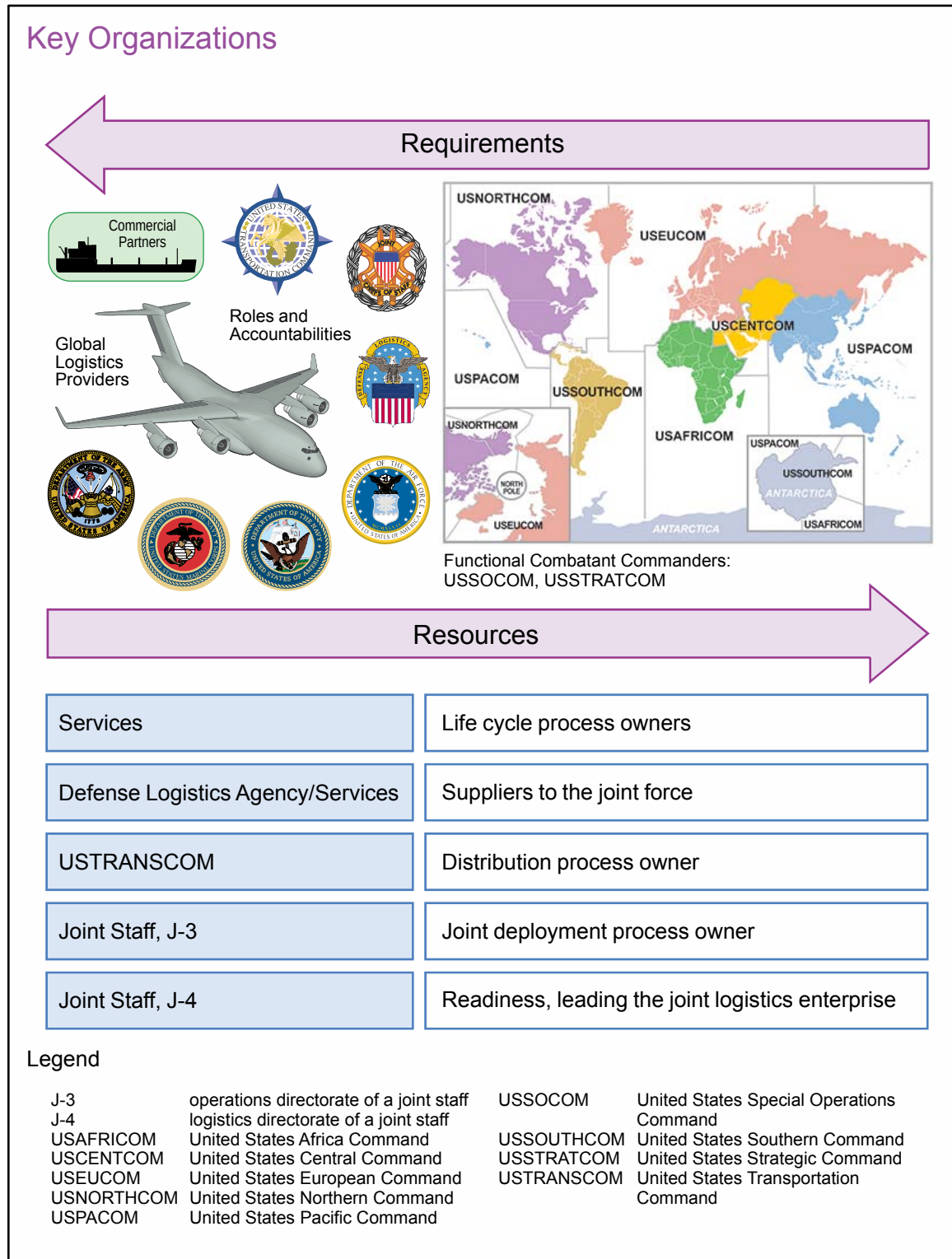


Figure I-2. Key Organizations

a. **Services.** In accordance with Title 10, United States Code (USC), the Services are responsible to prepare for employment of Service forces. They recruit, supply, organize,

train, equip, service, mobilize, demobilize, provide administrative support, and maintain ready forces. Services are the center of a collaborative network, and their logistics organizations form the foundation of the JLEnt. The Services are responsible for operational logistics support systems, platforms, and their execution to support the force. They are responsible to maintain systems' life-cycle readiness.

b. **DLA.** DLA is the DOD executive agent (EA) for subsistence, bulk fuel, construction and barrier materiel, and medical material. DLA provides spares and reparable for weapons systems. DLA also manages a global network of distribution depots that receives, stores, and issues a wide range of commodities owned by the Services, General Services Administration, and DLA. Reutilization of end items and repair parts and disposing of hazardous property and waste is another major capability DLA executes for DOD. DLA is an integral part of the collaborative logistics network.

c. **USTRANSCOM.** USTRANSCOM is responsible for providing air, land, and sea transportation, terminal management, and aerial refueling to support the global deployment, employment, sustainment, and redeployment of US forces. USTRANSCOM serves as DOD's Mobility Joint Force Provider, DOD's Single Manager for Defense Transportation, and DOD's Single Manager for Patient Movement. USTRANSCOM is also responsible for synchronizing distribution planning for global operations in coordination with other CCMDs, Services, and agencies as directed. Additionally, USTRANSCOM serves as DOD's distribution process owner (DPO) responsible for coordinating and overseeing the DOD distribution system to provide interoperability, synchronization, and alignment of DOD-wide end-to-end distribution. Finally, USTRANSCOM is the force provider for joint enabling capabilities, a DOD resource that provides a JFC with the ability or functional means to plan and execute joint operations.

d. **The Joint Staff J-3.** The Joint Staff J-3 serves as the DOD joint deployment process owner (JDPO) and is responsible for maintaining the global capability for rapid and decisive military force power projection. As the JDPO, the Joint Staff J-3 is responsible for leading the collaborative efforts of the joint planning and execution community to improve the joint deployment and redeployment processes, while maintaining the overall effectiveness of these processes so that all supported JFCs and supporting DOD components can execute military force power projection more effectively and efficiently. The Joint Staff J-3 also serves as the primary joint force provider.

e. **The Joint Staff J-4.** The Joint Staff J-4 leads the DOD efforts in the JLEnt and assesses the preparedness of the DOD global logistics force.

5. Joint Logistics Imperatives

Joint logistics focuses on three imperatives to influence mission success: unity of effort, JLEnt visibility, and rapid and precise response. These imperatives define the desired attributes of a federation of systems, processes, and organizations that effectively adapt within a constantly changing operational environment to meet the emerging needs of the supported JFC. The joint logistics imperatives support the measurement of sustained logistics. These imperatives also build trust in the logistics process and between

organizations during joint operations. These imperatives guide joint logisticians in the performance of the integrating functions needed for successful joint logistics operations.

a. **Unity of Effort.** Unity of effort is the coordination and cooperation toward common objectives, even if the participants are not necessarily part of the same command or organization; unity of effort is the product of successful unified action. For joint logisticians, unified action synchronizes and integrates logistic capabilities focused on the commander's intent. Unified action is critical to joint logistics outcomes. To achieve unity of effort, joint logisticians must develop a clear understanding of how joint and multinational logistics processes work, know the roles and responsibilities of the providers executing tasks in those processes, build agreement around common measures of performance, and ensure appropriate members of the JLEnt have visibility into the processes.

b. **JLEnt Visibility.** JLEnt visibility is access to logistic processes, resources, and requirements data to provide the information necessary to make effective decisions. JLEnt visibility is inclusive of the sub-components: AV, ITV, and the Defense Transportation System. AV is the ability to determine the location, movement, status, and identity of units, personnel, equipment, and supplies. It facilitates the capability to act upon information to improve overall performance of DOD logistics processes. ITV is the ability to track the identity, status and location of DOD units, and non-unit cargo (excluding bulk petroleum, oils, and lubricants [POL]) and passengers; patients; and personal property from origin to consignee or destination across the range of military operations. JLEnt visibility provides the means to share information and optimizes logistic capabilities to maximize outcomes, increase readiness, provide access to authoritative logistic information, and enable the user to respond quickly to the joint force's changing needs. Sharing data is essential to JLEnt visibility. Complete and timely information provides leaders and planners the ability to match available resources to operational demands. Visibility answers the commander's questions: What is it? Where is it? How and when will it arrive? To improve visibility and globally integrate operations, the JLEnt:

(1) Develops and enables common processes, methods, and language for JLEnt providers.

(2) Promotes policies that encourage transparency and the logistics community data owners to make their data accessible, interoperable, and secure.

(3) Cultivates global sourcing of resources among mission partners, across geographic boundaries, and among organizational affiliations to meet mission requirements.

(4) Pursues technology investments offering cost effective methods to advance logistics visibility in order to improve operational effectiveness.

c. **Rapid and Precise Response.** Rapid and precise response is the ability of the core logistic functions, military and commercial, to meet the constantly changing needs of the joint force. The effectiveness of joint logistics can be measured by assessing the following attributes, or key performance indicators.

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

(2) Reliability is reflected in the dependability of the global providers and the development of a resilient distribution network able to deliver required support when promised. Reliability is characterized by a high degree of predictability, or time-definite delivery of support. Time-definite delivery is the consistent delivery of requested logistics support at a time and destination specified by the requiring activity.

(3) Efficiency is related directly to the amount of resources required to achieve a specific outcome. In the tactical and operational environments, inefficiency increases the logistics footprint, force protection requirements, and risk. At the strategic level, inefficiency increases the cost and risk for the operation.

6. Logistics Integration

Commanders and staffs apply basic principles, control resources, and manage capabilities to provide sustained joint logistics. Logisticians can use the principles of logistics as a guideline to assess how effective logistics are integrated into plans and execution. To achieve full integration, commanders and their logisticians coordinate, synchronize, plan, execute, and assess logistic support to joint forces during all phases of the operation.

a. Principles of Logistics

(1) **Responsiveness.** Responsiveness is providing the right support when and where it is needed. Responsiveness is characterized by the reliability of support and the speed of response to the needs of the joint force. Clearly understood processes and well-developed decision support tools are key elements enabling responsiveness to emerging requirements. By monitoring the battle rhythm, the joint logistician can anticipate logistic issues and adjust to support operational needs.

(2) **Simplicity.** Simplicity fosters efficiency in planning and execution, and allows for more effective control over logistic operations. Clarity of tasks, standardized and interoperable procedures, and clearly defined command relationships contribute to simplicity. Simplicity is a way to reduce the “fog of war” or the friction caused by combat. Clear objectives, relevant processes, and documented procedures assist unity of effort.

(3) **Flexibility.** Flexibility is the ability to improvise and adapt logistic structures and procedures to changing situations, missions, and operational requirements. Flexibility is how well logistics responds in a dynamic environment. Where responsiveness is a commander’s view of logistic support, flexibility is a logistician’s view of being responsive. The logistician’s ability to anticipate requirements in an operational environment allows for the development of viable options able to support operational needs.

(4) **Economy.** Economy is the minimum amount of resources required to bring about or create a specific outcome. Economy is achieved when support is provided using the

fewest resources within acceptable levels of risk. At the tactical and operational levels, economy is reflected in the number of personnel, units and equipment required to deliver support. Among the key elements of the logistic principle of economy is the identification and elimination of redundancy.

(5) **Attainability.** Attainability is the assurance that the essential supplies and services available to execute operations will achieve mission success. Attainability is the point at which the CCDR or subordinate JFC judges that sufficient supplies, support, distribution capabilities, and LOC capacity exist to initiate operations at an acceptable level of risk. Some examples of minimal requirements are inventory on hand (days of supply), critical support and Service capabilities, theater distribution assets (surge capability), combat service support (CSS) sufficiency, and force reception throughput capabilities.

(6) **Sustainability.** Sustainability is the ability to maintain the necessary level and duration of logistics support to achieve military objectives. Sustainability is a function of providing for and maintaining those levels of ready forces, materiel, and consumables necessary to support military action. Sustainability is focused on the long-term objectives and requirements of the supported forces. Sustainability provides the JFC with the means to enable freedom of action and extend operational reach.

(7) **Survivability.** Survivability is the capacity of an organization to prevail in spite of adverse impacts or potential threats. To provide continuity of support, critical logistic infrastructure must be identified and plans developed for its protection. Survivability is directly affected by dispersion, design of operational logistic processes, and the allocation of forces to protect critical logistic infrastructure. Examples of critical logistic infrastructure include industrial centers, airfields, seaports, railheads, supply points, depots, LOCs, bridges, intersections, logistic centers, and military installations.

b. **Coordinating and Synchronizing.** Effective coordination of joint logistics includes choosing organizational options to execute effective joint logistics operations.

Chapter III, “Coordinating and Synchronizing Joint Logistics,” provides additional details on joint logistics control options.

c. **Planning.** Logistic planners at every level should set conditions for subordinate success. Timely, accurate, and responsive planning enables trade-offs, alternate courses of action (COAs), and therefore, freedom of action for JFCs. Joint logistics planning links the mission and commander’s intent to core logistic functions, procedures, and organizations. This establishes the JFC’s ability to meet requirements in terms of forces, capabilities, movement, projection, sustainment, duration of operations, redeployment, and retrograde.

Chapter IV, “Joint Logistics Planning,” provides additional details.

d. **Executing.** Executing joint logistics involves the employment of capabilities and resources to support joint and multinational operations.

Chapter V, “Executing Joint Logistics,” provides additional details.

e. **Assessing.** Assessing joint logistics facilitates future success through plan refinement and adaptation. The joint logistician must be able to assess and respond to requirements by monitoring dynamic situations and providing accurate feedback to subordinates and decision makers.

7. Core Logistic Functions

Core logistic functions provide a framework to facilitate integrated decision making, enable effective synchronization and allocation of resources, and optimize joint logistic processes. The challenges associated with support cut across all core logistic functions, especially when multiple JTFs or multinational partners are involved. The core logistic functions are covered in detail in Chapter II, “Core Logistics Functions.”

CHAPTER II

CORE LOGISTICS FUNCTIONS

“Gentlemen, the officer who doesn’t know his communications and supply as well as his tactics is totally useless.”

General George S. Patton, USA (1885-1945)

1. Introduction

The previous chapter provided a joint logistics framework, and this chapter describes the core logistic functions. Each function includes people, processes, and resources. The core logistic functions are: deployment and distribution, supply, maintenance, logistic services, OCS, engineering, and HS. The core logistic functions are considered during the employment of US military forces in coordinated action toward a common objective and provide global force projection and sustainment (see Figure II-1).

2. Deployment and Distribution

The global dispersion of the threats, coupled with the necessity to rapidly deploy, execute, and sustain operations worldwide, makes the deployment and distribution capability the cornerstone of joint logistics. These operational factors necessitate a shift from a supply-based system to a system that is primarily distribution-based with beginning-to-end synchronization to meet JFC requirements. Through sharing critical information, it is possible to create unity of effort among diverse distribution organizations to satisfy deployment, execution, and sustainment operations. Reducing the joint logistics footprint provides JFCs with additional options to control the time and place of engagements, increased freedom to operate, and enhanced range, endurance, and agility of employed forces.

See JP 3-35, Deployment and Redeployment Operations, and JP 4-09, Distribution Operations, for additional information.

a. **Move the Force.** The Joint Staff J-3 is the DOD focal point to improve the joint deployment process. USTRANSCOM supports the deployment process during planning and execution by providing the strategic distribution capability to move forces and materiel in support of JFC operational requirements and to redeploy personnel, equipment, and materiel. As the DPO, USTRANSCOM coordinates and synchronizes this capability to transport units, equipment, and initial sustainment from the point of origin to the point of need and provides joint deployment and distribution enterprise (JDDE) resources to augment or support operational movement requirements of the JFC.

b. **Sustain the Force.** Sustaining the force consists of delivering non-unit related cargo and personnel. USTRANSCOM is responsible for coordinating and overseeing the DOD distribution system and collaborates with other logistics providers to move materiel through the distribution pipeline, from sourcing to the end user. Additionally,

Core Logistics Functions

Core Functions	Functional Capabilities
Deployment and Distribution	• Move the force • Sustain the force
Supply	• Manage supplies and equipment • Inventory management • Manage global supplier networks • Assess global requirements, resources, capabilities, and risks
Maintenance	• Depot maintenance operations • Field maintenance operations
Logistics Services	• Food service • Water and ice service • Contingency base services • Base and installations support • Hygiene services
Operational Contract Support	• Contract support integration • Contractor management
Engineering	• General engineering • Combat engineering • Geospatial engineering
Health Services	• Health service delivery • Force health protection • Health system support

Figure II-1. Core Logistics Functions

USTRANSCOM supports retrograde actions by moving non-unit equipment and materiel from the forward locations to a reset program or another directed operational area.

c. **Operate the JDDE.** The JDDE includes equipment, procedures, doctrine, leaders, technical connectivity, information, organizations, facilities, training, and materiel necessary to conduct joint deployment and distribution operations. The JDDE is a critical part of the JLEnt and its governance is the primary responsibility of the DPO in coordination with the Joint Staff J-3 and other members of the JDDE. USTRANSCOM, as DPO, exercises control of the JDDE through coordination and synchronization with



A helicopter, embarked aboard the aircraftcarrier USS Ronald Reagan (CVN 76), delivered humanitarian supplies throughout northern Japan in support of Operation TOMODACHI.

the community of interest (COI). Specifically, USTRANSCOM controls the JDDE, conducts JDDE operations, and protects the JDDE.

3. Supply

The joint logistician must understand the complexities of supply operations, the functions and processes that define them, and the organizations and personnel responsible for executing tasks in order to meet the JFC's requirements. DLA is primarily responsible for DOD supply chain operations and manages the supply process to provide common commodities and services to joint forces. Planning for supply operations requires a collaborative environment to fully consider all major components of the JLEnt to include the return and retrograde of equipment and supplies.

a. **Supply Chain.** The DOD supply chain is a global network that provides materiel, services, and equipment to the joint force. The fundamental goal of the supply chain is to understand the requirements, maximize force readiness and optimize the allocation of joint resources. The functional capabilities that contribute to the DOD supply chain include management of supplies and equipment, inventory management, management of global supplier networks, and assessment of global requirements, resources, capabilities, and risks. The DOD's supply chain responsiveness and reliability affects the readiness and capabilities of US military forces and is critical to the overall success of joint operations.

b. **Supply Chain Management.** Supply chain management involves identification and coordination of requirements, planning and synchronizing joint supply activities throughout DOD, and managing key global suppliers to support CDR requirements. Critical elements of supply chain management include understanding and prioritizing requirements; visibility of forces as they maneuver, identifying mission-essential weapon systems and equipment; visibility of materiel moving through the distribution pipeline; ability to accurately forecast demands for sustainment; and prioritization of supply tasks in the area of responsibility (AOR). Operational planners can work with logistics planners to optimize supply chain operations and identify requirements to providers. Planners identify mission priorities, assess risks, and plan for the protection of the supply chain in the operational theater. Additional responsibilities include planning for disposition of hazardous materials, planning to retrograde material and equipment, and establishing JLEnt visibility of materiel requirements.

c. **Supply Chain Areas.** Joint logisticians must integrate all three areas of the DOD supply chain: managing supplies and equipment, managing inventory, and managing global supplier networks to provide responsive supply operations.

(1) **Manage Supplies and Equipment.** Joint logisticians integrate supply operations and work to increase supplier network performance to meet joint force demands. Logisticians should develop a seamless interface between supply operations from acquisition to delivery. Figure II-2 lists the classes and subclasses of supply managed by joint logisticians and their CUL suitability.

(2) **Inventory Management.** Inventory management is the process of managing, cataloging, determining requirements, procuring, distributing, overhauling, and disposing of materiel. Logisticians influence and employ inventory management to allow for the optimal balance of materiel in the supply chain to meet the issue and reclamation requirements of the end user. Managing inventory throughout the supply chain requires collaboration with supply and maintenance activities and distribution providers to enable the greatest effect at best value. Materiel inventory management capitalizes on accurate, real-time, and widely visible information and performance trends to inform decisions about attributes of the materiel inventory throughout the supply chain.

See Department of Defense Instruction (DODI) 3110.06, War Reserve Materiel (WRM) Policy, for additional information.

Classes, Subclasses of Supply, and Common-User Logistics Suitability

Class	Symbols	Subclass	Common-User Logistics (CUL) Capability
I. Subsistence: Food		A - Nonperishable dehydrated subsistence that requires organized dining facilities C - Combat rations includes meals, ready to eat (MREs) that require no organized dining facility; used in combat and in-flight environments. Includes gratuitous health and welfare items R - Refrigerated subsistence S - Non-refrigerated subsistence (less other subclasses) W- Water	Fully suited to CUL
II. General Support Items: Clothing, individual equipment, tentage, organizational tool sets and tool kits, hand tools, material, administrative, and housekeeping supplies		A - Air B - Ground support material E - General supplies F - Clothing and textiles G - Electronics M - Weapons T - Industrial supplies (e.g., bearings, block and tackle, cable, chain, wire, rope, screws, bolts, studs, steel rods, plates, and bars)	Limited CUL suitability
III. Petroleum, Oils, Lubricants (POL): Petroleum (including packaged items), fuels, lubricants, hydraulic and insulating oils, preservatives, liquids and compressed gasses, coolants, deicing, and antifreeze compounds, plus components and additives of such products, including coal		A - Air W- Ground (surface) P - Packaged POL	Excellent CUL candidate (with some limitations)
IV. Construction/Barrier: Materials that support fortification, obstacle and barrier construction, and construction material for base development and general engineering		A - Construction B - Barrier materials	Fully suited for CUL
V. Ammunition: Ammunition of all types (including chemical, radiological, and special weapons), bombs, explosives, mines, fuses, detonators, pyrotechnics, missiles, rockets, propellants, and other associated items		A - Air W - Ground	Limited, primarily to small arms, selected larger munitions

Figure II-2. Classes, Subclasses of Supply, and Common-User Logistics Suitability

Classes, Subclasses of Supply, and Common-User Logistics Suitability (Cont'd)

Class	Symbols	Subclass	Common-User Logistics (CUL) Capability
VI. Personal Demand Items: Nonmilitary sales items		A - Personal demand items not packaged as ration supplement sundry packs (RSSP) M - Personal and official letter and packaged mail. Does not include items in other classes such as spare parts P - RSSP	Fully suited for CUL
VII. Major End-Items: A final combination of end- products ready for intended use; e.g., launchers, tanks, racks, adapters, pylons, mobile machine shops, and administrative and tracked vehicles		A - Air B - Ground support material (includes power generators, fire- fighting, and mapping equipment) D - Administrative and general purpose vehicles (commercial vehicles used in administrative motor pools) G - Electronics J - Tanks, racks, adapters, and pylons (US Air Force only) K - Tactical and special purpose vehicles (includes trucks, truck- tractors, trailers, semi-trailers, etc.) L - Missiles M - Weapons N - Special weapons X - Aircraft engines	Not suitable for CUL
VIII. Medical Material/ Medical Repair		A - Medical material (including repair parts special to medical items) B - Blood and fluids	Fully suited for CUL
IX. Repair Parts (less medical special repair parts): All repair parts and components, including kits, assemblies, material power generators sub- assemblies (repairable and nonrepairable) required for all equipment; dry batteries		A - Air B - Ground support material, power generators, and bridging, fire- fighting, and mapping equipment D - Administrative vehicles (vehicles used in radio administrative motor pools) G - Electronics K - Tactical vehicles (including trucks, truck-tractors, trailers, semi- trailers, etc.) L - Missiles M - Weapons N - Special weapons T - Industrial supplies (e.g., bearings, block and tackle, cable, chain, wire, rope, screws, bolts, studs, steel rods, plates, and bars) X - Aircraft engines	Not suitable for CUL except for common items; requires special coordination to ensure proper support
X. (code as zero '0'): Material to support military programs, not included in classes I through IX		None	Fully suited for CUL

Figure II-2. Classes, Subclasses of Supply, and Common-User Logistics Suitability (Cont'd)

(3) **Manage Global Supplier Networks.** A supply chain network is an engineered flow of information, funding or materiel from its suppliers to customers. Deployment and distribution capabilities are lynchpins in end-to-end supply chain management. Organizations provide data on the status of supplies and suppliers so logisticians can manage the JLEnt and adjust as necessary to the dynamics of operations.

See JP 3-35, Deployment and Redeployment Operations, JP 4-01, The Defense Transportation System, and JP 4-09, Distribution Operations, for additional information.

4. Maintenance

Maintenance supports system readiness for the JFC. The Services, as part of their Title 10, USC, responsibilities, execute maintenance as a core logistics function. The Services employ a maintenance strategy of depot and field level maintenance to improve the JFC's freedom of action and sustain the readiness and capabilities of assigned units. These levels of maintenance use various functional capabilities and processes to achieve their goal. Maintenance planning provides optimal availability of ready, reliable systems at best value.

a. **Depot Maintenance.** Depot level maintenance performs materiel maintenance requiring major overhaul, or a complete rebuilding of parts, assemblies, subassemblies, and end-items. Depot maintenance includes the manufacture of parts, modifications, testing, and reclamation as required, and provides a source of serviceable equipment and supports field maintenance by providing technical assistance or performing maintenance tasks beyond their responsibility. Depot maintenance is the most complex and extensive level of maintenance work and is a significant tie between the Nation's industrial base and military operations.

b. **Field Maintenance.** The purpose of field level maintenance is to return systems rapidly to users in a ready status. Field maintenance encompasses the organizational and on-system maintenance and repairs necessary for day-to-day operations as well as the intermediate, off-system repair of components and end items for weapons systems and supply chains. Field maintenance is less complex than depot level maintenance, and serves as the link between strategic capabilities and tactical requirements.

c. **Maintenance Personnel.** Depot and field maintenance personnel must possess the technical skills, tools, equipment, facilities, and an established quality assurance program to maintain equipment readiness. The following maintenance functions are performed at both depot and field locations:

(1) **Inspect.** Determines faults and verifies repairs or determines conditions by comparing characteristics to serviceability standards.

(2) **Test.** Evaluates the operational condition of end items and subsystems against established performance parameters.

(3) **Service.** Includes preventive maintenance checks and services, monitoring equipment health and conditions, and predictive maintenance to anticipate failures and diagnose faults.

(4) **Repair.** Restores items to serviceable status.

(5) **Rebuild.** Returns items to standards as close as possible to original conditions in appearance, performance, and life expectancy. This is the highest degree of materiel maintenance applied to equipment.

(6) **Calibrate.** Compares, adjusts, and validates systems of unknown accuracy to standards of known accuracy. If necessary and possible, adjustments are made to bring systems back into compliance with established performance standards.

d. **Maintenance Responsibility.** GCCs are responsible for the coordination of Service maintenance operations within their AORs. Functional CCDRs are responsible for the coordination of Service maintenance operations within their functional areas. CCDR requirements must be clear, and Service maintenance capabilities must be synchronized to provide the most effective materiel available to the joint force. Where practical, facilities for joint or cross-Service maintenance should be established, and inter-Service use of capabilities should be emphasized over single Service support. Lead Service or agency support, or in some cases multinational support options may also achieve more effective maintenance capabilities to support joint operations. These support options achieve greater synergy with systems common to two or more Services or multinational partners. Maintenance of ground systems, support equipment, communications electronics, and commercial systems can benefit from maintenance consolidation arrangements and can generate higher operational readiness, while reducing logistics footprint and cost.

e. **Equipment Reset.** Equipment deployed to a theater of operations must be periodically refurbished to meet current theater requirements. Equipment reset is a critical activity that restores a unit to a desired level of combat capability commensurate with its future mission. Equipment reset encompasses maintenance and supply activities that restore, reconstitute, and enhance the combat capability of unit and prepositioned equipment that has been destroyed, damaged, stressed, or worn out beyond economic repair due to operations. Equipment reset repairs or rebuilds the equipment to specified standards. When appropriate, it enhances existing equipment by inserting new technologies, restoring selected equipment to meet current or future operational demands, and/or procuring replacement equipment. Equipment reset is accomplished by both depot-level and field-level maintenance activities that perform major repairs, overhauls, and recapitalization (rebuilds or upgrade). Equipment reset is normally initiated with the rotation/return of equipment from an AOR. It may also be performed in theater when practical. Equipment reset of systems common to two or more Services may be performed under inter-Service arrangements when advantageous in terms of cost, logistics footprint, or operational readiness.

f. **Contractor Logistic Support (CLS).** CLS is another source of logistical support capabilities and is integral to providing service and material solutions to the warfighter for sustained operations. CLS is a method of obtaining logistics support for a product or service for a specified period of time. CLS could also include maintenance services and materiel provided under equipment warranty programs. In order to be effective, CLS must be planned and coordinated so that usage requirements are tracked, accountability is maintained, and tactical distribution requirements are met.

5. Logistic Services

Logistic services comprise the support capabilities that collectively enable the US to rapidly provide global sustainment for our military forces. Logistic services include many highly scalable and disparate capabilities. Included in this area are food service, water and ice service, contingency base services, hygiene services, and mortuary affairs (MA).

a. **Food Service.** Includes all aspects of dining facility management, subsistence procurement and storage, food preparation, food sanitation, and delivery to supported personnel.

b. **Water and Ice Service.** Includes capability to purify, test, store, and distribute bulk packaged and frozen water in a deployed environment. Water and ice for human consumption must meet potable water standards.

c. **Contingency Base Services.** Provides the assets, programs, and services necessary to support CCMD operations. This includes capabilities to operate, manage, and transition or close contingency locations for force application. Contingency locations provide shelter, billeting, utilities, common user life support management, force protection, and facility management (i.e., mayoral capability) in a deployed environment. The base operating support (BOS) functions of the personnel, equipment, services, activities, operational energy, and resources required to sustain operations at an installation are managed by a base operating support-integrator (BOS-I). A GCC may designate a Service component or JTF as the BOS-I at each contingency location. The BOS-I matrix in Appendix F, “Contingency Basing,” is an example of how the CCDR can manage the various functions of BOS between Service components or PNs within a theater of operations from one base to another and within a single contingency base.

(1) **Real Property Life Cycle Management.** Provides acquisition, support, sustainment, recapitalization, disposal, and economic adjust activities for contingency base assets.

(2) **Support Services.** Deliver selected services to meet the requirements of the contingency location’s population and mission. Support services provide security and emergency services, safety, base support vehicles and equipment, billeting services, airfield management, port services, range management, and space support services. These do not include services related to real property or personnel services.

d. **Hygiene Services.** Include both personal hygiene and textile services. Personal services provide adequate sinks, showers, and toilets to meet needs of both men and women. Textile services provide cleaning, repair, and return of clothing items and individual equipment.

e. **Mortuary Affairs (MA).** Provide care of deceased personnel for whom the Services are responsible by status and executive order beginning with the point of incident and ending at final disposition. MA include decontamination of contaminated remains.

For a more complete discussion of joint MA operations, see JP 4-06, Mortuary Affairs, and Department of Defense Directive (DODD) 1300.22, Mortuary Affairs Policy.

6. Operational Contract Support

DOD relies on contractors to perform many tasks. OCS provides the CCDR the tools and processes to manage the variety of services that may be required, such as base

operational support, transportation, and security. Within OCS are contract support integration and contractor management.

a. **Contract Support Integration.** Contract support integration is the coordination and synchronization of contracted support executed in a designated operational area in support of the joint force. Effective contract support integration by the JFC maintains visibility of contracted capabilities.

b. **Contractor Management.** Contractor management is an expansive and complex process. It is the oversight and integration of contractor personnel and associated equipment providing support to the joint force in a designated operational area.

For further guidance on OCS, refer to JP 4-10, Operational Contract Support.

7. Engineering

Joint force engineers provide comprehensive recommendations to the commander on all engineering capabilities. They provide the ability to execute and integrate combat, general, and geospatial engineering to meet national and JFC requirements to assure mobility, provide infrastructure to position, project, protect, and sustain the joint force. Additionally, they enhance visualization of the operational area. The joint force engineer employs a combination of military engineers, civilians, contractors, and multinational and host nation (HN) capabilities to meet operational requirements, as well as BPC.

a. **General Engineering.** General engineering consists of engineer capabilities and activities, other than combat engineering, that modify, maintain, or protect the physical environment. Examples include the construction, repair, and maintenance of infrastructure, Class III/V storage area requirements, LOCs, and bases; protection of natural and cultural resources; real property life cycle support; terrain modification and repair; and selected explosive hazard activities.

b. **Combat Engineering.** Combat engineering consists of those engineer capabilities and activities that support the maneuver of land combat forces and requires close support to those forces. Combat engineering consists of three types of capabilities and activities: mobility, countermobility, and survivability. Examples include combined arms breaching operations, gap crossing operations, and constructing and maintaining combat roads and trails; development of barriers, obstacles, and minefields; and construction of fighting and protective positions.

c. **Geospatial Engineering.** Geospatial engineering consists of those engineering capabilities and activities that portray and refine data pertaining to the geographic location and characteristics of natural and constructed features and boundaries in order to provide engineering services to commanders and staffs. Examples include terrain analysis, terrain visualization, digitized terrain products, nonstandard tailored map products, precision survey, geospatial data management, baseline survey data, identification of significant cultural sites and natural resources, facility support, and force beddown analysis. Synchronizing the geospatial data provides the JFC the foundation to build a common operational picture (COP) that enhances awareness and decision making.



United States Army Corps of Engineers construct a community center in Varvarin, Serbia; a Marine electrician removes wood used to form a concrete ceiling in Bangladesh; Navy Seabees place concrete pieces at the Musa Qal'eh project in Afghanistan; An Airman balances on a communications tower in Westhampton Beach, New York.

For more information on joint engineering, refer to JP 3-34, Joint Engineer Operations, and JP 3-15, Barriers, Obstacles, and Mine Warfare for Joint Operations; and for geospatial engineering, refer to JP 3-34, Joint Engineer Operations, and JP 2-03, Geospatial Intelligence in Joint Operations.

8. Health Services

The purpose of HS is to improve the health readiness of individual personnel as well as the overall force and provide HS in order to ensure mission accomplishment. The CCDR requires scalable HS capabilities that are interoperable with other health programs, capable of rapid deployment into the operational area, and integrated across the Military Health System (MHS). HS includes all services performed, provided, or arranged that promote, improve, conserve, or restore the mental and physical wellbeing of personnel. HS employs a mix of MHS and Service capabilities in order to keep the force healthy and ready, maximizing the commander's freedom of action. HS is organized into three functional areas and can be found in greater detail in JP 4-02, *Health Services*.

a. **Force Health Protection (FHP).** FHP consists of capabilities which promote, improve, or conserve the mental and physical wellbeing of Service members. These capabilities enable a healthy and fit force, prevent injury and illness, and protect the force from health hazards.

b. **Health Service Delivery (HSD)** (formerly health service support). HSD consists of capabilities which provide timely appropriate quality healthcare to injured and ill personnel in order to restore mental and physical wellbeing. HSD includes diagnosis, treatment, rehabilitation, and reintegration of injured and ill personnel as well as casualty management in the operational area.

c. **Health System Support.** Health system support sustains and continuously improves the MHS mission effectiveness through the focused development of people, technology, infrastructure, contracts, and joint organizational culture. Health system support consists of managing the total medical force, health quality and safety, health education and training, medical financial management, medical/health information management, creating and sustaining the healing environment, joint and interagency medical logistics, and medical research and development.