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FIFTH EDITION (SMFLS5)

Sustainment Warfighting Function

Sustainment Operations

Sustainment Execution

Sustainment Planning

Brigade Support

Division, Corps, & Field Army Support

Theater Support

Joint Logistics

Deployment & Redeployment

Sustainment & LOGISTICS

multifunctional

Guide to Operational & Tactical Level Sustainment

The Lightning Press

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Fifth Edition

(SMFLS5) The Sustainment & Multifunctional Logistics SMARTbook

Guide to Operational & Tactical Level Sustainment

SMFLS5:The Sustainment & Multifunctional Logistics SMARTbook, 5th Ed. (Guide to Operational & Tactical Level Sustainment) has been completely updated for 2021. At 368 pages, SMFLS5 topics and references include the sustainment warfighting function (ADP 4-0); sustainment operations (FM 4-0), sustainment execution (logistics, financial management, personnel services, & health services support); sustainment planning; brigade support (ATP 4-90, Brigade Support Bn); division, corps & field army sustainment (ATP 4-93, Sustainment Brigade); theater support (ATP 4-94, Theater Support Command); joint logistics (JP 4-0); deployment & redeployment (ATP/JP 3-35); and more than a dozen additional new/updated Army sustainment references.

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(SMFLS5) Notes to Reader

Guide to Operational & Tactical Level Sustainment

The **sustainment warfighting function** is the related tasks and systems that provide support and services to ensure freedom of action, extended operational reach, and prolong endurance. Sustainment determines the depth and duration of Army operations. Successful sustainment enables freedom of action by increasing the number of options available to the commander. Sustainment is essential for retaining and exploiting the initiative. The sustainment warfighting function consists of four elements: **logistics, financial management, personnel services and health service support**.

Sustainment is essential for conducting operations and generating combat power as the Army performs its **strategic roles**. Sustainment provides the operational commander **freedom of action, operational reach, and prolonged endurance** necessary to shape operational environments, prevent conflict, prevail in large-scale ground combat operations, and consolidate gains.

The effectiveness of the sustainment warfighting function is dependent upon actions of units and staffs at the **operational and tactical levels**. Execution is putting a plan into action by applying combat power to accomplish the mission. It focuses on actions to seize, retain, and exploit the initiative. **Sustainment** determines the depth and duration of Army operations. It is essential to retaining and exploiting the initiative and it provides the support necessary to maintain operations until mission accomplishment. Failure to provide sustainment could cause a pause or culmination of an operation resulting in the loss of the initiative.

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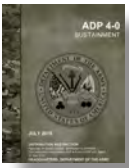
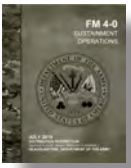


ADP 4-0



FM 4-0

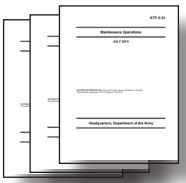

ATP 4-90


ATP 4-93


ATP 4-94


JP 4-0


ATP/JP 3-35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Chap 1: Sustainment Warfighting Function (ADP 4-0)

The sustainment warfighting function is the related tasks and systems that provide support and services to ensure freedom of action, extended operational reach, and prolong endurance. Sustainment determines the depth and duration of Army operations. Successful sustainment enables freedom of action by increasing the number of options available to the commander. Sustainment is essential for retaining and exploiting the initiative. The sustainment warfighting function consists of four elements: logistics, financial management, personnel services and health service support.

Chap 2: Sustainment Operations (FM 4-0)

FM 4-0, Sustainment Operations, provides a doctrinal approach for our armies, corps, divisions, and brigades to address the challenges of sustaining operations across all four Army strategic roles – Shape Operational Environments, Prevent Conflict, Prevail in Large-Scale Ground Combat and Consolidate Gains. It is the cornerstone of all sustainment doctrine, detailing how the Army will provide logistics, financial management, personnel services and health service support to the force during unified land operations.

Chap 3: Sustainment Execution (Logistics, Financial Management, Personnel Services, & Health Services Support)

Execution is putting a plan into action by applying combat power to accomplish the mission. It focuses on actions to seize, retain, and exploit the initiative. Sustainment determines the depth and duration of Army operations. It is essential to retaining and

exploiting the initiative and it provides the support necessary to maintain operations until mission accomplishment. Failure to provide sustainment could cause a pause or culmination of an operation resulting in the loss of the initiative. It is essential that sustainment planners and operation planners work closely to synchronize all of the warfighting functions, in particular sustainment, to allow commanders the maximum freedom of action.

Chap 4: Sustainment Planning

Planning sustainment support of an operation is vital to mission success. Sustainment commanders and their planning staffs must coordinate and synchronize every stage of the planning process with the operational staff. They must also coordinate, synchronize and integrate the sustainment plan with joint and multinational partners to ensure a continuous linkage with strategic level providers.

Chap 5: Brigade Support (ATP 4-90)

The brigade support battalion (BSB) is the most important sustainment organization in the Army. It supports the brigade combat team and the other brigade formations that constitute the majority of close combat capability in the Army. The BCT area of operations is expansive and its missions diverse. The BSB and its subordinate companies normally operate within the close area of the operational construct closer to the forward line of troops than any other battalion-sized sustainment organization. This places the BSB in operational environments that are highly lethal, rapidly changing, and extremely demanding.

Chap 6: Division, Corps & Field Army Sustainment (ATP 4-93)

The effectiveness of the sustainment warfighting function is dependent upon actions of units and staffs at the **operational and tactical levels**. The **sustainment brigade** is a multifunctional headquarters integrating and employing all assigned and attached units while planning and synchronizing sustainment operations. It is the Army's primary brigade level sustainment headquarters. Sustainment brigades are usually assigned or attached to a sustainment command.

Chap 7: Theater Support (ATP 4-94)

The theater support command (TSC) is responsible for providing sustainment support for an area of responsibility. The TSC executes its mission through human resource sustainment centers, financial management centers, and the use of modular forces, to include expeditionary sustainment commands (ESC), sustainment brigades, combat sustainment support battalions (CSSB), and other modular sustainment formations. The combination of these capabilities gives the sustainment commander the ability to organize and provide tailored support such as theater opening, theater distribution and sustainment support to forces, and the theater closing within an area of responsibility.

Chap 8: Joint Logistics (JP 4-0)

The relative combat power that military forces can generate against a threat is constrained by their capability to plan for, gain access to, and deliver forces and materiel to points of application. Joint logistics is the coordinated use, synchronization, and often sharing of two or more combatant commands (CCMDs) or Military Departments' logistics resources to support the joint force. To meet the wide variety of global challenges, combatant commanders (CCDRs), subordinate commanders, and their staffs must develop a clear understanding of joint logistics, to include the relationship between logistic organizations, personnel, core functions, principles, imperatives, and the operational environment.

Chap 9: Deployment & Redeployment (ATP/JP 3-35)

Force projection is the ability to project the military instrument of national power from the United States or another theater, in response to requirements for military operations. It is a demonstrated ability to alert, mobilize, rapidly deploy, and operate effectively anywhere in the world. The Army, as a key member of the joint team, must be ready for global force projection with an appropriate mix of combat forces together with support and sustainment units.

(SMFLS5) References

The following references were used to compile The Sustainment & Multifunctional Logistics SMARTbook (SMFLS5). All references are considered public domain, available to the general public, and designated as "approved for public release; distribution is unlimited." SMARTbook do not contain classified or sensitive material restricted from public release.

Army Doctrinal Publications (ADPs)

ADP 3-0*	Jul 2019	Operations
ADP 4-0*	Jul 2019	Sustainment
ADP 5-0*	Jul 2019	The Operations Process
ADP 6-0*	Jul 2019	Mission Command

Army Techniques Publications (ATPs)

ATP 1-19	Feb 2015	Army Music
ATP 3-34.40	Feb 2015	General Engineering
ATP 3-35*	Mar 2015	Army Deployment and Redeployment (w/Chg 2)
ATP 4-0.1	Oct 2014	Army Theater Distribution
ATP 4-02.55*	Sept 2015	Army Health System Support Planning
ATP 4-11*	Aug 2020	Army Motor Transport Operations
ATP 4-16	Apr 2013	Movement Control
ATP 4-31*	Nov 2020	Recovery & Battle Damage Assessment and Repair
ATP 4-33*	Jul 2019	Maintenance Operations (w/change 1)
ATP 4-42*	Nov 2020	Materiel Management, Supply, and Field Services Operations
ATP 4-90*	Jun 2020	Brigade Support Battalion
ATP 4-92 (FM 4-92)	Oct 2014	Contracting Support to Unified Land Operations
ATP 4-93	Apr 2016	Sustainment Brigade
ATP 4-94 (FM 4-94)	Jun 2013	Theater Sustainment Command
ATP 5-19	Apr 2014	Risk Management (w/change 1)

Field Manuals (FMs)

FM 1-0	Apr 2014	Human Resources Support
FM 1-04*	Jun 2020	Legal Support to Operations
FM 1-05*	Jan 2019	Religious Support
FM 1-06	Apr 2014	Financial Management Operations
FM 4-01	Apr 2014	Army Transportation Operations
FM 4-02*	Nov 2020	Army Health System
FM 4-30	Apr 2014	Ordnance Operations
FM 6-0	Apr 2016	Commander and Staff Organization and Operations (w/change 2)

Joint Publications (JPs)

JP 3-35*	Jan 2018	Deployment and Redeployment Operations
JP 4-0*	Feb 2019	Joint Logistics

** New/updated references in this edition.*

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Chap 1

I. The Sustainment Warfighting Function

Ref: ADP 4-0, Sustainment (Jul '19), chap. 1 and ADP 3-0, Operations (Jul '19), pp. 5-5 to 5-6.

The sustainment warfighting function is the related tasks and systems that provide support and services to ensure freedom of action, extended operational reach, and prolong endurance (ADP 3-0). Sustainment determines the depth and duration of Army operations (ADP 3-0). Successful sustainment enables freedom of action by increasing the number of options available to the commander. Sustainment is essential for retaining and exploiting the initiative. The sustainment warfighting function consists of four elements: logistics, financial management, personnel services and health service support as shown in the sustainment warfighting function logic chart.

See p. 1-3 for discussion of the sustainment warfighting function underlying logic.

Elements of Sustainment

I **Logistics** *(See pp. 3-5 to 3-42.)*

II **Financial Management** *(See pp. 3-43 to 3-44.)*

III **Personnel Services** *(See pp. 3-45 to 3-46.)*

IV **Health Service Support** *(See pp. 3-47 to 3-50.)*

I. Logistics

Logistics is planning and executing the movement and support of forces. It includes those aspects of military operations that deal with: design and development; acquisition, storage, movement, distribution, maintenance, and disposition of materiel; acquisition or construction, maintenance, operation, and disposition of facilities; and acquisition or furnishing of services. The explosive ordnance disposal tasks are discussed under the protection warfighting function. Army logistics elements are:

- Maintenance
- Transportation
- Supply
- Field Services
- Distribution
- Operational contract support
- General engineering

See pp. 3-5 to 3-42 for further discussion.

Sustainment Overview

Ref: ADP 4-0, Sustainment (Jul '19).

Introduction

ADP 4-0, Sustainment, is the Army's doctrine for sustainment in support of operations. The doctrine discussed in this manual is nested with ADP 3-0, Operations, and describes the sustainment warfighting function. The endurance of Army forces is primarily a function of their sustainment and is essential to retaining and exploiting the initiative. Sustainment provides the support necessary to maintain operations until mission accomplishment. The relationship between sustainment and operation is depicted in introductory figure-1 *(facing page)*.

Sustainment must be integrated and synchronized with operations at every level to include those of our joint and multinational partners. Sustainment depends on joint and strategic links for strategic airlift, sealift, intra¬theater airlift, and strategic and theater-level supply support. Sustainment depends on our host nation (HN) partners to provide infrastructure and logistics support necessary to ensure both maneuver forces and follow-on sustainment are delivered to right place, at the right time, and in an operable condition. This dependence on our joint and strategic links and our multinational partners means sustainment is inherently joint. Through joint interdependence, the combatant commander (CCDR) is able to maximize the effect the Army's capabilities in an operational area. The Army's robust sustainment capability assists in providing theater and port opening functions enabling joint forces to conduct strategic and operational reach. Army sustainment capabilities provide the bulk of Army support to other services in the forms of executive agent, common-user logistics, lead service, and other common sustainment resources. Army support to other services enables joint forces with freedom of action and endurance.

Fundamentals of Sustainment

For the Army, sustainment is the provision of logistics, financial management, personnel services, and health service support necessary to maintain operations until successful mission completion. Sustainment is accomplished through the coordination, integration, and synchronization of resources from the strategic level through the tactical level in conjunction with our joint and multinational partners.

Sustainment operations enable force readiness. Sustainment operations maintain Army forces by equipping it with materiel, funding it with required resources, staffing it with trained Soldiers and leaders, and by providing it with the force health protection needed.

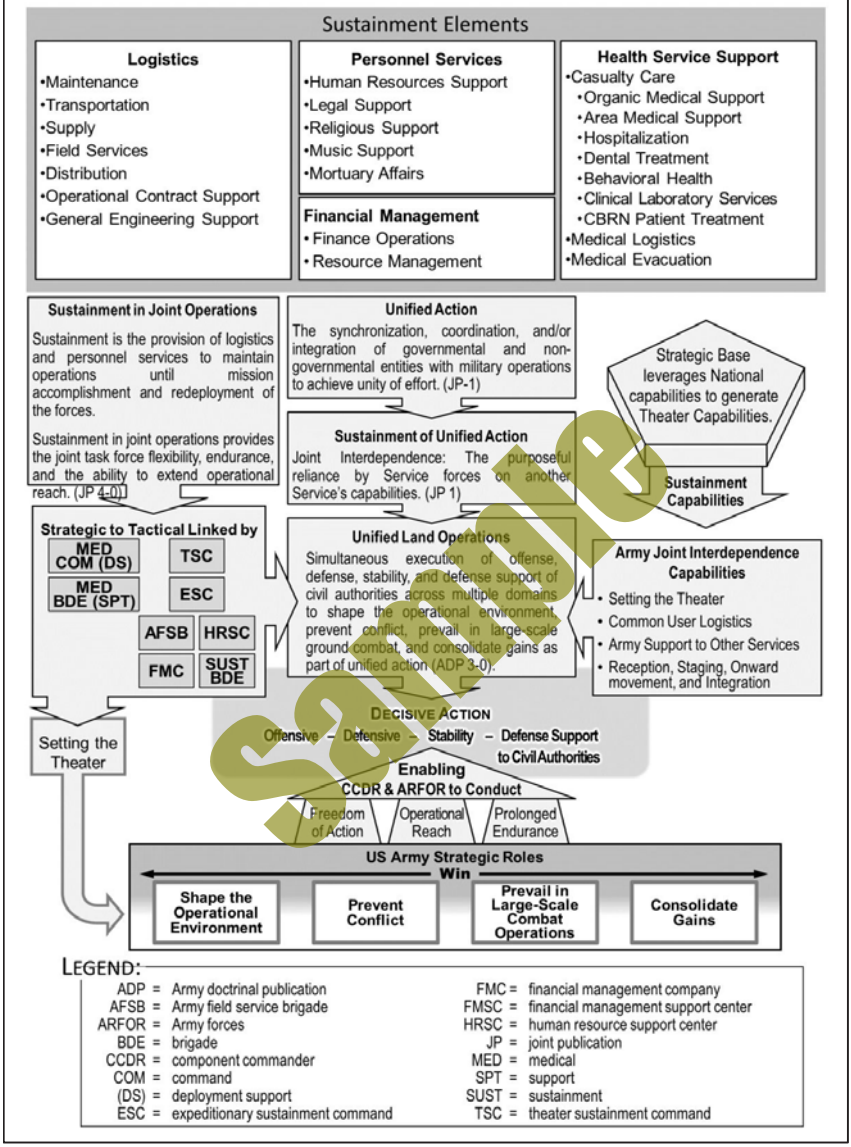
Army sustainment is based on an integrated process (people, systems, materiel, health service support, and other support) inextricably linking sustainment to operations. The concept focuses on building an operational ready Army, delivering it to the CCDR as part of the joint force, and sustaining its combat power across the depth of the operational area and with unrelenting endurance.

Principles of Sustainment

The principles of sustainment are essential to maintaining combat power, enabling strategic and operational reach, and providing Army forces with endurance. While these principles are independent, they are also interrelated and must be synchronized in time, space, and purpose. The principles of sustainment and the principles of logistics are the same.

See following pages (pp. 1-4 to 1-5) for further discussion.

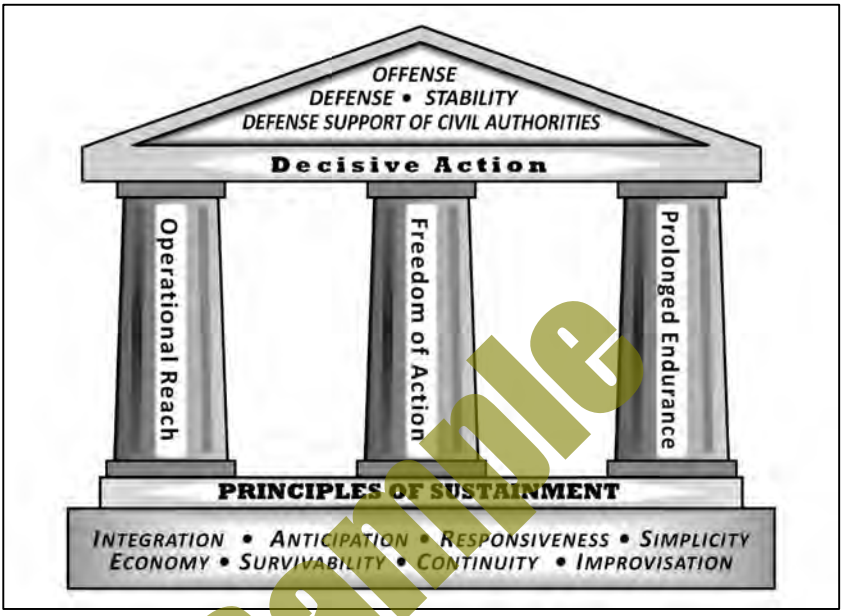
Sustainment Underlying Logic



Principles of Sustainment (& Logistics)

Ref: ADP 4-0, Sustainment (Jul '19), pp. 1-2 to 1-4.

The principles of sustainment shown below are essential to maintaining combat power, enabling strategic and operational reach, and providing Army forces with endurance. While these principles are independent, they are also interrelated and must be synchronized in time, space, and purpose. The principles of sustainment and the principles of logistics are the same.



Ref: ADP 4-0 (Jul '19), fig. 1-1. Principles of sustainment.

Integration. Integration is combining all of the sustainment elements within operations assuring unity of command and effort. It requires deliberate coordination and synchronization of sustainment with operations across all levels of war. Army forces integrate sustainment with joint and multinational operations to maximize the complementary and reinforcing effects of each Service component's and other UAPs resources. One of the primary functions of the sustainment staff is to ensure the integration of sustainment with operations plans.

Anticipation. Anticipation is the ability to foresee operational requirements and initiate necessary actions that most appropriately satisfy a response without waiting for operations orders or fragmentary orders. It is shaped by professional judgment resulting from experience, knowledge, education, intelligence, and intuition. Commanders and staffs must understand and visualize future operations and identify appropriate or required support. They must then start the process of acquiring the resources and capabilities that best support the operation. Anticipation is facilitated by automation systems that provide the common operational picture upon which judgments and decisions are based. Commanders integrate risk management into the operations process to identify threats, assess those threats, and emplace controls to mitigate the risk of gaps in support. Anticipation is also a principle of personnel services.

Responsiveness. Responsiveness is the ability to react to changing requirements and respond to meet the needs to maintain support. It is providing the right support in the

right place at the right time. It includes the ability to anticipate operational requirements. Responsiveness is facilitated by a common operational picture facilitated by the Army Readiness-Common Operating Picture, and follow-on business intelligence tools associated with Army enterprise resource planning systems. That common operational picture enables commanders to see all supported forces, anticipate requirements based on situational understanding, and provide support when and where needed. Responsiveness involves identifying, accumulating, and maintaining sufficient resources, capabilities, and information necessary to meet rapidly changing requirements. Through responsive sustainment, commanders maintain operational focus and pressure, set the tempo of friendly operations to prevent exhaustion, replace ineffective units, and extend operational reach.

Simplicity. Simplicity relates to processes and procedures to minimize the complexity of sustainment. Unnecessary complexity of processes and procedures leads to confusion. Clarity of tasks, standardized and interoperable procedures, and clearly defined command relationships contribute to simplicity. Simplicity enables economy and efficiency in the use of resources, while ensuring effective support of forces. Simplicity is also a principle of financial management.

Economy. Economy is providing sustainment resources in an efficient manner that enables the commander to employ all assets to the greatest effect possible. Economy is achieved through efficient management, discipline, prioritization, and allocation of resources. Economy is further achieved by eliminating redundancies and capitalizing on joint interdependencies. Disciplined sustainment assures greatest possible tactical endurance and constitutes an advantage to commanders. Economy may be achieved by contracting for support or using HN resources that reduce or eliminate the use of limited military resources. By efficiently and ethically managing Army resources, Army professionals are stewards who act in the best interest of the American people.

Survivability. Survivability is all aspects of protecting personnel, weapons, and supplies while simultaneously deceiving the enemy (JP 3-34). Survivability consists of a quality or capability of military forces to avoid or withstand hostile actions or environmental conditions while retaining the ability to fulfill their primary mission. This quality or capability of military forces is closely related to protection (the preservation of a military force's effectiveness) and to the protection/force protection warfighting function (the tasks or systems that preserve the force). Hostile actions and environmental conditions can disrupt the flow of sustainment and significantly degrade forces' ability to conduct and sustain operations. In mitigating risks to sustainment, commanders often must rely on the use of redundant sustainment capabilities and alternative support plans.

Continuity. Continuity is the uninterrupted provision of sustainment across all levels of war. Continuity is achieved through a system of integrated and focused networks linking sustainment to operations. Continuity is achieved through joint interdependence; linked sustainment organizations; a strategic to tactical level distribution system, and integrated information systems. Continuity assures confidence in sustainment allowing commanders freedom of action, operational reach, and endurance.

Improvisation. Improvisation is the ability to adapt sustainment operations to unexpected situations or circumstances affecting a mission. It includes creating, arranging, or fabricating resources to meet requirements. It may also involve changing or creating methods that adapt to a changing operational environment. Sustainment leaders must apply operational art to visualize complex operations and understand additional possibilities. These skills enable commanders to improvise operational and tactical actions when enemy actions or unexpected events disrupt sustainment operations. While deception is related to survivability in that deception contributes to survivability, improvisation is where logisticians can actively achieve deception of enemy forces. Improvisation is also a principle of financial management.

II. Financial Management

Financial management leverages fiscal policy and economic power across the range of military operations. Financial management encompasses finance operations and resource management.

See pp. 3-43 to 3-44 for further discussion.

III. Personnel Services

Personnel services are those sustainment functions related to Soldiers' welfare, readiness, and quality of life. Personnel services complement logistics by planning for and coordinating efforts that provide and sustain personnel. Personnel services include—

- Human resources support
- Legal support
- Religious support
- Band support

See pp. 3-45 to 3-46 for further discussion.

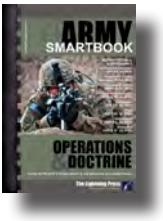
IV. Health Service Support

Army Health System (AHS) support includes both health service support and force health protection that are critical capabilities embedded within formations across all warfighting functions. The force health protection mission falls under the protection warfighting function and will not be covered in this publication (see ADP 3-37).

Health service support encompasses all support and services performed, provided, and arranged by the Army Medical Department to promote, improve, conserve, or restore the behavioral and physical well-being of Army personnel and as directed, unified action partners (UAPs). Health service support includes the following—

- Casualty care, which encompasses a number of medical functions, including:
  - Medical treatment (organic and area medical support).
  - Hospitalization.
  - Dental care (treatment aspects).
  - Behavioral health/neuropsychiatric treatment.
  - Clinical laboratory services.
  - Treatment of chemical, biological, radiological, and nuclear patients).
- Medical evacuation (including medical regulating).
- Medical logistics (including blood management).

See pp. 3-47 to 3-50 for further discussion.



Refer to AODS6-1 (w/SMARTupdate 1): The Army Operations & Doctrine SMARTbook (Guide to FM/ADP 3-0 Operations & the Elements of Combat Power) for full discussion of each of the six warfighting functions (and elements of combat power): command & control (ADP 6-0), movement and maneuver (ADPs 3-90, 3-07, 3-28, 3-05), intelligence (ADP 2-0), fires (ADP 3-19), sustainment (ADP 4-0), & protection (ADP 3-37).

II. Sustainment of Unified Action

Ref: ADP 4-0, Sustainment (Jul '19), chap. 2.

Unified action is the synchronization, coordination, and/or integration of the activities of governmental and nongovernmental entities with military operations to achieve a unity of effort (JP 1). Unified action requires fully integrating the U.S. military with the efforts of interorganizational and multinational partners to achieve strategic, operational, and tactical success. The sustainment of unified action requires a continuous link, close coordination, and collaboration with other Services, allies, HN forces, and other governmental organizations.

I. Strategic Support Area

In the U.S., sustainment originates in the strategic support area. The strategic support area consists of the defense industrial base that includes DOD, government, and private sector worldwide industrial complexes with capabilities to perform research and development, design, produce, and maintain military weapon systems, subsystems, components, or parts to meet military requirement. The strategic support area generates Army sustainment capabilities, which enable sustained operations through end-to-end processes that drive efficiencies across military Services, agencies, and industry. The continuous effects created in the strategic support area may occur anywhere long the competition continuum, which ranges from peace to war.

The strategic support area describes the area extending from the joint security area within a theater to the continental United States (CONUS) or another combatant's area of responsibility (AOR). It includes a vast array of DOD, government, and private sector agencies that participate in the sustainment enterprise. The support provided includes materiel integration and sealift support conducted by USAMC and United States Transportation Command (USTRANSCOM). Class I, III (B), IV, and VIII support is provided by the Defense Logistics Agency (DLA). United States Army Financial Management Command coordinates, synchronizes, and integrates financial management between strategic partners and the operational and tactical

Army levels. The U.S. Army Human Resources Command is the U.S. Army's manning enterprise that distributes personnel in accordance with Army priorities and readiness objectives. The strategic support area also includes the air and seaports that support the force projection, flow, and sustainment of forces into the joint security area within a theater. The joint security area is a specific surface area designated by a joint force commander to facilitate protection of joint bases and their connecting lines of communications (JP 3-10). The theater Army and its assigned TSC operate in and provide support to Army forces operating in the joint security area. The TSC integrates and synchronizes sustainment in the joint security area and across the theater Army's area of responsibility.

Army forces through joint interdependence rely upon joint capabilities, air and maritime, to deliver sustainment to a theater of operations. Through coordination and collaboration between strategic and operational partners, a continuous and uninterrupted flow of sustainment is provided to achieve national military objectives. Also through coordination, collaboration, and agreements with HN, allies and intergovernmental organizations certain sustainment efficiencies are achieved to facilitate a unity of effort.

II. Army Sustainment Responsibilities

Each Service retains responsibility for the sustainment of forces it allocates to a joint force. The Secretary of the Army exercises this responsibility through the Chief of Staff, United States Army (CSA) and the Theater Army assigned to each combatant command. The Theater Army is responsible for the preparation and administrative support of Army forces assigned or attached to the combatant command.

A. Army Title 10 Sustainment Requirements

Title 10, USC and DOD Directive 5100.1, Functions of the DOD and Its Major Components, describe the organization, roles, and responsibilities for the elements of the DOD to include the statutory requirements for each Military Department to provide support to assigned forces.

See facing page for further discussion.

B. Executive Agent (EA)

Executive Agent (EA) is a term used to indicate a delegation of authority by the Secretary of Defense or Deputy Secretary of Defense to a subordinate to act on behalf of the Secretary of Defense (JP 1). An EA may be limited to providing only administration and support or coordinating common functions; or it may be delegated authority, direction, and control over specified resources for specified purposes.

When designated as an EA, the Army is specifically tasked by the Secretary of Defense for certain responsibilities, sometimes limited by geography, sometimes for a particular operation, and sometimes for the entire DOD on a continuing basis. The list below (not all inclusive) is an example of some of the Army's sustainment EA responsibilities:

- DOD Combat Feeding Research and Engineering Program
- Management of Land-based Water Research in Support of Contingency Operations
- Law of War Program
- Defense Mortuary Affairs Program
- Military Postal Service
- Explosive Safety Management

C. Lead Service

The CCDR may choose to assign specific common-user logistics support functions, to include both planning and execution to a lead Service. A lead Service or agency for common-user logistics is a Service component or DOD agency that is responsible for execution of common-user item or service support in a specific combatant command or multinational operation as defined in the combatant or subordinate joint force commander's operation plan, operation order, and/or directives (JP 4-0). These assignments can be for single or multiple common-user logistics and may be based on phases and/or locations within the AOR. The CCDR may augment the lead Service logistics organization with capabilities from another component's logistics organizations as appropriate. The lead Service must plan, issue procedures, and administer sustainment funding for all items issued to other Services as well as a method for collecting items from other Services.

D. Directive Authority for Logistics (DAFL)

The Directive Authority for Logistics is the CCDR's authority to issue directives to subordinate commanders to ensure the effective execution of approved operation plans, optimize the use or reallocation of available resources, and prevent or eliminate redundant facilities and/or overlapping functions among the Service component

III. Sustainment of Unified Land Operations

Ref: ADP 4-0, Sustainment (Jul '19), chap. 3.

Operational Context

Any operational environment consists of many interrelated variables and sub variables, as well as the relationships among those variables and sub variables. How the many entities and conditions behave and interact with each other within an operational environment is difficult to discern and always results in differing circumstances. Different actor or audience types do not interpret a single message in the same way. Therefore, no two operational environments are the same (ADP 3-0).

Unified Land Operations

Unified land operations require the integration of U.S. military operations with that of multinational partners and our UAPs. The goal of unified land operations is to establish conditions that achieve the joint force commander's end state by applying landpower as part of unified action (ADP 3-0).

The sustainment warfighting function is nested within all four of the Army' strategic roles (shape operational environments, prevent conflict, prevail in large-scale ground combat operations, and consolidate gains). FM 4-0 describes in detail how the sustainment warfighting function supports the strategic roles during operations described in FM 3-0. The sustainment warfighting function is also essential for conducting unified land operations and providing resources for generating and maintaining combat power. Sustainment provides maneuver commanders with operational reach, freedom of action, and operational endurance needed to maintain the initiative in conducting unified land operations.

Sustainment Support of the Army Strategic Roles

Sustainment supports the Army strategic role of shaping operational environments by setting the theater and supporting military engagements. Sustainment activities during shaping operational environments include establishing logistics partnerships, enhancing interoperability, establishing or refining HNS agreements, and gaining access to potential critical infrastructure nodes. Sustainment supports the Army strategic role of preventing conflict by tailoring forces to the type of operation, geographic location, permissiveness of the environment, threat, and a host of other planning considerations determined during continued analysis of the operational environment and mission variables. In addition, refinement of plans and logistics estimates to support expected operations occur during prevent conflict. Sustainment supports the Army strategic role of prevailing in large-scale ground combat operations by providing the freedom of action, prolonged endurance, and extended operational reach required to conduct sustained defensive and offensive operations. During the Army strategic role of consolidate gains, sustainment provides support to combat operations while establishing security, restoring combat power, and preparing for continued operations to destroy remaining enemy forces.

See pp. 2-2 to 2-3 for a detailed discussion of how sustainment supports the Army strategic roles from FM 4-0.

do not drive the planning process, but must be fully integrated throughout planning to help understand, visualize, and describe solutions. Sustainment planners use the commander's intent, planning guidance, and the military decision making process to develop the sustainment concept of support.

The concept of support is derived from running estimates developed using a variety of planning tools. These running estimates project consumption rates for key classes of supply, casualty figures, maintenance requirements, and other sustainment requirements. (See ADP 5-0 for additional information.) Sustainment planners participate in all aspects of the military decision making process to ensure synchronization and unity of effort.

Planning in a sustainment headquarters requires planners to take an active role in the maneuver planning process. They assist in the development of the commander's understanding of the operational environment, identify shortfalls, articulate risks, and articulate the sustainment commander's vision. Sustainment planners must have the most current products from the organizations they support as well as planning products from their higher headquarters to ensure proper nesting and synchronization. Developing effective plans facilitates well-synchronized transitions between operational phases.

A comprehensive analysis of HN capabilities and plans incorporating these resources provides sustainment commanders with an array of options. For example, the availability of reliable contracting resources could reduce the burden on military resources and an already strained distribution system. Contracted resources could enable military resources to be focused on high priority operations that are unsuitable for civilian personnel. The use of contractors and HNS are often directly tied to the level of violence and threat in the operational environment.

I. Operational Reach

Operational reach is the distance and duration across which a unit can successfully employ military capabilities (JP 3-0). The limit of a unit's operational reach is its culminating point. Operational reach enables commanders to determine where to engage the enemy by giving them the ability to strike enemy decisive points to achieve decisive force at the appropriate time and place. Extending operational reach is critical to achieving the necessary freedom of action enabling the commander to seize and retain the initiative. Extended operational reach allows the commander to present the adversary with multiple dilemmas, confounding his decision making, and challenging their ability to act effectively.

See p. 2-5 for related discussion of operational reach from FM 4-0.

Sustainment enables operational reach. Extending operational reach is a paramount concern for commanders. Commanders and staff increase operational reach through deliberate, focused operational design, and the allocating appropriate sustainment resources. This requires strategic sustainment capabilities such as materiel, supplies, health services, and other support and global distribution systems to deploy, maintain, and conduct operations over great distances for extended periods of time. Army forces can increase the joint force's ability to extend operational reach by securing and operating bases in the AOR, the use of contracted and local procurements, and the use of aerial delivery.

A. Army Pre-Positioned Stocks (APS)

Pre-positioning of stocks in potential theaters provides the capability to rapidly supply and resupply forces until air and sea lines of communication are established. Army pre-positioned stocks are located at or near the point of planned use or at other designated locations. This reduces the initial amount of strategic lift required for power projection, to sustain the war fight until the line of communication with CONUS is established, and industrial base surge capacity is achieved (ATP 3-35.1).

Force Projection

Force projection is the ability to project the military instrument of national power from the United States or another theater, in response to requirements for military operations (JP 3-0). Force projection includes the processes of mobilization, deployment, employment, sustainment, and redeployment of forces. These processes are a continuous, overlapping, and repeating sequence of events throughout an operation. Force projection operations are inherently joint and require detailed planning and synchronization.

Sustainment of force projection operations is a complex process involving the GCC, strategic and joint partners such as USTRANSCOM, and transportation component commands like Air Mobility Command, military sealift command, SDDC, USAMC, DLA, Service Component Commands, and Army generating forces. ATP 3-35 provides greater detail on the force projection processes, but a general summarization is provided—

• **Mobilization** is the process of assembling and organizing national resources to support national objectives in time of war or other emergencies. The process by which the Armed Forces of the United States, or part of them, are brought to a state of readiness for war or other national emergency. (JP 4-05).

• **Deployment** is the movement of forces into and out of an operational area (JP 3-35). Sustainment is crucial to the deployment of forces. Joint transportation assets including air and sealift provide the movement capabilities for the Army.

• **Employment** is the strategic, operational, and tactical use of forces (JP 5-0).

• **Sustainment** provides logistics, financial management, personnel services, and health service support to maintain forces until mission completion. It gives Army forces its operational reach, freedom of action and endurance.

• **Redeployment** is the transfer of forces and materiel to the home and/or mobilization station for reintegration and/or out-processing (ATP 3-35). It requires retrograde of logistics, personnel services, and health service support and reuniting unit personnel and equipment at their home station.

See pp. 2-47 and 4-10 for related discussion of force projection, deployment operations, and RSOI.

B. Theater Opening

Theater opening is the ability to establish and operate ports of debarkation (air, sea, and rail), to establish a distribution system and sustainment bases, and to facilitate port throughput for the reception, staging, onward movement and integration of forces within a theater of operations. Preparing for theater opening operations requires unity of effort among the various commands and a seamless strategic¬to-tactical interface. It is a complex joint process involving the GCC and strategic and joint partners such as USTRANSCOM and DLA. Theater opening functions set the conditions for effective support and lay the groundwork for subsequent expansion of the theater distribution system.

See following pages (pp. 1-24 to 1-25) for further discussion.

C. Theater Closing

Theater closing is the process of redeploying Army forces and equipment from a theater, the drawdown and removal or disposition of Army non-unit equipment and materiel, and the transition of materiel and facilities back to host nation or civil authorities. Theater closing begins with the termination of joint operations.

See pp. 1-26 to 1-27 for further discussion.

Basing

Ref: ADP 4-0, Sustainment (Jul '19), pp. 3-8 to 3-9. See also AODS6 p. 1-32.

A base camp is an evolving military facility that supports military operations of a deployed unit and provides the necessary support and services for sustained operations (ATP 3-37.10). Basing directly enables and extends operational reach, and involves the provision of sustainable facilities and protected locations from which units can conduct operations. Army forces typically rely on a mix of bases and/or base camps to deploy and employ combat power to operational depth. Options for basing range from permanent basing in CONUS to permanent or contingency (non-permanent) basing OCONUS. A base camp is an evolving military facility that supports military operations of a deployed unit and provides the necessary support and services for sustained operations.

Bases or base camps may have a specific purpose (such as serving as an intermediate staging base, logistics base, or forward operating base) or they may be multifunctional. A base or base camp has a defined perimeter and established access controls, and should take advantage of natural and man-made features.

Bases or base camps may be joint or single service and will routinely support both U.S. and multinational forces, as well as interagency partners, operating anywhere along the range of military operations. Commanders often designate a single commander as the base or base camp commander that is responsible for protection, terrain management, and day-to-day operations of the base or base camp. This allows other units to focus on their primary function. Units located within the base or base camp are under the tactical control of the base or base camp commander for base security and defense.

Within large echelon support areas, controlling commanders may designate base clusters for mutual protection and mission command. Within a support area, a designated unit such as a BCT or maneuver enhancement brigade provides area security, terrain management, movement control, mobility support, clearance of fires, and required tactical combat forces. Operational area security operations focus on the protected force, base, base camp, route, or area. This allows sustainment units to focus on their primary function. Sustainment commanders and planners must constantly coordinate with supported operational staffs to synchronize sustainment operations to include all activities of the base camp life cycle and the basing strategy.

Refer to ATP 3-37.10 for more information on base camps.

Intermediate Staging Bases (ISB)

An intermediate staging base is a tailorable, temporary location used for staging forces, sustainment and/or extraction into and out of an operational area (JP 3-35). While not a requirement in all situations, the intermediate staging base may provide a secure, high-throughput facility when circumstances warrant. The commander may use an intermediate staging base as a temporary staging area en route to a joint operation, as a long-term secure forward support base, and/or secure staging areas for redeploying units, and noncombatant evacuation operations. An intermediate staging base is task organized to perform staging, support, and distribution functions as specified or implied by the CCDR and the theater Army operations order.

Forward Operating Bases (FOB)

Forward operating bases extend and maintain the operational reach by providing secure locations from which to conduct and sustain operations. They not only enable extending operations in time and space; they also contribute to the overall endurance of the force. Forward operating bases allow forward deployed forces to reduce operational risk, maintain momentum, and avoid culmination. Forward operating bases are generally located adjacent to a distribution hub. This facilitates movement into and out of the operational area while providing a secure location through which to distribute personnel, equipment, and supplies.

II. Freedom of Action

Preparation for the sustainment of operations consists of activities performed by units to improve their ability to execute an operation. Preparation includes but is not limited to plan refinement, rehearsals, information collection, coordination, inspections, and movements. For sustainment to be effective, several actions and activities are performed across the levels of war to properly prepare forces for operations.

A. Sustainment Preparation

Sustainment preparation of the operational environment is the analysis to determine infrastructure, physical environment, and resources in the operational environment that will optimize or adversely impact friendly forces means for supporting and sustaining the commander's operations plan. The sustainment preparation of the operational environment assists planning staffs to refine the sustainment estimate and concept of support. It identifies friendly resources (HNS, contractible, or accessible assets) or environmental factors (endemic diseases, climate) that impact sustainment.

See facing page for further discussion.

B. Sustainment Execution

Execution is putting a plan into action by applying combat power to accomplish the mission (ADP 5-0). It focuses on actions to seize, retain, and exploit the initiative.

Sustainment determines the depth and duration of Army operations. It is essential to retaining and exploiting the initiative and it provides the support necessary to maintain operations until mission accomplishment. Failure to provide sustainment could cause a pause or culmination of an operation resulting in the loss of the initiative. It is essential that sustainment planners and operation planners work closely to synchronize all of the warfighting functions, in particular sustainment, to allow commanders the maximum freedom of action.

Sustainment plays a key role in enabling the simultaneous offensive, defensive, and stability or defense support of civil authorities tasks that occur as part of unified land operations. For example, general engineering support provides construction support to protect key assets such as personnel, infrastructure, and bases. Horizontal and vertical construction enables assured mobility of transportation networks and survivability operations to alter or improve cover and concealment to ensure freedom of action, extend operational reach, and endurance of the force. Legal personnel supporting rule of law activities may find themselves working closely with HN judicial, law enforcement, and corrections systems personnel.

See chap. 2, Sustainment Operations, and chap. 3, Sustainment Execution.

III. Endurance

Endurance refers to the ability to employ combat power anywhere for protracted periods. Endurance stems from the ability to create, protect, and sustain a force, regardless of the distance from its base and the austerity of the environment. Endurance involves anticipating requirements and continuity of integrated networks of interdependent sustainment organizations. Prolonged endurance is enabled by an effective distribution system and the ability to track sustainment from strategic to tactical level.

Reconstitution operations are extraordinary actions that commanders plan and implement to restore attritted units' combat effectiveness commensurate with the mission requirements and available resources. Reconstitution restores combat power to the levels necessary to maintain endurance and continue operations.

Distribution is the primary means to prolong endurance. Distribution is the operational process of synchronizing all elements of the logistic system to deliver the "right things" to the "right place" at the "right time" to support the geographic combatant commander (JP 4-0).

See following page (p. 1-30) for an overview of distribution.

Sustainment Operations

Ref: FM 4-0, Sustainment Operations (Jul '19), forward and preface.

> *"Logistics sets the campaign's operational limits."*
> *– Joint Pub 1, Joint Warfare of the U.S. Armed Forces, November 1991*

Today's operational environment presents threats to the Army and joint force that are more dangerous in terms of capability and magnitude than those we faced in Iraq and Afghanistan. Major regional powers — Russia, China, Iran, and North Korea seek to gain strategic positional advantage. These nations, and other competitors, are fielding capabilities to deny U.S. freedom of action in the air, land, maritime, space, and cyberspace domains and reduce U.S. influence in critical areas of the world. In some domains, they already have parity or overmatch, a challenge the joint force has not faced in twenty-five years.

The proliferation of advanced technologies; competitor emphasis on training, modernization, and professionalization; combined with extremist ideologies; and the increasing speed of human interaction makes large-scale combat more lethal. As the Army and the joint force focused on counter-insurgency and counter-terrorism at the expense of other capabilities, our competitors watched, learned, adapted, modernized, and devised strategies that placed us at a position of relative disadvantage.

Combat power may win battles, but sustainment wins wars. In light of current threats, simply acquiring more resources is not enough to succeed. Sustainment doctrine is critical to more than just the sustainment community; it lays the foundation for all Army leaders to plan and execute unified land operations. The Army and joint force must adapt and prepare for large-scale combat operations in highly contested, lethal environments where the enemy employs long-range fires and other capabilities that rival or surpass our own. The key to all successful military campaigns throughout history is the ability to sustain itself. Sustainment units must be able to operate effectively and survive in expeditionary environments across all contested domains. The ability to sustain ourselves ensures that the Army, with its joint and multi-national partners, has the operational reach, freedom of action, and the endurance to execute campaigns.

FM 4-0, Sustainment Operations, provides a doctrinal approach for our armies, corps, divisions, and brigades to address the challenges of sustaining operations across all four Army strategic roles – Shape Operational Environments, Prevent Conflict, Prevail in Large-Scale Ground Combat and Consolidate Gains. It is the cornerstone of all sustainment doctrine, detailing how the Army will provide logistics, financial management, personnel services and health service support to the force during unified land operations. FM 4-0 is applicable across the range of military operations during competition and conflict. Its logic and format aligns with FM 3-0 to illustrate how sustainment is central to all military operations, tasks, and activities. FM 4-0 also includes critical planning considerations and examples that illustrate the volume and scope of materiel required to maintain an expeditionary army.

> *FM 4-0, Sustainment Operations*, augments the Army's principal doctrine on providing sustainment support as found in *ADP 4-0*. It describes how Army sustainment forces, as part of a joint team, provide support to Army and other forces with particular emphasis on support to large-scale combat operations. It is a companion manual to *FM 3-0* on Army operations and, together with *ADP 4-0*, provides the foundation for how Army sustainment forces support prompt and sustained large-scale combat operations.

I. The Army in Joint Operations

Ref: FM 3-0 (w/Chg 1), Operations (Dec '17), pp. 1-14 to 1-16.

Joint operations are military actions conducted by joint forces and those Service forces employed in specific command relationships with each other, which of themselves, do not establish joint forces. Traditionally, campaigns are the most extensive joint operations, in terms of the amount of forces and other capabilities committed and the duration of operations. In the context of large-scale combat operations, a campaign is a series of related major operations achieving strategic and operational objectives within a given time and space. A major operation is a series of tactical actions, such as battles, engagements, and strikes, and it is the primary building block of a campaign. Army forces conduct supporting operations as part of a joint campaign.

The Army's primary mission is to organize, train, and equip its forces to conduct prompt and sustained land combat to defeat enemy ground forces and seize, occupy, and defend land areas. The Army accomplishes its mission by supporting the joint force in four strategic roles: shape operational environments, prevent conflict, conduct large-scale ground combat, and consolidate gains. The strategic roles clarify the enduring reasons for which the U.S. Army is organized, trained, and equipped.

Ref: FM 3-0 (Oct '17), fig. 1-4. Army strategic roles and their relationships to joint phases.

I. Shape Operational Environments

Army operations to shape bring together all the activities intended to promote regional stability and to set conditions for a favorable outcome in the event of a military confrontation. Army operations to shape help dissuade adversary activities designed to achieve regional goals short of military conflict. As part of operations to shape, the Army provides trained and ready forces to geographic combatant commanders (GCCs) in support of their theater campaign plan. The theater army and subordinate Army forces assist the GCC in building partner capacity and capability and promoting stability across the AOR. Army operations to shape are continuous throughout a GCC's AOR and occur before, during, and after a joint operation within a specific operational area.

Shaping activities include security cooperation and forward presence to promote U.S. interests, developing allied and friendly military capabilities for self-defense and multinational operations, and providing U.S. forces with peacetime and contingency access to a host nation. Regionally aligned and engaged Army forces are essential to achieving objectives to strengthen the global network of multinational partners and preventing conflict.

See pp. 2-9 to 2-18 for discussion of sustaining operations to shape.

II. Prevent Conflict

Army operations to prevent include all activities to deter an adversary's undesirable actions. These operations are an extension of operations to shape designed to prevent adversary opportunities to further exploit positions of relative advantage by raising the potential costs to adversaries of continuing activities that threaten U.S. interests. Prevent activities are generally weighted toward actions to protect friendly forces, assets, and partners, and to indicate U.S. intent to execute subsequent phases of a planned operation. As part of a joint force, Army forces may have a significant role in the execution of directed FDOs. Additionally, Army prevent activities may include mobilization, force tailoring, and other predeployment activities; initial deployment into a theater to include echeloning command posts; employment of intelligence collection assets; and development of intelligence, communications, sustainment, and protection infrastructure to support the JFC's concept of operations.

See pp. 2-19 to 2-26 for discussion of sustaining operations to prevent.

III. Conduct Large-Scale Ground Combat

During large-scale combat operations, Army forces focus on the defeat and destruction of enemy ground forces as part of the joint team. Army forces close with and destroy enemy forces in any terrain, exploit success, and break their opponent's will to resist. Army forces attack, defend, conduct stability tasks, and consolidate gains to attain national objectives. Divisions and corps are the formations central to the conduct of large-scale combat operations, organized, trained and equipped to enable subordinate organizations. The ability to prevail in ground combat is a decisive factor in breaking an enemy's will to continue a conflict.

See pp. 2-27 to 2-40 for discussion of large-scale combat operations sustainment.

See chap. 3 for related discussion of sustainment execution (logistics, personnel services, and health service support).

IV. Consolidate Gains

Army operations to consolidate gains include activities to make enduring any temporary operational success and to set the conditions for a sustainable environment, allowing for a transition of control to legitimate civil authorities. Consolidation of gains is an integral and continuous part of armed conflict, and it is necessary for achieving success across the range of military operations. Army forces deliberately plan to consolidate gains during all phases of an operation. Early and effective consolidation activities are a form of exploitation conducted while other operations are ongoing, and they enable the achievement of lasting favorable outcomes in the shortest time span. Army forces conduct these activities with unified action partners. In some instances, Army forces will be in charge of integrating forces and synchronizing activities to consolidate gains. In other situations, Army forces will be in support. Army forces may conduct stability tasks for a sustained period of time over large land areas. While Army forces consolidate gains throughout an operation, consolidating gains becomes the focus of Army forces after large-scale combat operations have concluded.

See 2-41 to 2-44 for discussion of sustaining operations to consolidate gains.

II. Sustainment of Unified Land Operations

Ref: FM 4-0, Sustainment (Jul '19), pp. 1-5 to 1-6.

Multi-Domain Extended Battlefield

The interrelationship of air, land, maritime, space, and cyberspace requires a cross-domain understanding of an OE. Sustainment commanders and staffs must understand friendly and enemy capabilities that reside in each domain and the potential impacts to sustainment operations. Space and cyberspace operations that degrade sustainment information system capabilities as well as the peer threat employment of conventional, special operations, guerilla, and insurgent forces to interdict friendly air, land, and maritime operations, can all degrade sustainment operations. Since many friendly capabilities are not organic to sustainment formations, commanders and staffs plan, coordinate for, and integrate joint and other unified action partner capabilities in a multi-domain approach to operations.

During large-scale combat against peer threats, all friendly forces, including those conducting sustainment tasks, are in contact and under observation in the space and cyberspace domains, as well as the information environment. In light of potential adversaries' capabilities, Soldiers must be prepared to operate in denied, degraded, and disrupted communication environments. FM 6-99 includes standardized report and message formats. The formats in the field manual are for manual and voice use. The report and message formats help users prepare and manually transmit written and voice reports and messages. Each format provides an organized template to record, pass, and store information. Operations on the multi-domain battlefield will require Soldiers maintain the ability to operate in a contested cyber or space environment, without the use of enterprise systems. Sustainment organizations should maintain manual reporting skills and should also be prepared to use alternate methods of reporting such as, telephone, radio transmission, messenger, or hard copy.

Sustainment is inherently joint. Joint interdependence is the purposeful reliance of all the services upon each other's capabilities to maximize the complementary and reinforcing effects of both. The United States Air Force provides airlift capabilities to move Army forces quickly across strategic LOCs. The United States Navy provides strategic sealift into deep draft ports and land capabilities to supplement Army theater opening forces entering areas where ports are austere, damaged, or non-existent. The joint force enables Army sustainment and provides the services and capabilities needed to sustain unified land operations.

See chap. 8, Joint Logistics, for further discussion.

Army sustainment enables unified land operations by providing the support required to keep the Army and its unified action partners engaged in operations across the OE. Lack of sufficient sustainment support slows operational tempo, contributes to early culmination, and could lead to the defeat of friendly forces on the ground. Since most Army sustainment capabilities reside within the Reserve Component, contracted support, high readiness reserve units and Army prepositioned stocks play critical roles during initial stages of a crisis response. It is essential that sustainment and operational planners be inseparable in the planning, preparation, execution, and assessment of operations.

Freedom of Action, Operational Reach, and Prolonged Endurance

The sustainment warfighting function is essential for conducting operations and generating combat power as the Army performs its strategic roles. Sustainment provides the operational commander freedom of action, operational reach, and prolonged endurance necessary to shape operational environments, prevent conflict, prevail in large-scale ground combat operations, and consolidate gains.

(Sustainment Operations)
I. Operations to Shape

Ref: FM 4-0, Sustainment Operations (Jul '19), chap. 3.

Sustaining Operations to Shape

Examples of shaping activities are set the theater, military engagements, security cooperation, combined training and exercises, and sustainment preparation of the OE. The following paragraphs describe these activities and provide examples of sustainment support. There are a number of sustainment considerations that typically apply to specific types of shaping activities. Shaping activities incorporate a large portion of conventional force and SOF core activities, requiring planning for both.

I. Set the Theater

Setting the theater is a continuous shaping activity and is conducted as part of steady-state posture and for contingency or crisis response operations. Set the theater describes the broad range of activities conducted to establish the conditions in an operational area for the execution of strategic plans. The GCC has overall responsibility for this activity, but executes many of its responsibilities through the TSC of the ASCC. The purpose of setting a theater is to establish favorable conditions for the rapid execution of military operations and the support requirements for a specific OPLAN during crisis or conflict.

Setting the theater involves all of the warfighting functions.

- The focus of the command and control warfighting function is the organization and the command and control of forces to accomplish missions. The ASCC tailors, and controls Army forces in the AOR. The TSC provides command and control of assigned and attached sustainment forces in the AOR.
- The movement and maneuver warfighting function focuses on mobilization, deployment, employment, and redeployment of forces. The ASCC conducts theater opening and is responsible for RSOI of Army forces. The TSC provides TACON for movement of Army of forces into theater, conducts RSOI, and provides command and control for theater distribution.
- The intelligence warfighting function focuses on planning, collecting, producing, and disseminating intelligence. The ASCC provides Army intelligence capabilities to support CCMD operations. Part of that intelligence support is setting the theater from an intelligence perspective that is bigger than supporting sustainment operation (see FM 2-0). Supporting theater sustainment intelligence requirements is a significant and complex mission. To meet theater sustainment intelligence requirements the TSC G-2 directs, plans, collects, and disseminates intelligence to subordinate units. However, the TSC G-2 also depends on national to tactical intelligence and the theater intelligence architecture for access to critical intelligence.
- The fires warfighting function plans and directs Army fires in coordination with joint fires. Sustainment supports joint and Army fires.
- Protection focuses on establishing force protection measures for Army forces. The ASCC is responsible for Army forces protection in the AOR. Sustainment plans, coordinates, and executes protection plans for sustainment forces.

Sustainment Operations in Support of Military Engagement & Security Cooperation

Ref: FM 4-0, Sustainment (Jul '19), pp. 3-3 to 3-6.

II. Military Engagement

Military engagement is the routine contact and interaction between individuals or elements of the Armed Forces of the U.S. and those of another nation's armed forces, or foreign and domestic civilian authorities or agencies to build trust and confidence, share information, coordinate mutual activities, and maintain influence (JP 3-0). Military engagements are primarily State Department-led engagements. These occur as part of security cooperation, but also extend to interaction with domestic civilian authorities. Military engagements can reduce tensions and may preclude conflict; if conflict is unavoidable, these engagements may allow the U.S. to enter into it with stronger alliances or coalitions.

A military-to-military engagement requires less sustainment support than large-scale combat operations. Host-nation support is civil and/or military assistance rendered by a nation to foreign forces within its territory during peacetime, crises or emergencies, or war based on agreements mutually concluded between nations (JP 4-0). Sustainers leverage contacts during this shaping activity to facilitate logistics partnerships, enhance interoperability, establish or refine HNS agreements, and gain access to potential critical infrastructure nodes. Routine interactions during operations to shape will help establish agreements and partnerships that may be mutually beneficial during follow-on operations. Sustainers are involved in all these engagements primarily to facilitate sustainment agreements and coordinate planning for future operations.

III. Security Cooperation

Security cooperation is all DOD interactions with foreign security establishments to build security relationships that promote specific U.S. security interests, develop allied and partner nation military and security capabilities for self-defense and multinational operations, and provide U.S. forces with peacetime and contingency access to allied and partner nations (JP 3-20). The Department of State leads and provides oversight for security cooperation efforts.

Sustainment commands simultaneously plan and synchronize sustainment operations for theater security cooperation activities. The Army approach to supporting the larger DOD security cooperation effort is either indirect or direct.

Indirect approach activities involve the U.S. supporting a nation with security cooperation programs, given legitimate authorities, designed to enhance its capability and capacity. The sustainment command supports the following programs and activities typical of the indirect approach:

- International military education and training.
- Multinational and joint exercises and exchange programs.

Direct approach activities involve U.S. forces assisting the host nation by conducting operations for the mutual benefit of the host nation and U.S. interests. These operations either provide a capability the host nation does not possess or increase the capacity of the host nation to conduct the operation.

Establishing a host nation coordination center is a means to enhance stability and interaction between nations. The lead element for coordination center is security cooperation (G-9), with representation from the logistics and medical (G-4, Surgeon), financial management (G-8, FMSC), engineers (G-7), G-3, host nation representatives, Department of State and any other governmental agencies or non-governmental organizations as required. A multinational commander, especially one that operates under a parallel com-

mand structure, establishes a coordination center during the shape role of an operation. It organizes and controls functional areas including logistics, and civil-military operations. A coordination center is the initial focal point for support issues such as force sustainment, medical support, infrastructure engineering, HNS, and movement control. As a multinational force matures, the center's role includes activities such as force provision or force deployment. Member nations provide action officers who are familiar with its activities when a coordination center is activated. Multinational forces are encouraged to maintain contact with parent headquarters. For more information, see FM 3-16.

Security assistance is an element of security cooperation that is authorized by the Department of State and administered by the DOD (ATP 3-93). It is a group of programs the U.S. Government uses to provide defense articles, military training, and other defense-related services by grant, loan, credit, or cash sales. Security assistance programs are typically focused on the transfer of defense articles and services to eligible foreign governments, the provision of training and education to foreign military personnel, and the sale of construction services in support of partner nations' military establishments. Sustainers are frequently required to provide support and logistics training to support these activities.

Security force assistance are the DOD activities that contribute to unified action by the U.S. Government to support the development of the capacity and capability of foreign security forces and their supporting institutions (JP 3-22). Army sustainers interact with sustainers of partner countries in these operations. These partnerships assist in future interoperability and enhance partner nation militaries to be more self-sufficient in logistics capabilities.

Foreign internal defense is participation by civilian and military agencies of a government in any of the action programs taken by another government or other designated organization to free and protect its society from subversion, lawlessness, insurgency, terrorism, and other threats to its security. Sustainment support operations are limited by applicable U.S. law without an acquisition and cross servicing agreement (ACSA). Such support usually consists of transportation or limited maintenance support, although an ACSA can allow additional support.

In security cooperation, support considerations include support to U.S. forces and support to host nation forces based on a variety of authorizations. Support to host or partner nations is primarily driven by already established ACSAs. If ACSAs are not in place, local State Department officials act as lead for determining what support can be granted to host nations.

Combined Training and Exercises

Army forces build partner combat readiness and set conditions for future contingencies through training and exercises. Combined exercises familiarize both forces with the capabilities and shortfalls of the other force and develop procedures to leverage capabilities and mitigate shortfalls. These serve to sustain and/or develop interoperability between nations as well as build partnership capacity.

These exercises are extremely diverse in size, participation, duration, and sustainment requirements. The requirements may be a few aircraft being sustained by HNS or OCS with minimal DOD sustainment to large-scale training operations requiring a combination of HNS, OCS, and home station sustainment activities. These exercises may be with one U.S. military agency and another country or with joint agencies and multiple nations.

Refer to TAA2: Military Engagement, Security Cooperation & Stability SMARTbook (Foreign Train, Advise, & Assist) for further discussion. Topics include the Range of Military Operations (JP 3-0), Security Cooperation & Security Assistance (Train, Advise, & Assist), Stability Operations (ADRP 3-07), Peace Operations (JP 3-07.3), Counterinsurgency Operations (JP & FM 3-24), Civil-Military Operations (JP 3-57), Multinational Operations (JP 3-16), Interorganizational Cooperation (JP 3-08), and more.

Sustainment Preparation of the OE (Overview)

Ref: FM 4-0, Sustainment (Jul '19), pp. 3-8 to 3-13.

Geography and Environmental Factors. Information on climate, terrain, flooding, precipitation, and endemic diseases in the AO is used to determine when and what types of equipment are needed. For example, water information determines the need for such things as early deployment of well-digging assets and water purification and distribution units. Endemic disease conditions, vector-borne illnesses, and local medical resources greatly influence requirements for Army medical assets. Terrain, weather, lengths of LOCs, and other factors influence maintenance and fuel requirements. Sustainment planners must consider assistance through veterinary services to reduce risk and prevent disease during sustainment preparation of the operational environment. Methods to prevent disease include-improving sanitation practices, waste management controls, and pest and vector control. These are crucial to disease prevention. Regional spraying and insect repellent application to guard against hazardous flora and fauna are examples of prevention methods.

Supply and Services. Planners require information on the availability and characteristics of supplies and services readily available in the operational area. Supplies such as subsistence items, water and ice, bulk petroleum, and barrier materials are the most common. Compatibility of commodities and services for example, electrical and fuel connectors and classes of supply, should be considered. Services that may be available consist of shower and laundry, sanitation services, and water purification.

See p. 3-18. For additional information, refer to ATP 4-42.

Facilities. Identifying infrastructure and capacity to receive personnel, commodities, equipment and other resources is an imperative. Assessing availability of warehouses, cold-storage facilities, production and manufacturing plants, reservoirs, administrative facilities, hospitals, sanitation capabilities, hotels, barracks, military bases, airfields, and rail systems can greatly reduce the requirement for the deployment of U.S. assets.

Transportation. Development of any distribution plan depends on information regarding road and rail networks, inland waterways, airfields, truck availability, bridges, ports, cargo handlers, petroleum pipelines, materials-handling equipment, traffic flow, choke points, and potential movement control complications. Movement of cargo in theater must comply with laws, regulations, and rules for transporting materiel as established by the international agreements, the U.S. and the host nation. Cargo restrictions vary from theater to theater. The CCDR has the authority to set cargo restrictions. Non-materiel cargo restrictions include weight limits at APODs and SPODs, vehicle weight and dimension limits on routes, and certain airspace controls. Materiel cargo restrictions may include explosives, pyrotechnics, POLs, compressed gases, corrosives, and batteries. Planners also need to plan for any host nation administrative requirements for activities such as border crossings, customs, and diplomatic clearances.

See p. 3-11. For additional information, refer to ATP 4-11.

Maintenance. Key planning considerations for maintenance support include the availability of host nation maintenance capabilities, information on contract maintenance assets, the commonality or standardization of major end items and repair parts across the force, and the host nation's internal capacity for additive manufacturing and fabricating repair parts.

See p. 3-5. For additional information, refer to ATP 4-33.

General Skills. Sustainment planners at all echelons gather information on the general population with a focus on local personnel who can function as translators and skilled and unskilled laborers. Sustainment plans are influenced by availability of drivers,

administrative clerks, dockworkers, materials-handling equipment operators, food service personnel, security guards, and mechanics.

Army Pre-Positioned Stocks. APS is equipment and supplies configured in unit sets forward-positioned afloat and ashore located at or near the point of planned use or at other designated locations. This allows units identified for early entry to deploy with limited to-accompany-troops equipment and draw unit equipment at an RSOI location. This reduces the initial amount of strategic lift required for power projection to sustain the warfighter until the LOC from the strategic base is established.

Refer to ATP 3-35.1 for additional information on APS.

Banking and Economy. Financial management leaders/planners analyze the economic impact of the use of currency (U.S. and foreign) on the local economy. This economic analysis is a detailed report provided to commanders to make decisions on applying the economic instrument of power, identifying all financial aspects of a specific geographical area, and the effect of a U.S. force presence will have on the specific AOR. Banking support includes negotiating with host nation banking facilities, advising unit commanders on the use of local currency, and coordinating with strategic providers. Some examples are Office of the Under Secretary of Defense (Comptroller), the U.S. Treasury, Defense Finance and Accounting Service, Federal Reserve Bank, and the United States Army Financial Management Command.

Non-Organic Support. Approximately eighty percent of Army sustainment capabilities reside in the Reserve Component. The Soldiers and units that provide those capabilities may require several weeks to months to mobilize, train, and deploy before becoming available to support military operations in an AOR. The delayed arrival of this organic capability requires sustainment planners to coordinate and synchronize sustainment from non-organic sources, including HNS, ACSAs, and OCS.

Operational Contract Support. The OCS process enables commanders to acquire services, commodities, and construction support from commercial sources, thereby reducing sealift requirements, accelerating the deployment of combat power, and extending the commander's operational reach. Because of the long lead-time required to coordinate commercial support, planners need to clearly identify capabilities and limitations as part of the deliberate planning process. OCS augments sustainment capabilities through the integration of commercial sector support activities into military operations. OCS plays an important role in shaping operations by aiding in the establishment of favorable conditions for rapid execution of military operations. During operations to shape, sustainment planners at the theater level align allocated military resources against forecasted requirements and employ OCS to mitigate risk. OCS consists of three complementary functions: contract support integration, contracting support, and contractor management.

See p. 3-40. Refer to ATP 4-10 for information regarding OCS roles and responsibilities.

Agreements with other Nations. Sustainment preparation of the OE considers whole-of-government initiatives, including bilateral or multilateral diplomatic agreements. These agreements allow U.S. forces to access ports, terminals, airfields, and bases within the AOR to support future military contingency operations. The Department of State and the appropriate U.S. diplomatic mission negotiate bilateral or multilateral agreements. Positive U.S. relations and successful bilateral engagement in one nation can impact U.S. interests in other regional locations. HNS is civil and military assistance rendered by a nation to foreign forces within its territory during peacetime, crises or emergencies, or war based on agreements mutually concluded between nations. Negotiating HNS and theater support contracting agreements may include pre-positioning of supplies and equipment, civilian support contracts, OCONUS training programs, and humanitarian and civil assistance programs.

(Sustainment Operations)
II. Operations to Prevent

Ref: FM 4-0, Sustainment Operations (Jul '19), chap. 4.

Sustaining Operations to Prevent

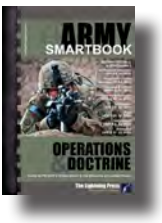
The purpose of operations to prevent is to deter adversary actions contrary to U.S. interests (FM 3-0). It is typically conducted in response to activities that threaten unified action partners and require the deployment or repositioning of forces in a theater to demonstrate the willingness to fight if deterrence fails. Furthermore, prevent activities enable the joint force to gain positions of relative advantage prior to future combat operations. As part of crisis response or limited contingency operations, operations to prevent are tailored in scope and scale to achieve a strategic or operational-level objective. It may be conducted as a stand-alone response to a crisis, as in a noncombatant evacuation operation, or as part of a larger joint operation such as large-scale combat.

Operations to prevent are characterized by actions to protect friendly forces and indicate the intent to execute subsequent phases of a planned operation. With the transition from shaping to deterrence, the theater Army shifts to refining contingency plans and preparing estimates for land power based on GCC guidance.

Sustainment of operations to prevent require a force array tailored to the type of operation, geographic location, permissiveness of the environment, threat, and a host of other considerations determined during the planning phase of prevent operations. Commanders must also consider possible sequels and branches during planning to ensure optimal command and support relationships are established, and the right mix of forces are identified for potential follow-on operations. The phased arrival of Army sustainment forces will require planners to integrate non-Army solutions, including acquisitions cross-service agreements and OCS, to enable the rapid deployment of combat forces.

The ASCC is responsible for all Army operations, to include reception of forces, sustaining forces, and preparing to redeploy forces. The ASCC also interacts with strategic and operational commands and organizations essential to the theater distribution network.

Assessment of the sustainment preparation of the OE and analysis conducted during operations to shape is a key activity for sustainers during operations to prevent. The outcomes of sustainment preparation of the OE informed OPLANs and time-phased force deployment data (TPFDD). It is during operations to prevent that plans and estimates are refined, the theater distribution network is expanded, and actions are taken to deploy forces as required.



Refer to AODS6-1 (w/SMARTupdate 1): The Army Operations & Doctrine SMARTbook, pp. 2-43 to 2-60, for full discussion of operations to prevent from FM 3-0. While the U.S. Army must be manned, equipped, and trained to operate across the range of military operations, large-scale ground combat against a peer threat represents the most significant readiness requirement. FM 3-0 provides doctrine for how Army forces, as part of a joint team, and in conjunction with unified action partners, do this.

(Sustainment Operations)
III. Large-Scale Combat

Ref: FM 4-0, Sustainment Operations (Jul '19), chap. 5.

Large-Scale Combat Operations Sustainment

As a nation, the U.S. wages war by employing all instruments of national power-diplomatic, informational, military, and economic. The President employs the Armed Forces of the U.S. to achieve national strategic objectives. The nature and scope of some missions may require Army forces to conduct large-scale combat operations to achieve national strategic objectives or protect national interests.

Large-scale combat operations are characterized by simultaneous, geographically dispersed operations that occur in multiple domains. In large-scale combat operations against a peer threat, maneuver commanders conduct decisive action to seize, retain, and exploit the initiative. Maneuver commanders strive to achieve superiority across multiple domains (air, maritime, land, space, and cyberspace) early to allow the Army forces to conduct land operations without prohibitive enemy interference. This involves the orchestration of many simultaneous unit actions in the most demanding of OEs.

Characteristics of sustaining large-scale combat operations include volume, lethality, precision, and tempo. Large-scale combat operations will require a volume of reinforcements, materiel, and equipment significantly greater than other types of operations. It will be more lethal than other types of operations generating mass casualties and replacement of personnel and equipment on a large scale. Large-scale combat operations will require greater precision in our distribution network than other types of operations. It will be executed at a higher operational tempo than other types of operations that require flexible and adaptable sustainment structure to meet mission requirements.

Sustainment Challenges in Large-Scale Combat Operations

Large-scale combat operations are characterized by simultaneous, geographically dispersed operations that occur in various OEs and are challenged across multiple domains. It requires greater sustainment than other types of operations because of the higher operational tempo, greater lethality, and significantly increased consumption of supplies, and equipment. The lethal nature of large-scale combat operations increases the propensity for mass casualties, requirements for mortuary affairs, increased requirements for a robust medical architecture, and large-scale personnel and equipment replacements. Large-scale combat operations will require the distribution system to move a greater volume of personnel and equipment than in other types of operations. Increased velocity and precision will be required to sustain operations.

I. Sustainment Considerations during Large-Scale Combat Operations

Ref: FM 3-0 (w/Chg 1), Operations (Dec '18), pp. 2-48 to 2-49.

Logistics during Large-Scale Combat Operations

Logisticians support operational tempo by delivering supplies and materiel as far forward as possible. They use throughput distribution and preplanned and preconfigured packages of essential items to do this. Logisticians maintain constant contact with operational units to determine requirements for supporting operations. Operational units also provide logisticians with support estimates for contingencies and requirements for cross-loading of supplies to prevent all of one type of supply from being destroyed by the loss of a single system.

Supplies and material should remain close to the maneuver force to ensure short response times for supplies and services. This includes uploading critical materiel—such as water, petroleum, oils, and lubricants and ammunition—in order to anticipate attempted occupation of a piece of terrain by more than one unit. Commanders must make risk decisions regarding logistics preparations and avoidance of enemy detection, since logistic preparations may give indications of friendly tactical plans.

The availability of supplies and materiel to sustain tactical unit operations becomes critical to extend operational reach as large-scale combat operations progress. Operational reach is reduced when supplies fail to keep up with the demand of tactical units. Slow or limited resupply may require commanders to use controlled supply rates for various classes of supply to reduce unit expenditures. When those controlled supply rates are not sufficient to continue operations, the force culminates.

During large-scale combat operations supply lines of communication are strained, and requirements for repair and replacement of weapon systems increase. Requirements for petroleum, oils, and lubricants increase during the offense. Conversely, requirements for munitions tend to be higher in the defense than in the offense. Sustainment units must be as mobile as the forces they support. One way to provide continuous support is to task organize elements of sustainment units or complete sustainment units with their supported maneuver formations as required by the mission.

The variety and complexity of possible situations arising during an attack requires sustainment operators to establish a flexible and tailorable distribution system in support of tactical commanders. There may be a wide dispersion of forces and lengthening of lines of communication. Required capabilities to support longer lines of communications include movement control, in-transit visibility, terminal operations, and mode operations.

Field maintenance assets move as forward as possible to repair inoperable and damaged equipment to return it to service as quickly as possible. Crews perform preventive maintenance checks and services as modified for the climate and terrain in which they find themselves. Battle damage assessment and repair restores the minimum essential combat capabilities necessary to support a specific combat mission or to enable the equipment to self-recover. Crews and maintenance and recovery teams conduct battle damage assessment and repair to rapidly return disabled equipment to battlefield service using field expedient components and means.

Establishing aerial resupply and forward logistics base camps may be necessary to sustain operations. This is especially true in the offense, if an attack transitions to exploitation and pursuit conducted at great distances from unit sustaining bases. Aerial resupply, either by rotary-wing or parachute, delivers critical supplies to the point of need during an entry operation, deep inland operation, or to a rapidly moving unit. The unit or support activity at the airlift's point of origin is responsible for obtaining the required packing, shipping, and sling-load equipment. It prepares the load for aerial transport, prepares the pickup zone, and conducts air-loading operations. The unit located at the airlift destina-

tion is responsible for preparing the landing zone to accommodate aerial resupply and for receiving the load.

See pp. 3-5 to 3-42 for discussion of logistics (sustainment execution).

Personnel Services during Large-Scale Combat Operations

During large-scale combat operations, the key subordinate functions of staffing the force that are important are personnel accountability and strength reporting. The subordinate functions of provide human resource services including postal operations, finance services, and casualty operations, continue during large-scale combat operations. Human resource planning and operations are the means by which human resources are addressed in the military decision-making process and in the attack operations plan. This includes casualty forecasts necessary to inform commanders and staffs.

See pp. 3-45 to 3-46 for discussion of personnel services (sustainment execution).

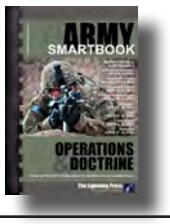
Health Service Support during Large-Scale Combat Operations

Large-scale combat operations place an incredible burden on medical resources due to the magnitude and lethality of the forces involved. Medical units can anticipate large numbers of casualties in a short period of time due to the capabilities of modern conventional weapons and the possible employment of weapons of mass destruction. These mass casualty situations can exceed the capabilities of organic and direct support medical assets without careful planning and coordination. Casualty evacuation must occur concurrently with operations.

Effective management of mass casualty situations depends on established and rehearsed unit-level mass casualty plans and detailed medical planning. There are a number of other variables which can ensure the success of a unit's mass casualty response plan. These include, but are not limited to—

- Coordination and synchronization of additional medical support and augmentation and their dispositions and allocations, such as medical evacuation support, forward resuscitative and surgical teams, combat support and field hospitals, casualty collection points, ambulance exchange points, and established Class VIII resupply.
- Predesignating casualty collection points.
- Quickly locating the injured and clearing them from the battlefield.
- Providing effective emergency medical treatment for the injured.
- Accurate triage and rapid medical evacuation of the injured to medical treatment facilities at the next higher role of care.
- Use of alternative assets when the number of casualties overwhelms the capacity of available medical evacuation systems.

See pp. 3-47 to 3-50 for discussion of health service support (sustainment execution).



Current sustainment systems possess vulnerabilities and connectivity requirements that may make them susceptible to disruption and deliberate targeting by threat forces, both lethally and non-lethally. To mitigate this vulnerability and maintain an accurate readiness COP, organizations develop the rhythm of military operations, data cut-off times, as-of times, and reporting times. Commanders and staffs also balance the timeliness and potential latency of reporting with the amount of time needed to analyze data when evaluating unit readiness and combat capability.

Sustainment enterprise resource planning systems and associated decision support tools help provide near real-time status with minimal staff effort required to gather and display information from multiple databases. Integrating this information with command and control systems is crucial to give the sustainment leaders and supported commanders and staffs the identical current COP. The value of integrated sustainment information systems and command and control systems is that everyone on the network can see and use the same reported information to plan and control operations.

Sustainment Rehearsals

Sustainment rehearsals are critical to synchronization and the success and accomplishment of the mission. Conducting sustainment rehearsals immediately after the combined arms rehearsal ensures understanding and synchronization of the unit's maneuver and sustainment plan as it traverses the battlefield. It is critical that the combined arms team and all elements of sustainment are represented and participate in sustainment rehearsals to ensure all sustainment commodities understand how these integrate with other elements of sustainment to accomplish the mission. The sustainment rehearsal helps synchronize the sustainment warfighting functions with the other warfighting functions to create a common understanding of the plan.

VI. Support Area

The support area is a smaller, subordinate AO inside the commander's overall AO. The support area is normally, but not always, positioned within and surrounded by the consolidation area. It is where most of an echelon's sustaining operations occur. The geographic size of a support area is based on mission and operational variables and is difficult to quantify. These variables include the number of units assigned to the support area, the existing threat, and the amount of terrain that can be influenced by the unit assigned support area responsibility. As an example for a division support area, if it is assumed to be a brigade-sized area, it will be approximately 10 square kilometers. This number is for general planning consideration and to give readers an idea of the geographic scope of a division support area and the impact it has on command and control and protection. It should be understood that division support area size may vary widely. The corps support area will be significantly larger.

See related discussion on pp. 2-6 to 2-7.

Within the joint security area, strategic enablers such as USTRANSCOM, USAMC, DLA and each of their individual subordinate components link strategic support activities with theater support activities. Examples of these activities include synchronizing strategic and operational distribution of equipment, supplies and personnel; managing materiel and establishing contracts, establishing theater fuel farms and managing excess property turn-in. USASOC coordinates operational support requirements while monitoring SOF activities within the theater. The TSC, ESC and its attached sustainment brigade conduct RSOI for units arriving in theater and support the movement of those units forward to corps and division areas. MEDCOM (DS) provides command and control of all EAB medical units providing direct or GS to the corps and division areas. Other sustainment forces in the joint security area support activities including -classes I and III (Bulk) distribution, APOD and SPOD operations, personnel services, financial management activities, and other support tasks.

Sustainment Execution

Ref: ADP 4-0, Sustainment (Jul '19), pp. 3-10 to 3-13.

Execution is putting a plan into action by applying combat power to accomplish the mission (ADP 5-0). It focuses on actions to seize, retain, and exploit the initiative.

Sustainment determines the depth and duration of Army operations. It is essential to retaining and exploiting the initiative and it provides the support necessary to maintain operations until mission accomplishment. Failure to provide sustainment could cause a pause or culmination of an operation resulting in the loss of the initiative. It is essential that sustainment planners and operation planners work closely to synchronize all of the warfighting functions, in particular sustainment, to allow commanders the maximum freedom of action.

I. Logistics

Logistics is planning and executing the movement and support of forces. It includes those aspects of military operations that deal with: design and development; acquisition, storage, movement, distribution, maintenance, and disposition of materiel; acquisition or construction, maintenance, operation, and disposition of facilities; and acquisition or furnishing of services.

See pp. 3-5 to 3-42 for further discussion.

II. Financial Management

Financial management leverages fiscal policy and economic power across the range of military operations. Financial management encompasses finance operations and resource management.

See pp. 3-43 to 3-44 for further discussion.

III. Personnel Services

Personnel services are those sustainment functions related to Soldiers' welfare, readiness, and quality of life. Personnel services complement logistics by planning for and coordinating efforts that provide and sustain personnel.

See pp. 3-45 to 3-46 for further discussion.

IV. Health Service Support

Health service support encompasses all support and services performed, provided, and arranged by the Army Medical Department to promote, improve, conserve, or restore the behavioral and physical well-being of Army personnel and as directed, unified action partners (UAPs).

See pp. 3-47 to 3-50 for further discussion.

Sustainment plays a key role in enabling the simultaneous **offensive, defensive, and stability or defense support of civil authorities tasks** that occur as part of unified land operations. For example, general engineering support provides construction support to protect key assets such as personnel, infrastructure, and bases. Horizontal and vertical construction enables assured mobility of transportation networks and survivability operations to alter or improve cover and concealment to ensure freedom of action, extend operational reach, and endurance of the force. Legal personnel supporting rule of law activities may find themselves working closely with HN judicial, law enforcement, and corrections systems personnel.

(Sustainment Execution)
I. Logistics

Ref: ADP 4-0, Sustainment (Jul '19). pp. 1-5 to 1-9.

Logistics is planning and executing the movement and support of forces. It includes those aspects of military operations that deal with design and development; acquisition, storage, movement, distribution, maintenance, and disposition of materiel; acquisition or construction, maintenance, operation, and disposition of facilities; and acquisition or furnishing of services. For the sustainment warfighting function, explosive ordnance disposal tasks are discussed under protection and intelligence warfighting functions (ADP 3-37 and FM 2-0.) Army logistics include the following—

Logisitics

I **Maintenance** *(ATP 4-33)*

II **Transportation** *(FM 4-01)*

III **Supply** *(ATP 4-42)*

IV **Field Services** *(ATP 4-42)*

V **Distribution** *(ATP 4-0.1)*

VI **Operational Contract Support** *(ATP 4-92)*

VII **General Engineering Support** *(ATP 3-34.40)*

I. Maintenance

Ref: ATP 4-33 (w/Chg 1), Maintenance Operations (Jul '19).

Army maintenance primary purpose is to ensure unit readiness by maintaining weapon systems and equipment in a fully mission-capable status for immediate and continuous employment in complex and highly lethal environments. Army maintenance organizations are increasingly required to anticipate, analyze, adapt, and tailor available resources for effective and timely support of operations. Success in these types of operations and environments continues to be based on the bottom-line measurements of maintainability, reliability, and availability.

A. Two-Level Maintenance

Ref: ATP 4-33 (w/Chg 1), Maintenance Operations (Jul '19), pp. 1-7 to 1-12.

The Army utilizes a tiered, two-level maintenance system comprised of field and sustainment maintenance. Command teams, maintenance personnel, and planners must have a complete understanding of two-level maintenance fundamentals in order to properly plan and execute maintenance operations. Two-level maintenance provides the operating unit with more capabilities forward and the ability to respond rapidly.

- Soldiers perform field-level maintenance as far forward as possible with the equipment being retained by or returned to the owning unit. Crewmembers, equipment operators, and Ordnance-trained maintainers perform field maintenance.
- All Army modification table of organization and equipment (MTOE) maintenance units perform field maintenance.
- Sustainment maintenance is performed by U.S. Army Materiel Command (USAMC) elements normally comprised of civilians and contractors who return equipment to a national standard, after which the equipment is placed back into the Army's overall supply system. When a unit sends equipment to a sustainment maintenance organization the owning unit, in most cases, removes the equipment from its property book. Only in rare instances, such as unit reset, and watercraft maintenance, is the equipment returned to the owning unit.

The goal of the maintenance system is to reduce repair cycle times by repairing or replacing components, modules, and assemblies as far forward as possible, maximizing reliance on rapid repair parts distribution, and visibility. TM maintenance allocation charts provide repair time guidelines for both field and sustainment-level tasks.

Field Maintenance

Three distinct groups of Soldiers perform field maintenance: equipment operators, equipment crews,and Ordnance Corps trained maintainers. The owning unit or a supporting maintenance unit performs field maintenance utilizing its own tools and test equipment. The unit should retain and repair the item until it is ready to return to service. Maintainers perform field maintenance on all types of unserviceable items of equipment and weapon systems. Repairs include the replacement of an unserviceable line replaceable unit,component, module, or part. However, field maintenance is not limited to simply remove and replace actions. If the operator/crew or Ordnance Corps trained maintainers are authorized and possess the requisite skills,special tools, proper repair parts, references, and adequate time the item should remain on-site and not be evacuated for sustainment maintenance. This is especially relevant to BCTs. The expertise to fix major weapon systems (Abrams, Bradley, Paladin, and Stryker vehicles) resides only in the FSC. There are no maintenance units equipped or staffed to perform field-level maintenance repairs to these weapon systems outside the BCT. The brigade support battalion in a Stryker brigade combat team (SBCT) is one exception as the FMC includes mechanics to maintain the medical company's Stryker medical vehicles.

Operator and Crew Field Maintenance

Operators and crews perform field maintenance on their equipment as outlined in the operator's -10 TM. Some Soldiers receive formal training from their proponent on a specific system through advanced individual training or new equipment training. For example, the driver and gunner for an Abrams Main Battle Tank receive training that gives them an important skill set. Other Soldiers receive specialized training from their unit. Unit commanders are responsible for establishing, conducting, and maintaining a driver training program. Driver training programs emphasize the critical role that platform operators play in PMCS. The operator or crew are typically the first to observe a fault or identify

the development of a fault. In many instances, they have the ability to repair the fault or minimize its impact using onboard spares enabling mission completion. Condition-based maintenance indicators or instrumentation can initiate operator/crew tasks. Typically, tasks consist of inspecting, servicing, lubricating, adjusting, and replacing minor components/assemblies as authorized by the maintenance allocation charts. TMs identify operator/crew tasks within a maintenance allocation chart. The maintenance allocation chart (MAC) identifies the proper basic issue item tools and onboard spares required to complete a given service.

Operators/crews are system specialists in those MOS that receive formal training from their proponent through advanced individual training or specialized functional courses on diagnosing specific system faults. These operator/crews include Patriot missile, signal, military intelligence, or a maneuver unit's master gunner. In some instances, these personnel receive special tools to perform maintenance on their assigned system. Operator/crew maintenance falls into the crew subcategory of field maintenance, detailed in the equipment operator's manual. Operators troubleshoot the entire system using the operator's -10 TM and simplified or embedded diagnostic equipment to identify, isolate, and trace problems.

Maintainer Field Maintenance

Maintainer maintenance is accomplished by Ordnance school trained maintainers utilizing the relevant TM on a component, accessory, assembly, subassembly, plug-in unit, shop replaceable unit within a line replaceable unit, or other portion either on the system or after it is removed by a trained maintainer. Depending on the system and MOS involved, the definition of a line replaceable unit or shop replaceable unit is flexible. The characterization of line or shop replaceable units for wheeled and tracked vehicles, radar, or the Warfighter Information Network-Tactical (WIN-T), shifts as the field maintenance troubleshooting increases in complexity.

Sustainment Maintenance

Sustainment maintenance consists of two subcategories: below depot-level sustainment maintenance and depot-level sustainment maintenance. Units utilize sustainment maintenance when crew, operator,operator-maintainer, or Ordnance Corps trained maintainers lack the requisite skills, special tools, proper repair parts, or references to complete repairs using field maintenance. Based on the extent of damage to the specific item, leaders must decide the best course of action based on operational and mission variables. There is no absolute checklist. Field maintenance is the preferred method of repair. The intent of sustainment-level maintenance is to perform commodity-oriented repairs to return items to a national standard, providing a consistent and measurable level of reliability. USAMC, through the Army Sustainment Command (ASC) and its subordinate Army field support brigades and Army field support battalions, execute sustainment maintenance missions. Sustainment maintenance supports both operational forces and the Army supply system. Unless prior planning occurs, USAMC subordinate elements typically enter after initial setting the theater tasks are completed.

Below Depot Sustainment Maintenance

Maintainers perform below depot-level sustainment maintenance on a component, accessory,assembly, subassembly, plug-in unit, or other portion generally after removal from the system. Sustainment maintenance performed in an operational environment will normally be below-depot sustainment maintenance.

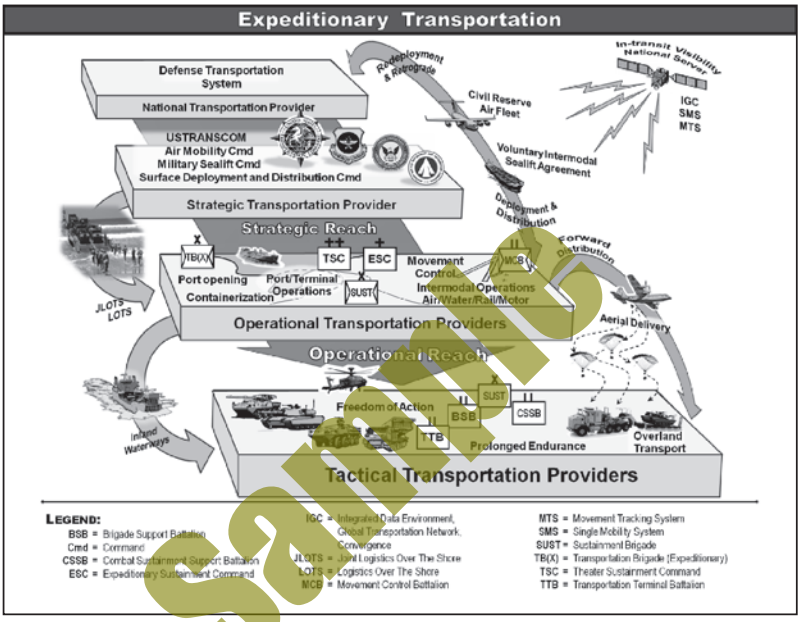
Depot Sustainment Maintenance

Maintainers perform depot-level maintenance on end items, components, accessories, assemblies, subassemblies, or plug-in units either on the system or after it is removed.

II. Transportation

Ref: FM 4-01, Army Transportation Operations (Apr '14).

The U.S. Army Transportation Corps provides an overwhelming capability for Army and joint forces in achieving operational reach, freedom of action and prolonged endurance. Army transportation, combined with strategic enablers, delivers to the Combatant Commander expeditionary capabilities. Introductory figure-1 depicts the strategic to tactical transportation system. It illustrates transportation agencies, organizations, and commands that deploy forces; distribute personnel and materiel; sustain forces for extended durations; and redeploy/retrograde forces and materiel upon mission completion.



Ref: FM 4-01, Introductory figure-1. Army transportation operations overview.

Transportation operations are critical for theater opening. The Army's transportation expeditionary capabilities play an important role in early entry operations. The newly developed transportation brigade (expeditionary) provides a rapid deployment capability that quickly establishes ports operations. The Surface Deployment and Distribution Command provides essential port management for the duration of an operation. Army watercraft provides the capability to conduct joint-logistics-over-the-shore operations and the ability to maneuver small channels, rivers, or land on a bare beach.

Transportation is an integral part of the reception, staging of, onward movement, and integration (RSO&I) of forces. Movement control battalions (MCB) and movement control teams (MCT) regulate the movement forces along busy supply routes. Transportation units operate ports, terminals and intermodal sites. Transportation staffs within the support operations centers of the theater sustainment command (TSC) or expeditionary sustainment command (ESC), and sustainment brigades, manage segments of the theater distribution pipeline by aerial, airdrop, or surface capabilities. When required, transportation units may also play an advisory role in railway operations.

At the tactical level the sustainment brigade, combat sustainment support battalion and the brigade support battalion provide overland transportation assets such as heavy equipment transports; medium tactical vehicles; palletized load system; or other motor transport assets. Transportation capabilities assist a commander's maneuverability by positioning combat units for decisive action and delivering vital support for prolonged operational endurance.

Army transportation functions are divided into four categories; mode operations, intermodal operations, movement control, and theater distribution.

Note: See p. 3-38 for discussion of theater distribution.

A. Mode Operations

Mode operations are the execution of movements using various conveyances (truck, lighterage, railcar, aircraft) to transport cargo and PAX (ADRP 4-0). There are two transportation modes of operation, surface and air, available to support military operations. The surface mode includes motor, water and rail. The air mode consists of fixed-wing and rotary-wing aircraft. Although a pipeline is considered a surface mode of transportation this does not necessarily apply in this sense. However, it must be noted that a pipeline can be used to transport large quantities of bulk petroleum and water which would reduce the number of surface assets needed to transport this commodity. The Army does have the capability to lay and operate a petroleum pipeline which is known as the Inland Petroleum Distribution System.

Surface Modes of Transportation

There are three different types of surface modes of transportation; motor, waterway and rail. Each surface mode uses fundamentally different solutions in a separate environment. The highway mode uses ground transportation assets to travel across land. The waterway or sea mode of transport consists of assets such as ships, boats and barges which transport commodities over a body of water like a sea, ocean, lake, canal or river. The rail mode is a conveyance that moves cargo and passengers by way of a railway or railroad. *See facing page for further discussion.*

Air Modes of Transportation

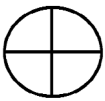
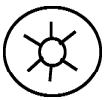
The air mode of transport is comprised of fixed and rotary wing assets. Fixed and rotary wing airlift assets have definite cargo size and weight limitations that must be taken into account when planning for the movement of military personnel and equipment. Movement by air is the fastest but most expensive mode of transportation.

- **Fixed Wing.** The U.S. Air Force, through the AMC, provides a variety of fixed winged assets to fulfill strategic and theater airlift requirements. Air transport by fixed-wing aircraft is the most important transportation mode in terms of rapid strategic mobility. The most common fixed wing assets used to support strategic and theater movements are the U.S. Air Force's C-130, C-5, C-17 and the CRAF.
- **Rotary Wing**. Rotary wing aircraft are used mainly for short-range, tactical transport missions. They can transport essential military equipment and relief supplies directly to a forward area while avoiding rough terrain and/or damaged road or railway systems. These assets support the operational and tactical levels of war and can operate on a less improved support structure than fixed wing aircraft. Military aircraft used to transport personnel and cargo are classified either utility helicopters (UH), or cargo helicopters (CH). The most common of these are the UH-1, UH-60, CH-46, CH-47, and CH-53. All five can lift cargo from an external cargo hook. However the CH-46, CH-47, and Joint capabilities assigned to the common user pool are the only rotary wing assets with cargo compartments large enough to carry a significant amount of internal cargo. For sustainment operations, the Deputy Chief of Staff G3 Aviation section at the Army Service Component Command (ASCC), corps or division levels are responsible for consolidating, prioritizing and processing aviation maneuver sustainment requests.

B. Classes of Supply

Ref: ADP 4-0, Sustainment (Jul '19). table 1-1, pp. 1-7 to 1-8.

The Army divides supply into ten classes for administrative and management purposes.

Class I		Subsistence, including health and welfare items.
Class II		Clothing, individual equipment, tentage, organizational tool sets and kits, hand tools, administrative and housekeeping supplies and equipment (including maps).
Class III		POL, petroleum and solid fuels, including bulk and packaged fuels, lubricating oils and lubricants, petroleum specialty products; solid fuels, coal, and related products.
Class IV		Construction materials, to include installed equipment and all fortification/barrier materials.
Class V		Ammunition of all types (including chemical, radiological, and special weapons), bombs, explosives, mines, fuses, detonators, pyrotechnics, missiles, rockets, propellants, associated items.
Class VI		Personal demand items (nonmilitary sales items).
Class VII		Major items: A final combination of end products which is ready for its intended use.
Class VIII		Medical material, including medical peculiar repair parts.
Class IX		Repair parts and components, including kits, assemblies and subassemblies, reparable and non repairable, required for maintenance support of all equipment.
Class X		Material to support nonmilitary programs; such as, agricultural and economic development, not included in Class I through Class IX.

Emergency resupply, usually involving class III (bulk), class V, and class VIII is executed when the platoon has such an urgent need for resupply that it cannot wait for the routine LOGPAC. For example,emergency resupply procedures start with immediate redistribution of ammunition in individual vehicles,followed by cross leveling ammunition within the platoon while awaiting ammunition to be brought forward. Cross-leveling ammunition refers to distributing equal amounts and kinds of ammunition throughout the platoon.

There are two standard methods of supply conducted in an operational environment: supply point distribution and unit distribution:

Supply Point Distribution

Supply point distribution requires the supported unit to move to a supply point to pick up supplies. The supply point issues materiel to the supported unit that transports their supplies back to the unit with organic transportation. Supply points include supply support activities (SSA) for all supply classes. A supply support activity is an activity assigned a Department of Defense activity address code and that has a supply support mission (JP 4-09).

Unit Distribution

When unit distribution is used, the supported unit receives supplies in its area. The logistics release point, established by the supported unit, may be any place on the ground where unit vehicles pickup supplies and then take them forward to their unit.

Refer to ATP 3-20.98, Scout Platoon, for information on how to establish unit distribution operations.

Throughput distribution bypasses one or more intermediate supply echelons in the supply system to avoid multiple handling. It leverages configured loads and containerization to deliver supplies directly to units in forward areas. For example, engineer barrier materials may be shipped directly to the emplacing units, instead of their supporting sustainment units. Throughput is not automatic. It must be specified in appropriate plans and coordinated.

Materiel managers push supplies to supported units or supported units pull supplies from the supply system:

Push Supply Flow

A process where supplies are pushed forward based on running estimates of the supported unit's consumption and anticipated requirements. The flow of supplies occurs without a request from the supported unit. Typically during the early stages of an operation, sustainment units, via unit distribution, push certain classes of supplies (I, III (bulk), VIII, and V) to subordinate sustainment units and to supported units. Commander priorities and other planning considerations dictate when and where supplies are pushed.

Pull Supply Flow

A process where the flow of supplies occurs after a request from the supported unit and based on the real consumption of the supported unit. As distribution capabilities expand,sustainment units implement the pull system where supported units and maintenance elements request supplies either manually or through automation.

Scheduled supplies are those for predicted requirements. Normally, scheduled supplies do not require a request for replenishment. Requirements are based on troop strength, equipment density, forecasts, and daily usage factors. Scheduled supplies are pushed to supported units based on planned distribution arrangements derived from the logistics status report (LOGSTAT). Subsistence, water, bulk fuel, and munitions are normally treated as scheduled supplies.

Demand supplies are those for which a unit submits a request. Items in supply classes II, III (packaged),IV, VII, VIII, and IX are typically demand supplies.

Command regulated supplies are those a commander has decided to closely control because of scarcity,high cost, or mission need. Commanders normally control supply classes II, III (bulk), IV, V, VII, and VIII. Only the commander who designated it for control can release regulated items for issue.

To sustain tactical operations for specific periods, all units, starting at the company level, determine their ammunition requirements and submit a required supply rate report to the next higher headquarters.

The authorization and allocation of ammunition within an area of operations (AO) is determined by using the required supply rate and the controlled supply rate:

Controlled Supply Rate

The controlled supply rate is the rate of ammunition consumption that can be supported, considering availability, facilities, and transportation. It is expressed in rounds per unit, individual, or vehicle per day. (FM 4-30)

Required Supply Rate

The required supply rate is an estimated amount of ammunition needed to sustain tactical operations, without ammunition expenditure restrictions, over a specified time. The required supply rate is expressed as rounds per weapon per day, or as a bulk allotment per day or based on mission. (FM 4-30)

Aerial delivery is used for routine and urgent resupply to units in remote or forward locations where terrain limits access. Aerial delivery reduces the need for route clearance of ground lines of communications as it bypasses enemy activity. In order for aerial delivery to be effective, friendly forces must control airspace throughout the AO and enemy ground-based air defenses must be neutralized.

Refuel on the move is most often used to support extended moves to or from a tactical assembly area. When vehicles enter a refuel on the move site for refueling, they receive a predetermined amount of fuel(usually timed) and they move out to return to their convoy or formation.

Controlled exchange is the removal of serviceable components, assemblies, and subassemblies from unserviceable, uneconomically reparable equipment for reuse in restoring equipment to a serviceable condition. Controlled exchanges allow units to maintain combat readiness by repairing non-mission capable equipment with the use of serviceable parts from another non-mission capable vehicle. This process must be strictly controlled and documented or it becomes unauthorized cannibalization.

Consumable items are the expendable property that a unit needs to perform its mission. Consumable items, such as ammunition, fuel, cleaning and preserving materials, surgical dressings, drugs, medicines, repair parts, building materials, and office supplies lose their separate identity in use. Expendable items require no formal accountability after issue from a stock record account. Shop stock, bench stock, authorized stockage lists, and unit supply lists contain consumable items. These items require proper use and safeguarding, but do not require formal accounting after issue to the user.

Nonexpendable property retains its original identity throughout its life cycle. Nonexpendable properties are material planning objects that are assigned a material planning objects number that includes the item's line item number (LIN). Nonexpendable property requires formal property book and stock record accountability throughout its life cycle.

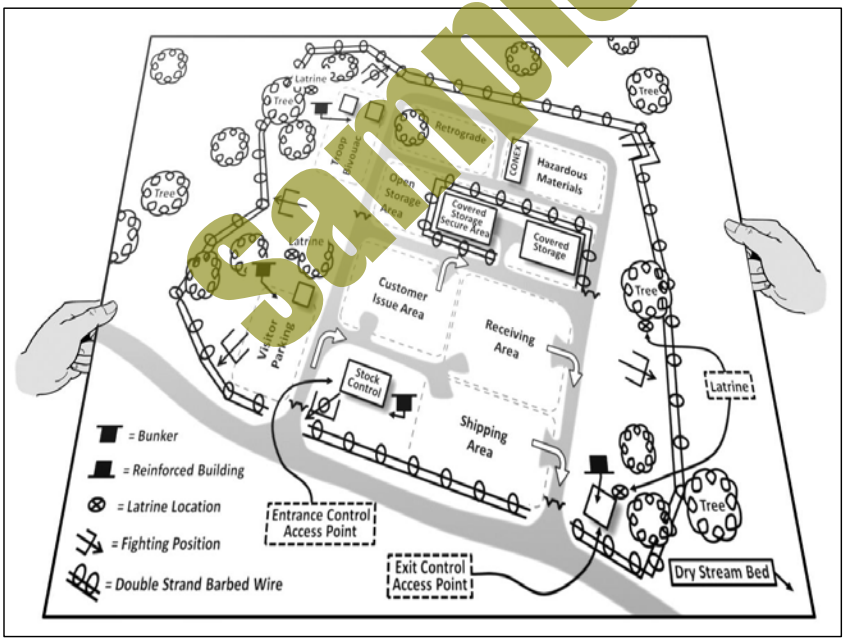
Durable property is an item of Army property that does not require property book accountability after issue from the stock record account. For example, hand tools, used over a relatively long period without being depleted or consumed, are typically controlled through hand receipts.

C. Issue Materiel

Ref: ATP 4-42, Materiel Management, Supply, and Field Services Operations (Nov '20), pp. 5-24 to 5-26.

This section discusses establishing a supply point because it influences the effectiveness of the issue process. Every supply point, all supply classes, must adapt to changing locations. It is important to note that every deployment is different and every site is different. When deployed, the supply point will issue supplies to the supported unit from either a developed or an undeveloped location. A developed location will have an infrastructure (roads, buildings) and undeveloped location will lack that infrastructure. Every tactical supply point, regardless of supply class, will use the same basic principles when developing the field layout plan.

Spend time and effort planning day-to-day operations while developing the storage layout plan. The layout of a supply point can adversely affect the ability to process receipts and issues, but a well-planned layout can reduce handling of items, thereby improving processing times. Sketch the supply point area to show the use of the space (receiving, shipping, hazardous materials storage, yard open storage, office space),and the materiel stored (bulk fuel, bulk water, subsistence, medical supply, repair parts, construction materials, end items). A sketch is a rough drawing that allows the testing of several ideas to zero in on the most likely layouts for the supply point. Include latrines and offices in the sketch. See figure 5-7 for an example of a supply point field site sketch. In this instance the supply is placed in an area with some trees and no roads other than the main road.



Ref: ATP 4-42, fig. 5-7. Supply point field site.

Materiel Management (Select Classes)

Ref: ATP 4-42, Materiel Management, Supply, and Field Services Operations (Nov '20), pp. 5-5 to 5-6.

The following section describes select materiel management roles by position and by commodity. Personnel roles and responsibilities are similar regardless of echelon or size of the organization. Duty titles vary and, in some instances, one individual may perform the responsibilities embodied in two or more of the materiel management roles described in this section of the publication. Support operations at all echelons perform the same basic distribution management functions, but their focus changes based on the scope of responsibilities. For example, the TSC DMC includes a DIB that focuses on the entire theater, but the CSSB has a SPO that focuses only on that CSSB's support area. This ATP does not provide echelon specific role descriptions for multi-echelon duty positions.

Field Feeding Operations

The food advisor is the food operations subject matter expert for field feeding and class I. Food advisors provide technical supervision over internal food service activities and advises the commander on feeding operations, available feeding options, and the service capability. The food advisor coordinates with DL A, the Joint Culinary Center of Excellence, veterinary personnel, and contracting officers to acquire required menu components and helps the theater subsistence officer determine requirements, schedule issue and turn-in times, and decides the best methods for ration break down and distribution. Food advisors ensure available resources such as equipment, facilities, and personnel are adequate to receive, store, and issue class I supplies. Figure 3-1 depicts a notional battlefield field feeding operation.

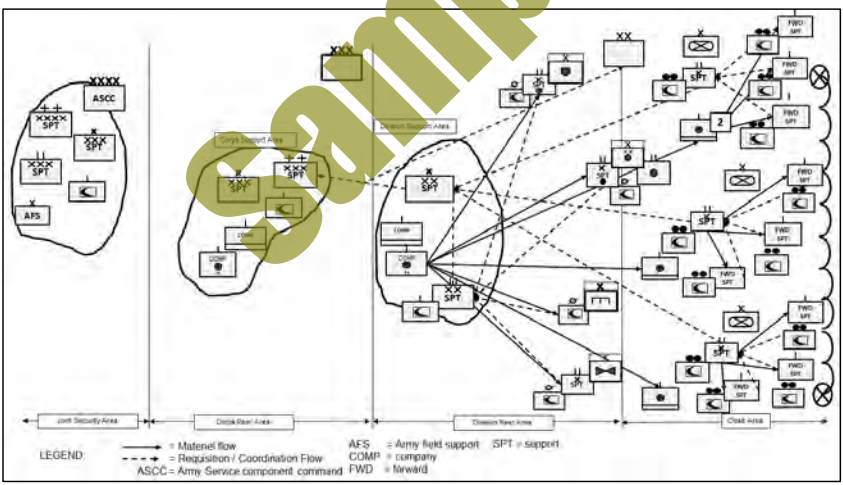


Figure 3-19. Field feeding operations.

Class V Materiel Management

The ammunition NCO advises the command and supported units on all ammunition issues. The ammunition NCO coordinates and controls use of class V supplies, recommends controlled supply rates to the logistics staff officer. The ammunition NCO monitors class V to ensure adherence, within operational considerations, to the established controlled supply rate and that resupply at rates that exceed the controlled supply rate are coordinated according to SOP. Figure 3-20 depicts class V materiel management.

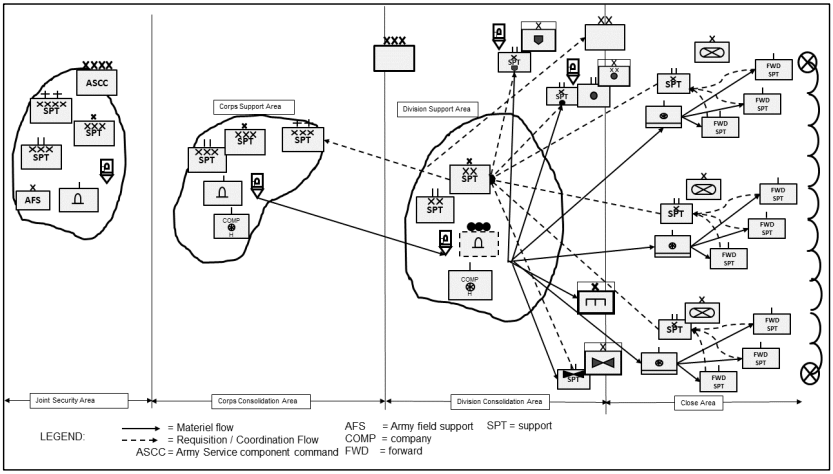


Figure 3-20. Class V materiel management.

Multi-Class Supply Support Activity

The following section describes the roles and responsibilities for supply personnel staffing multi-class SSAs. Figure 3-21 depicts multi-class commodity distribution management and materiel management. All supply classes entering the theater of operations through an air or seaport of debarkation entail theater-level SSA and central receiving point personnel sorting and packaging materiel for transport to the forward points of need. Transportation managers assign the most efficient and effective mode of transportation by the priority of the requesting unit's place within the priority of support, the priority of the item, and the type of cargo being moved. Often, materiel passes through specified areas, such as, trailer transfer points or central receiving points for sorting according to SSA for supply point distribution or supported unit for unit distribution.

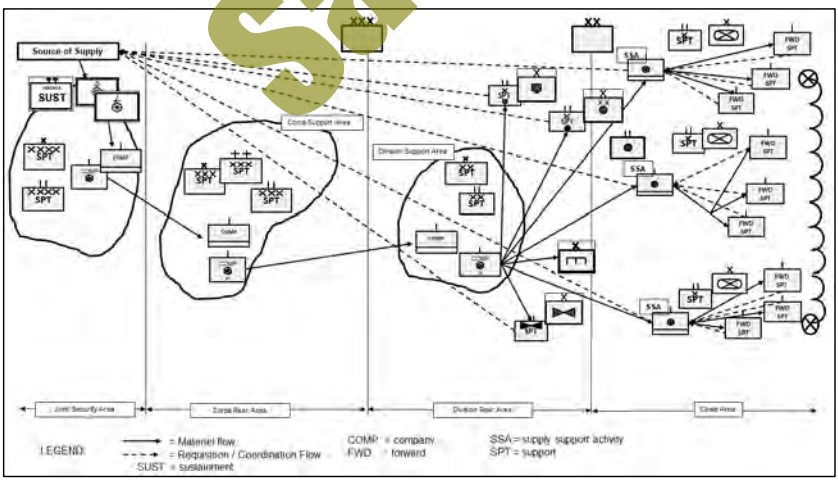


Figure 3-21. Multi-class distribution and materiel management

Class I supply support operations are included in this discussion because class I operations are a separate section of the current composite supply company's supply platoon.

(Sustainment Execution)
IV. Health Service Support

Ref: ADP 4-0, Sustainment (Jul '19), pp. 1-18 to 1-20 and FM 4-02, Army Health System (Nov '20).

The Army Health System is composed of both health service support and force health protection. Health service support is part of the sustainment warfighting function, and force health protection is part of the protection warfighting function. The principles of the Army Health System are conformity, proximity, flexibility, mobility, continuity, and control. These principles are defined in appendix A of FM 4-0. Health service support encompasses all support and services performed, provided, and arranged by the AHS to promote, improve, conserve, or restore the behavioral and physical well-being of Army personnel and as directed, UAPs.

Health Service Support

Health service support includes the following—

- **Casualty care, which encompasses a number of medical functions, to include:**
  - Medical treatment (organic and area medical support).
  - Hospitalization.
  - Dental care (treatment aspects).
  - Behavioral health/neuropsychiatric treatment.
  - Clinical laboratory services.
  - Treatment of chemical, biological, radiological, and nuclear patients).
- **Medical evacuation**
- **Medical logistics**

Medical Planning Tools

The Joint Medical Planning Tool, the Medical Planners' Toolkit, and the Medical Contingency Requirements Workflow are planning tools approved for calculation of medical requirements. The Joint Medical Planning Tool is a computer-based simulation tool developed by the Naval Health Research Center that models patient flow from the point of injury through more definitive care. The Medical Planners' Toolkit is a suite of tools developed to support the joint medical planning community. The Medical Planners' Toolkit combines the Patient Conditions Occurrence Frequency tool, the Casualty Rate Estimation Tool, and the Expeditionary Medicine Requirements Estimator into a single desktop application. The Medical Contingency Requirements Workflow is the authoritative source for estimating medical materiel contingency requirements by time and role of care.

See pp. 4-27 to 4-30 for discussion of Army Health Service (AHS) planning.

I. Casualty Care

Ref: ADP 4-0, Sustainment (Jul '19), pp. 1-18 to 1-19.

Casualty care encompasses all issues pertaining to the provision of clinical services for the treatment of Soldiers from the point of injury to successive roles of care. Casualty care includes the following sub-functions: medical treatment (organic and area medical support), hospitalization, the treatment aspects of dental care and behavioral health/ neuropsychiatric treatment, clinical laboratory services, treatment of chemical, biological, radiological and nuclear patients.

Casualty Care (Sub-Functions)

1. **Medical Treatment**
2. **Hospitalization**
3. **Dental Care**
4. **Behavioral Health**
5. **Clinical Laboratory Services**
6. **Treatment of CBRNE Patients**

Medical Treatment (Organic and Area Medical Support)

The medical treatment function encompasses Roles 1 and 2 medical treatment support. Role 1 medical treatment is provided by the combat medic or by the physician, the physician assistant, or the health care specialist in the battalion aid station/Role 1 medical treatment facility. Role 2 medical care provides greater resuscitative capability than is available at Role 1 and is rendered by the medical company in the BSB or by the medical company (area support), which is an echelon above brigade asset. These roles of care are provided by organic assets or on an area support basis from supporting medical companies or detachments. The area support function encompasses emergency medical treatment, advanced trauma management, routine sick call, emergency dental care, preventive medicine, and combat and operational stress control support.

Hospitalization

The Army's hospitalization capability consists of Role 3 combat support hospitals and hospital centers purposely positioned to provide support in the AO. At Role 3, the combat support hospital and hospital centers expand the support provided at Role 2 and are staffed and equipped to provide care for all categories of patients, to include resuscitation, initial wound surgery, damage control surgery, and postoperative treatment. Hospitalization capabilities deploy as modules or multiple individual capabilities that provide incrementally increased medical services in a progressively more robust AO. The hospitalization capability in the AO offers essential care to either return the patient to duty (within the theater patient movement policy) and/or stabilization to ensure the patient can tolerate evacuation to a definitive care facility outside the area of operations (this support is key to early identification and treatment of mild traumatic brain injuries).

Dental Care

Dental care provided as part of health service support includes far forward dental treatment, treatment of oral and dental disease, and early treatment of severe oral and maxillofacial injuries. Dental personnel may also be used to augment medical personnel (as necessary) during mass casualty operations.

Chap 4

Planning Sustainment Operations

Ref: ADP 4-0, Sustainment (Jul '19), (and adaptations from previous references).

Planning sustainment support of an operation is vital to mission success. Sustainment commanders and their planning staffs must coordinate and synchronize every stage of the planning process with the operational staff. They must also coordinate, synchronize and integrate the sustainment plan with joint and multinational partners to ensure a continuous linkage with strategic level providers.

Sustainment planning begins with the operational commander's intent and concept of operations. This single, unifying idea provides direction for the entire operation. Based on a specific idea of how to accomplish the mission, commanders refine the concept of operations during planning. They adjust it throughout the operation as subordinates develop the situation or conditions change.

See chap. 8, Joint Logistics, pp. 8-27 to 8-38 for discussion of planning joint logistics.

I. Sustainment Preparation of the Operational Environment (OE)

Sustainment preparation of the operational environment is the analysis to determine infrastructure, environmental, or resources in the operational environment that will optimize or adversely impact friendly forces means for supporting and sustaining the commander's operations plan. The sustainment preparations of the operational environment assist planning staffs to refine the sustainment estimate and concept of support. It identifies friendly resources (HNS, contractable, or accessible assets) or environmental factors (endemic diseases, climate) that impact sustainment.

Some of the factors considered (not all inclusive) are as follows:

- **Geography**. Information on climate, terrain, and endemic diseases in the AO to determine when and what types of equipment are needed. For example, water information determines the need for such things as early deployment of well-digging assets and water production and distribution units.
- **Supplies and Services**. Information on the availability of supplies and services readily available in the AO. Supplies (such as subsistence items, bulk petroleum, and barrier materials) are the most common. Common services consist of bath and laundry, sanitation services, and water purification.
- **Facilities**. Information on the availability of warehousing, cold-storage facilities, production and manufacturing plants, reservoirs, administrative facilities, hospitals, sanitation capabilities, and hotels.
- **Transportation**. Information on road and rail networks, inland waterways, airfields, truck availability, bridges, ports, cargo handlers, petroleum pipelines, materials handling equipment (MHE), traffic flow, choke points, and control problems.
- **Maintenance**. Availability of host nation maintenance capabilities.
- **General Skills**. Information on the general skills such as translators and skilled and unskilled laborers.

See pp. 1-29 and 2-12 for discussion of sustainment preparation of the battlefield from ADP 4-0. See pp. 4-5 to 4-10 for related discussion of logistics preparation of the battlefield.

III. Sustainment Planning Tools

Ref: ATP 4-42, Materiel Management, Supply, and Field Services Operations (Nov '20), pp. 4-8 to 4-9.

Using planning guidelines and planning factors, materiel managers determine the quantities of supplies and services needed to support an operation. *AR 700-8, Logistics Planning Factors and Data Management*,dictates policy and responsibilities for managing Army logistics planning data. Logistics planning data includes a variety of information, such as consumption rates, reference data, and planning factors. Strategic, operational, and tactical leaders use Army logistics planning data and factors to estimate the amount and type of efforts required for a given operation.

There are many strategic, operational, and tactical sources (manual and automated) for information that provide logistics and operational information that can be used as planning data. For example, at the tactical level GCSS-Army, collects consumption information in real-time and near real-time for all classes of supply managed in that system. Other information, such as bulk fuel consumption,water purification, and water consumption, comes from LOGSTAT reporting. At the strategic level and operational level DLA and USAMC collects consumption information in real-time and near real-time with ERP systems. Operations Logistics (OPLOG) Planner is the most widely used source for logistics data because it contains Army and joint planning factors for all classes of supply.

See p. 4-10 for further discussion of the Operations Logistics (OPLOG) Planner.

Units forecast each commodity using logistics planning factors. A planning factor (rate, ratio, length of time) is a multiplier used to estimate the amount and type of effort involved in an operation. Population based planning factors have three variables: weight of the commodity for a given period, population supported during the same period, and estimated number of days for the operation. Equipment based planning factors consider equipment usage profiles for each fuel burning LIN in each organization.

Class VIII planning is an integral function of the multi-functional Army Health System. Planning considerations include patient bed occupancy, projected patient movement and operating room utilization,status of blood and other medical stocks, and the commander's health service support priorities. Class VIII requirements are challenging to forecast because consumption is dependent on many operational and geographic variables and demands are not generated until forces are actually deployed (peacetime demands do not reflect casualty care). Medical planners use modelling tools such as The Joint Medical Planning Tool and the Medical Contingency Requirements Workflow to models patient flow and estimate medical materiel requirements based on patient conditions and associated medical treatment data.

Logistics Synchronization

Daily logistics synchronization meetings help to ensure successful supply support execution. Effective logistics synchronization meetings have appropriate participation for validating logistic status reports,synchronize resupply operations, and create shared understanding among all of the sustainment planners. Leaders use the logistics synchronization meeting to update a preformatted and practiced synchronization matrix.

The synchronization matrix is a tool for planning and synchronizing operations between maneuver and supporting units during an operation. Using the synchronization matrix throughout the planning process enables planners to think through the many details that ensure mission success. Planners spell out who is getting what (commodities and amount), when (time window), where (grid coordinates), and how (supply point, logistics release point, forward logistics element) on the synchronization matrix. It includes key activities of adjacent units, and may incorporate unit and commodity management data.

I. Logistics Preparation of the Battlefield (LPB)

Ref: ATP 4-93, Sustainment Brigade (Aug '13), app. A. See pp. 8-27 to 8-38 for additional information on planning joint and theater Logistics.

Logistics preparation of the battlefield (LPB) is a key conceptual tool available to personnel in building a flexible strategic/operational support plan. Logistics preparation of the theater of operations consists of the actions taken by logisticians at all echelons to optimize means (force structure, resources, and strategic lift) of supporting the joint force commander's plan. These actions include identifying and preparing ISBs and forward operating bases; selecting and improving LOC; projecting and preparing forward logistics bases; and forecasting and building operational stock assets forward and afloat. LPB focuses on identifying the resources currently available in the theater of operations for use by friendly forces and ensuring access to those resources. A detailed estimate of requirements, tempered with logistics preparation of the theater of operations, allows support personnel to advise the JTF/ASCC/ARFOR commander of the most effective method of providing responsive support.

See pp. 8-36 to 8-37 for related discussion of key joint logistics planning process outputs to include the theater logistics analysis (TLA), theater logistics overview (TLO), logistics estimate, and concept of logistic support (COLS).

I. Intelligence in Support of Logistics

The logistician uses intelligence to develop and execute the logistics support plan. Logistics intelligence is critical to the planning effort. Some of the areas that should be included in the intelligence analysis are listed below:

- Intent to engage in multinational operations and the extent of logistics support to be provided to non-DOD agencies and allies
- Available resources in the AO
- Conditions that alter consumption factors, such as severe climate changes or a requirement to provide support to allies
- Capabilities of local facilities to support reception and staging operations
- Foreign military logistics structure, national infrastructure capabilities, and political inclination to facilitate joint forces support
- Environmental, geographical, climatological, and topographical factors that may affect support operations
- Analysis of the capabilities of the host nation's and region's LOC's and capabilities to support the operation

Intelligence is equally critical for war and stability operations. Logisticians must have a complete logistics database or file to develop a solid plan for the LPB.

LPB is those actions (force structure, resources, and strategic lift) taken to reduce the cost of logistically supporting an OPLAN or a contingency plan. LPB minimizes or eliminates potential problems at the outbreak of hostilities, during deployment, and throughout the operations. It is a systematic tool used by logisticians and commanders to complete their mission. It becomes the basis for deciding where, when, and how to deploy limited resources (supplies, equipment, people, and money).

The ASCC of a combatant command will prepare supporting Army plans with logistics planners concentrating on the logistics plans. Once logistics planners know the contingency country or geographic region, they can begin to build a logistics

III. Running Estimates & Mission Analysis

Ref: Adapted from FM 6-0 (C2), Commander and Staff Organization and Operations (Apr '16) and ADP/ADRP 4-0, Sustainment (Aug '12).

Running Estimates

A running estimate is a staff section's continuous assessment of current and future operations to determine if the current operation is proceeding according to the commander's intent and if future operations are supportable (FM 3-0). Building and maintaining running estimates is a primary task of each staff section. The running estimate helps the staff provide recommendations to commanders on the best course of action to accomplish their mission. Running estimates represent the analysis and expert opinion of each staff section by functional area.

See pp. 2-20 to 2-21 for related discussion of refining plans and estimates.

Mission Analysis

Mission analysis helps commanders to understand the situation to include their mission. This enables commanders to issue the appropriate guidance that drives the rest of the planning process. Commanders—supported by their staffs—gather, analyze, and synthesize information to orient themselves on current conditions in the AO. Such orientation helps commanders to better understand the relationships among the operational and mission variables. Mission analysis helps commanders understand the problem they have been called upon to resolve and how their units fit into the higher headquarters' plan.

During mission analysis, the staff conducts intelligence preparation of the battlefield and updates running estimates in relation to the new mission. The commander and staff analyze the higher headquarters' order to completely understand the higher headquarters commander's intent, mission, and concept of operations. They develop facts and assumptions about the upcoming operations and determine specified, implied, and essential tasks. They identify forces available for the mission, resource shortfalls, and any constraints placed on them from the higher command.

The logistician's input during mission analysis primarily comes from the logistics estimate. The logistics estimate is a continuous process that begins during mission analysis and is continually refined and updated through mission completion. The logistics estimate does not have a doctrinal format at the brigade level.

Mission analysis considerations feed information into the estimate process. The estimates are as thorough as time permits. Personnel/logistics estimates are kept current. As factors that influence operations change, new facts are developed and assumptions become facts or become invalid.

The duration of the mission analysis briefing may vary. It may be with only a few staff briefing the commander, or it may take be several days in the form of a conference that includes commanders, subordinate commanders, staff, and other partners.

See following pages (pp. 4-16 to 4-17) for a listing of suggested sustainment mission analysis considerations by element.

Refer to BSS6: The Battle Staff SMARTbook, 6th Ed. (Plan, Prepare, Execute, & Assess Military Operations) for discussion of mission analysis and running estimates. Additional related topics include the operations process, the three Army planning methodologies, integrating processes, plans and orders, mission command, rehearsals and after action reviews, and operational terms and military symbols.

Mission Analysis Considerations

Ref: Adapted from ADP/ADRP 5-0 and ADP/ADRP 4-0.

A comprehensive mission analysis briefing helps the commander, staff, subordinates, and other partners develop a shared understanding of the requirements of the upcoming operation. Time permitting, the staff briefs the commander on its mission analysis using the following outline:

- Mission and commander's intent of the headquarters two levels up
- Mission, commander's intent, and concept of operations of the HQs one level up
- Review of the commander's initial guidance
- Initial IPB products, including modified combined obstacle overlays and situation templates
- Civil considerations that impact the conduct of operations
- Specified, implied, and essential tasks (to include minimum essential stability tasks)
- Pertinent facts and assumptions
- Constraints
- Forces available and resource shortfalls
- Initial risk assessment
- Recommended initial information themes and messages
- Recommended initial critical commander's critical information requirements (CCIRs) and essential elements of friendly information (EEFIs)
- Initial intelligence, surveillance, and reconnaissance (ISR) plan
- Recommended timelines
- Recommended collaborative planning sessions
- Recommended restated mission

Sustainment Elements

I. Logistics

A. Supply

1. General Supply

a. Facts
- Classes I, II, III(p), IV, VI, VII, X, and water status
- Distribution system
- Critical shortages

b. Assumptions
- Resupply rates
- Host nation/multinational support
- Other

c. Conclusions
- Projected supply levels and status
- Shortfalls and critical sustainment risks/events

2. Class III (B)

a. Facts
- Class III(b) status
- Restrictions
- Distribution Systems
- Critical shortages

b. Assumptions
- Resupply rates
- Host nation/multinational support
- Other

c. Conclusions
- Projected supply status
- Projected distribution system
- Shortfalls and critical risks/events

3. Class V

a. Facts
- Class V status
- Distribution system
- Restrictions
- Critical shortages

b. Assumptions
- Resupply rates
- Host nation/multinational support
- Other

c. Conclusions
- Projected supply status
- Projected distribution status
- Shortfalls and critical risks/events

IV. The Concept of Support (para. 4a)

Ref: Adapted from FM 4-90.7, Stryker Brigade Combat Team Logistics (Sept '07) and related sources (ST 101-6, chap. 3 and app. C-G). See also p. 4-17.

After the commander selects a specific COA, the staff communicates this decision by publishing the operation plan/operation order (OPLAN/OPORD). The G4, with input from the other logistic staff elements (G1, G5, surgeon, finance and personnel officers, and the support command), will prepare paragraph 4 of the plan.

Paragraph 4a is the support concept. This concise, but comprehensive, paragraph tells the maneuver commander and his primary staff those critical or unusual logistic actions that will occur by phase or before, during, and after the battle to support the concept of the operation.

Additional subparagraphs can be used to provide more detailed sustainment information by functional area. Usually, these subparagraphs are omitted, and this detailed information is published as part of the service support annex to the plan. The G4 prepares this order with input from the other logistic staff elements. The G4 can also prepare a Sustainment overlay to show supported units' supply route locations and supporting logistic organizations. Finally, routine, doctrinal, or constant information is incorporated into the unit tactical standing operating procedures (TSOP) to avoid repetition.

I. Developing the Sustainment Concept

The logistician actively participating in the decisionmaking process facilitates the support concept's development. Specifically, during mission analysis, the Sustainment planner determines the units' current materiel and personnel posture before the operation begins. This, with the commander's priorities, determines which units and items of equipment should receive priority before the operation.

The wargaming and quantitative analysis portions of COA analysis highlight critical and/or unusual logistic requirements and determine support priorities during each phase of the operation. By its very nature, wargaming facilitates logistic synchronization with the concept of the operation.

There are numerous other information sources for the support concept:

- Commander's guidance and intent
- Concept of the operation
- Higher HQ support concept, service support order or plan (if applicable), and Sustainment overlay
- Maneuver control system screens and/or other locally generated status charts
- Lessons learned data and historical perspectives to view how others successfully, or unsuccessfully, supported other similar operations
- The unit's battle book

II. The Sustainment Overlay

The sustainment overlay is a graphic representation of the tactical array of support areas and units. Ideally, it accompanies copies of the OPLAN and/or OPORD distributed to subordinate HQ and is used as a graphic backdrop to the support concept briefing.

V. Army Health Service (AHS) Planning

Ref: FM 4-02, Army Health System (Nov '20), chap. 4. See also pp. 3-47 to 3-50.

I. Support to Decisive Action

Decisive action is the simultaneous combination of offense, defense, and stability or defense support of civil authority tasks. These tasks require versatile, adaptive medical support, and flexible leadership.

The traditional and primary Army Medicine mission is to conserve the fighting strength of the tactical commander. The Army Medicine rhythm of military operations is that of the operational commander. Casualties begin to occur immediately upon engagement with the enemy. Due to the necessity to perform lifesaving interventions for Soldiers suffering combat trauma within minutes of wounding or injury, AHS resources must be arrayed in close proximity to the forces supported. This also permits the AHS assets to rapidly clear the battlefield of casualties and enhances the CCDRs ability to quickly take advantage of opportunities which present themselves during the operation.

Army Health System planners must be included early-on in the planning cycle for tactical operations and must fully participate in rehearsals conducted by the operational Army being supported. Within noncontiguous operations, the linear array of AHS units will not always occur and AHS units must fully understand the various support relationships described in the OPORDs to ensure that a seamless continuum of health care is established and can be maintained.

The MEDEVAC plan for the tactical operation includes both rotary-wing air ambulances and ground ambulances. The preferred means of evacuation is the air ambulance; however its availability can be affected by air superiority issues and environmental factors such as visibility, winds, and dust. The evacuation plan must address the use of ground ambulances when feasible and/or the simultaneous use of both platforms.

II. Operational Variables (PMESII-PT)

As the operational environment (OE) is comprised of all of the factors, both military and civilian, that affect the conduct of military operations in an operational area, the medical commander must define how the different elements will impact on the concept of operations. The operational variables are a means for exploring and describing an OE that focuses on the human aspects of the environment. Commanders and planners can use political, military, economic, social, information, infrastructure, physical environment, and time (operational variables) to ensure all elements are considered. The operational variables are used by strategic planners in the development of plans and information may be broader than required for mission analysis at the tactical level, however, as medical issues often have a regional focus and may be the result of environmental,socioeconomic, political, and religious practices, it is essential for the AHS planner to consider the medical aspects of an operation on a much broader scale than the immediate AO. As the theater medical command, the MEDCOM (DS) provides this regional focus in support of the CCDRs theater engagement strategy.

See following pages (4-28 to 4-30) for listing and discussion of medical factors for consideration in relation to the operational variables.

> *In addition to FM 4-02 (Nov '20), Medical planners should refer to ATP 4-02.55, Army Health System Support Planning (Mar' 20). Refer also to the Joint Medical Planning Tool, the Medical Planners' Toolkit, and the Medical Contingency Requirements Workflow for calculation of medical requirements.*

Medical Aspects of the Operational Variables (PMESII-PT)

Ref: FM 4-02, Army Health System (Nov '20), table 4-1, pp. 4-2 to 4-5.

Table 4-1 provides medical aspects for consideration in relation to the operational variables and subvariables. This table is not an all-inclusive listing but does provide the AHS planner with some initial considerations.

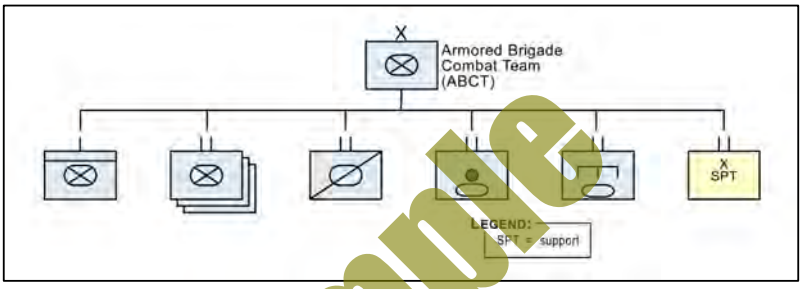
Variable	Subvariables	Medical aspects
Political	Attitude toward the United States. Centers of political power. Type of government. Government effectiveness and legitimacy. Influential political groups. International relationships.	Health status of population. Public health issues. Accessibility to health care. Nutritional status of the population and/or subgroups of the population.
Military	Military forces. Government paramilitary forces. Nonstate paramilitary forces. Unarmed combatants. Nonmilitary armed combatants. Military functions. • Command and control. • Maneuver. • Information operations. • Reconnaissance, security, and surveillance capabilities acquisition. • Fire capabilities. • Protection. • Sustainment. • Cyberspace operations and electronic warfare capabilities. • Special operations capabilities.	Development of military medical infrastructure. Level of education and training of military medical personnel. Trauma care capabilities. Medical evacuation (ground and air). Forward surgical/damage control surgical capabilities. Hospitalization capabilities. Disease and nonbattle injury rates. Identification and treatment of mild traumatic brain injuries and traumatic brain injuries. Dental care services. Blood supply and blood-banking capabilities. Organic medical assets. Area medical support capabilities. Availability of medical supplies and equipment. Medical equipment maintenance and repair. Medical logistics system to include medical gases and optical fabrication and repair. Behavioral health and treatment of combat and operational stress reaction capabilities. Rehabilitative and convalescent care capabilities to include prosthetics. Food inspection and laboratory analysis. Veterinary care for military working dogs and other government-owned animals and veterinary public health capabilities including zoonotic diseases and food protection infrastructure/programs.
Economic	Economic diversity. Employment status. Economic activity. Illegal economic activity. Banking and finance.	The economic base can affect health care for both the human and the animal populations in the nation. The types of injuries and health issues may vary significantly based upon whether it is an agricultural society or an industrialized nation and/or region. This affects the types of health care available including restorative and rehabilitative services and programs and the availability of health care to the populace. The gross national product and the per capita income of the population affect the availability of resources for the government to expend on public health concerns and health care in general. When the Army Health System planner examines the economic factors of a nation or region, it is important to determine what influence it has on how much money is expended in the health sector (both private and public) as this will affect health care, medical equipment, and pharmaceuticals availability.

Chap 5

Brigade Support

Ref: FM 4-0, Sustainment (Jul '19), pp. 2-54 to 2-56 and ATP 4-90, Brigade Support Battalion (Jun '20), chap. 1.

Brigades include both Brigade Combat Teams (BCTs), multifunctional, and functional brigades. BCTs, as notionally depicted in figure 2-32, are the Army's primary combined arms, close-operations force, and principal ground maneuver units of the division. BCTs have organic capabilities, including battalion-sized maneuver, field artillery, reconnaissance, and sustainment units. Each BCT has organic medical support for Roles 1 and 2 medical operations. The three types of BCTs are armored, infantry, and Stryker. BCTs normally operate as part of a division.



Ref: FM 4-0, fig. 2-32. Notional brigade combat team (with associated Brigade Support Battalion).

Brigade combat teams provide the division commander close combat capabilities to execute missions to achieve military objectives during engagements, battles, and campaigns. There are three standard types of BCTs – the armored brigade combat teams (ABCT), the infantry brigade combat team (IBCT), and the Stryker brigade combat team (SBCT). All six warfighting functions – command and control, movement and maneuver, intelligence, fires, sustainment, and protection – are organic to a BCT. Multifunctional support brigades reinforce brigade combat teams by providing capabilities that enable them to fight as formations: sustainment, field artillery, maneuver support, protection, and aviation.

I. Brigade Support Battalion (BSB)

The **brigade support battalion (BSB)** provides logistics and medical support to a brigade combat team (BCT) and multifunctional support brigades. Brigade combat teams are the primary combined arms force that provide combat power to execute close combat during large-scale combat operations. The BSB is capable of employment across the range of military operations and in any environment. This chapter provides an overview of the BSB's role and describes how the BSB provides support to brigade combat teams and multifunctional support brigades. It is imperative for BSB commanders and staff to understand the BSB role and responsibilities within the overall combined arms approach to operations.

II. BSB Role, Core Competencies, & Functions

The BSB is the most important sustainment organization in the Army. It supports the brigade combat team and the other brigade formations that constitute the majority of close combat capability in the Army. The BCT area of operations is expansive and its

missions diverse. The BSB and its subordinate companies normally operate within the close area of the operational construct closer to the forward line of troops than any other battalion-sized sustainment organization. This places the BSB in operational environments that are highly lethal, rapidly changing, and extremely demanding. This operational environment (OE) requires frequent movement, strong protection, and perseverance. In all, success relies on disciplined leadership founded on mission command, well-trained troops that display strong resilience, and closely synchronized staff operations.

The role of a BSB is to provide sustainment support (logistics and medical support) to a BCT. The BSB core competencies are planning, synchronization, and execution of sustainment to support BCT operations. The BSB performs the following functions: distribution management and operations, transportation, supply support, field maintenance, and Role 2 medical care.

III. BSB Characteristics and Capabilities

The BSB is a multifunctional logistics battalion capable of operating at the tactical level to support a BCT. The BSB organic design and core competencies allow it to provide multi-class supply, field maintenance, and medical support. The BSB has a very broad span of control with ten subordinate companies, six of which operate in the other battalions' areas. The BSB has organic medical support capability, medical logistics, and medical operations personnel in the support operations (SPO) staff. It is dependent on the division sustainment support battalion (DSSB) for non-mobile class III(B) storage, light infantry troop transportation, and water treatment. These capabilities, when required, must be coordinated with the division sustainment brigade (DSB).

The BSB is organic to and is employed by the BCT. It operates in conjunction with other BCT battalions. The BSB commander executes command and control (C2) of BSB units based on mission orders issued by the BCT commander. BSB operations are based on and nested with the BCT concept of operations. Although the BSB collaborates closely with the DSB it does not receive mission orders from the DSB. The DSB may influence BSB activities in support of division priorities through the operations process but in all cases the BSB receives its orders from the BCT or other brigade it supports. The BSB commander maintains continuous dialog through command and staff channels with higher sustainment echelons (DSB, DSSB) in order to provide situational awareness and facilitate anticipation of future requirements.

The BSB is an expeditionary formation and deploys with the BCT unless otherwise directed by higher headquarters. The BSB in IBCTs is designed to deploy forces on short notice to austere locations and perform sustainment operations immediately upon arrival. Airborne BSBs participate in parachute assault operations. The BSB integrates joint, inter-organizational, and multinational capabilities as needed. The battalion is capable of sustaining the BCT across the range of military operations.

The BSB operates from a base or base cluster in the brigade support area (BSA). From this location the BSB executes C2 over its organic companies conducting sustainment support. The BSB distribution company, field maintenance company, and medical company operate in the BSA. These companies may be collocated with the BSB command post (CP), but during large-scale combat operations are tactically dispersed within the BSA in a way that facilitates sustainment operations, mutual support, and protection. The forward support companies (FSC) collocate with the combat trains command post and operate in close proximity with the supported battalions in the BCT close area. The FSC position capabilities in the BSA as part of field trains to expedite distribution support to the maneuver battalions.

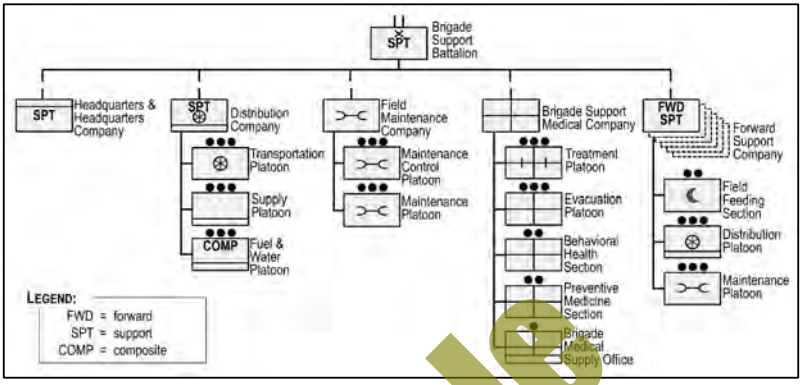
The BSB is responsible for protecting the BSA from level I and II threats using organic equipment.

See pp. 5-18 to 5-19 for further discussion of BSB protection and area security.

The BSB provides area support to units, not organic to the BCT, when tasked by the brigade commander. Area support is a task assigned to a sustainment unit directing it to support units in or passing through a specified location.

IV. BSB Organization in Brigade Combat Teams

The BSB is organic to and provides sustainment support to a BCT. BSBs in IBCT, SBCT, and ABCT differ in terms of specific equipment and manning, reflecting the characteristics of the BCTs they support.



Ref: ATP 4-90 (Jun '20), fig. 1-1. Brigade support battalion task organization.

BSBs have the capability to operate a supply support activity (SSA), operate a modular ammunition transfer point (MATP), perform field-level maintenance support and distribution operations, as well as providing medical support. BSBs that contain a medical company provide Role 2 medical care to all units in the brigade. FSCs provide distribution, field feeding, and field-level maintenance support to their supported battalions. Other capabilities that BSBs provide include:

- Field-level maintenance support to the BSB and the brigade headquarters.
- Field feeding support to the BSB headquarters company, distribution company, field maintenance company, and medical company.

The DSB assigned to a division can provide logistics capability not organic to the BSB or provide additional capacity to support the BSB. The DSB has an organic DSSB comprised of organic companies: a headquarters company, a composite supply company, a composite truck company, and a support maintenance company. The DSSB provides water treatment and storage, non-mobile petroleum storage, and troop transportation support to the BCT.

Support Battalions of Multi-Functional Brigades

A mix of multifunctional brigades support theater army, corps, and divisions. These supporting brigades include the field artillery brigade, maneuver enhancement brigade (MEB), combat aviation brigade (CAB), and sustainment brigade. Additionally, functional support brigades can include engineer, medical, military intelligence, and military police brigades. A mix of these functional and multifunctional brigades are task organized under corps and division control, enabling them to conduct LSCO.

Most support brigades are not fixed organizations with a set list of organic subordinate units. Each support brigade, except the CAB, is designed around a small base of organic elements to which a mix of units and additional capabilities are added based on mission variables.

A. Distribution Company

Ref: ATP 4-90, Brigade Support Battalion (Jun '20), p. 1-12.

The role of the BSB distribution company is to plan, direct, and supervise supply support operations and supply distribution to the brigade combat team or multifunctional brigade units.

BSB Distribution Company

- **Role**: The BSB distribution company plans,directs, and supervises supply support and distribution in support of a brigade combat team or multifunctional brigade.
- **Capability**: The distribution company manages the stockage of supplies for the brigade and provides distribution capability for all classes of supply.
- **Parent**: Brigade support battalion.
- **Command relationship**: Organic to a brigade support battalion.
- **Support relationship**: General support to BSB and brigade units.
- **Span of operations**: Brigade combat team area of operations.

The BSB distribution company is a multi-functional distribution and supply company operating as directed by the BSB commander. The BSB employs the distribution company in the BSA and its subordinate units operate throughout the supported brigade area of operations. The company executes a supply support activity that includes managing the daily receipt, storage, and issue of supply class I, II, III, IV, V and IX. The company also executes distribution, distribution integration, and transportation operations to ensure timely supply support to the BCT.

The distribution company commander, supported by subordinate leaders, uses troop-leading procedures to plan, prepare, and execute the BSB commander's intent. The company commander also uses the procedures to assess the effectiveness of the company plan and adjusts the plan as required.

A BSB distribution company has three platoons: a transportation platoon, a supply platoon, and a fuel and water platoon. The distribution company leadership (commander, executive officer, and first sergeant) is responsible for company support operations. These personnel ensure the distribution management tasks are executed effectively. The company commander may designate responsibility for the distribution management tasks between the executive officer and the first sergeant as necessary.

The platoon leaders and platoon sergeants of the supply and fuel and water platoons execute a portion of the 14 materiel management functions as required to ensure supply stocks are available and ready for distribution.

Materiel Management

Ref: ATP 4-90, Brigade Support Battalion (Jun '20), pp. 3-2 to 3-3.

Materiel management is the continuous situational understanding, planning, and execution of supply and maintenance capabilities to anticipate, synchronize, and direct all classes of supply to maximize combat power and enable freedom of action in accordance with the supported commander's priorities. Materiel management determines the materiel requirements of the BCT by class of supply, determines availability of the materiel from either on-hand or higher source-of-supply stocks, obtains the materiel, and coordinates the movement of the distribution of the materiel with distribution integration personnel. It identifies the commodity to be distributed, the quantity of that commodity to be distributed, and priority of distribution by unit. Material management addresses all internal and external logistical processes, information, and functions necessary to satisfy an operational supply requirement. Effective materiel management enables the

commander greater situational awareness informing decision making and enhancing control and flexibility. The BSB SPO, distribution company supply platoon, medical company (class VIII only) and the FSC distribution platoons execute materiel management functions. They perform materiel management simultaneously and continuously, with or without automation, during all decisive action tasks. The BSB can also integrate supply capability provided by joint services, allied partners, and host nations to the fullest extent possible within mission and operational variables.

Units execute materiel management through the following functions. These functions may be executed all or in part based on operational and mission variables.

- Supply planning (SPO).
- Requirements determination (SPO, medical company, FSC).
- Requirements validation (SPO, medical company, and FSC).
- Resupply (Distribution company, medical company, and FSC).
- Funds management (SPO).
- Storage (Distribution company, medical company, and FSC).
- Stock control (Distribution company, medical company, and FSC).
- Supply (Distribution company, medical company, and FSC).
- Maintenance.
- Asset visibility (SPO, distribution company, medical company, and FSC).
- Asset reporting (SPO, distribution company, medical company, and FSC).
- Retrograde of materiel (Distribution company, medical company, and FSC).
- Disposal (Distribution company, medical company, and FSC).

Materiel management functions are described in ATP 4-90, chapters 3 and 6.

Transportation Operations

Ref: ATP 4-90, Brigade Support Battalion (Jun '20), pp. 3-4 to 3-5.

Transportation is a logistics function that includes movement control and associated activities to incorporate military, commercial, and multinational motor, rail, air and water mode assets in the movement of units, personnel, equipment, and supplies in support of the concept of operations. Transportation operations are executed by the BSB SPO transportation personnel, distribution company distribution platoon, the medical company (class VIII only), and the FSC distribution platoon as shown in paragraph 3-28. Transportation allocates specific modes for specific commodities and coordinates distribution and routing to meet command priorities.

The transportation platoon leader(s) and platoon sergeant(s) execute both distribution integration and transportation operations functions as required to ensure supplies are assigned a transportation mode, route, and movement time. These functions are also discussed in ATP 4-90, chapters 3 and 6.

Distribution Management

Ref: ATP 4-90, Brigade Support Battalion (Jun '20), pp. 3-4 to 3-5.

The BSB commanders and staff integrate the distribution management process into the operations process to develop a distribution plan that is synchronized with operations and all warfighting functions. Failure to execute this integration leads to operational conflicts that hinder or prevent timely supply distribution. The commander and staff realize that support operations offices and the plans developed therein are fundamentally an integral part of BSB operations. Although the S3 and SPO are separate offices, they are inextricably linked during the operations process and MDMP. The BSB S3 and SPO collaborate continuously through the phases of planning, preparation, execution and assessment.

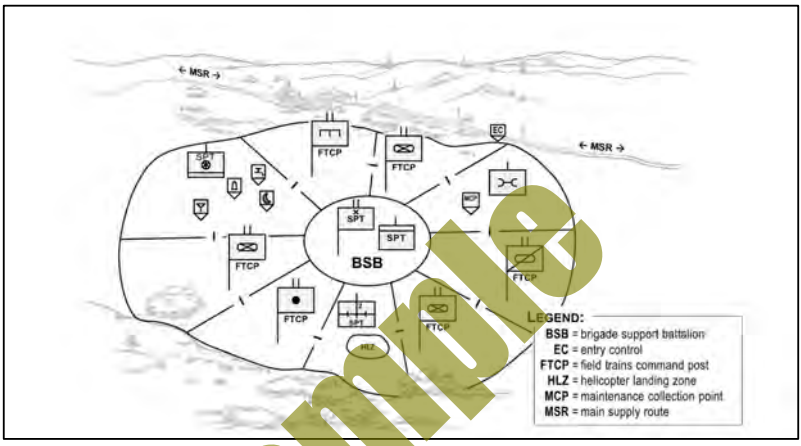
ATP 4-90, chapter 6 further describes distribution operations and other units involved in the distribution process to support the BCT.

II. Brigade Support Area (BSA)

Ref: ATP 4-90, Brigade Support Battalion (Jun '20), chap. 4.

I. BSA Operations

The BSA is a designated area in which sustainment elements locate to provide support to a brigade. The BSA typically encompasses a unit base or base cluster, landing/pickup zones, and field trains elements.



Ref: ATP 4-90, fig. 4-1. Example of a notional brigade support area (BSA) layout.

The BCT subordinate units that normally occupy a BSA are the BSB and the brigade engineer battalion. The brigade commander must determine which of these subordinate units is responsible for controlling the BSA. BSA control requires performing area security and stability tasks, employing and clearing fires, and controlling airspace. The unit designated to control the BSA will require BCT staff augmentation to control fires and airspace.

The BCT commanders designate close, deep, support, and consolidation areas to describe the physical arrangement of forces in time and space. The commander must designate a close area and a support area for every decisive action operation. They designate a deep area and consolidation area as required.

Support Area

A support area is the portion of the BCT commander's AO designated to facilitate the positioning, employment, and protection of sustainment assets required to sustain, enable, and control operations. BCTs assign a BSA to the BSB.

Consolidation Area

The consolidation area is the portion of the commander's area of operations designated to facilitate the security and stability tasks necessary for freedom of action in the close area and to support the continuous consolidation of gains. If the BCT AO is designated a division consolidation area the BSB still operates from a BSA. The focus of sustainment support over time is likely to shift from offensive and defensive operations to stability operations as enemy forces are defeated and the security situation improves.

II. BSA Establishment and Occupation

Ref: ATP 4-90, Brigade Support Battalion (Jun '20), pp. 4-2 to 4-3.

Site Selection

Many factors govern BSA site selection and all should be considered when establishing the BSA. The BSA is normally near or in close proximity to an MSR. It is large enough to allow adequate space for unit occupation and to execute sustainment operations but not too large to hinder effective security and control. If line-of-sight communications are required, the site terrain must be conducive to it.

Commanders evaluate the worthiness of a site with respect to mission accomplishment and then consider camouflage, concealment, and survivability. Ideally, the BSA is out of the range of the enemy's medium artillery. BSB planners consider trafficability and soil composition when selecting a BSA location.

Dispersion requirements often dictate the size of a site. A site has limited usefulness if it will not permit enough dispersion for survivability and effective operations. Support assets from a DSSB should be able to maneuver through the traffic pattern without causing unnecessary massing of vehicles.

The establishment and occupation of a BSA is deliberately planned and executed. During initial planning, the BCT staff and the BSB staff perform a map reconnaissance of the proposed BCT AO. During this reconnaissance, the staffs identify the area for the initial BSA, planned base location(s) in the BSA, and unit occupation of the base(s). All units that will occupy the BSA, to plan initial establishment and occupation of the BSA, use this information. Similar actions occur for BCT movement and subsequent BSA establishment and occupation.

Upon arrival at the BCT AO, the BSB uses quartering party operations for initial occupation. The quartering party is key to the initial establishment of the BSA. The purpose of the quartering party is to verify the site selection of the BSA and make limited preparations for receiving units that occupy the BSA. It consists of representatives from the BSB's S-3, S-2, and SPO sections. The quartering party is typically a small portion of each unit empowered by its commander to establish locations for personnel and equipment. Depending on units to be located in the BSA, the quartering party may also contain elements of the BCT CP, each maneuver battalion's field trains, and attached units located in the BSA. If a single base is used to contain all units in the BSA, the quartering party locates that base position. If a base cluster is used, the quartering party locates each base position. The arrival of the quartering party is the first opportunity to see the terrain and make adjustments to the BSA layout and defenses as necessary.

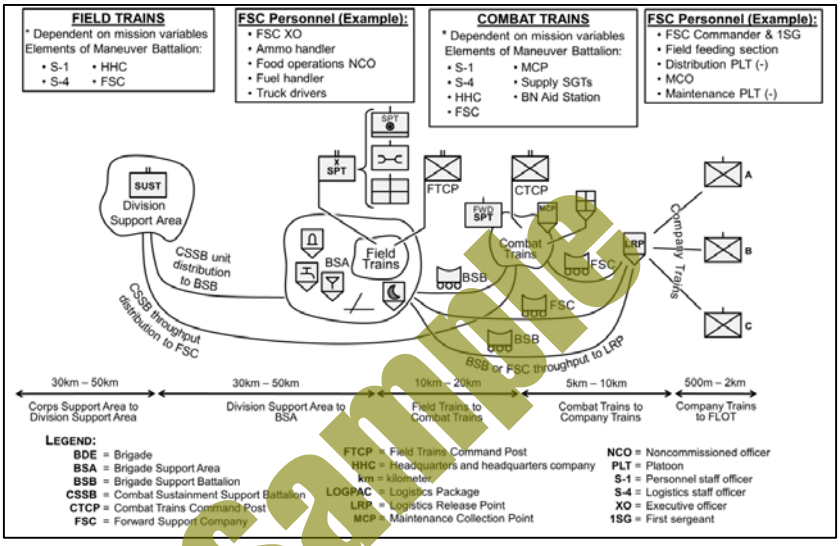
On arrival at the BSA site, the quartering party begins its priorities of work. Priority of work is a set method of determining the precedence of tasks when establishing a new location and conducting a defense of a location such as—the BSA. A unit's SOP will dictate the exact steps in that specific BSB's priorities of work. The commander may change priorities based on the situation and mission variables. Although listed in sequence, the BSB may perform several tasks in their priorities of work at the same time. An example priority of work sequence is—

- Establish local security.
- Check for CBRN contamination and unexploded ordnance.
- Position vehicles, crew served weapons, and Soldiers; assign sectors of fire.
- Establish communications.
- Position other assets, for example CPs.
- Designate final protective fires.

A. Field, Combat, and Company Trains

Ref: ATP 4-90, Brigade Support Battalion (Jun '20), pp. 5-2 to 5-4.

Figure 5-1 depicts an example of echeloned sustainment using field, combat, and company trains including templated distances between locations. The distances in the diagram are not prescribed distances but are depicted to display a typical range of distances commanders may expect and are for planning purposes only. Distances will vary from operation to operation and units must be located for maximum effectiveness. Sustainment and BCT planners and leaders consider operational and mission variables when locating units and the impact the distances have on sustainment support. Distribution platform capability and convoy security are considerations when determining distances.



Ref: ATP 4-90, fig. 5-1. Example of echeloned sustainment using field, combat, and company trains.

Field Trains

Each maneuver battalion/squadron normally task organizes a field trains element to provide a centralized location for controlling battalion sustainment support. The field trains consists of a field trains command post (FTCP), battalion sustainment personnel, battalion sustainment vehicles, and supporting FSC personnel located near the BSB headquarters. The FTCP serves as the battalion or squadron commander's primary direct coordination element with the supporting BSB in the BSA. The battalion HHC commander resides in the FTCP to provide command presence. FTCP may also contain a maneuver battalion/squadron S-4 representative, a maneuver battalion/squadron S-1 representative, and maneuver battalion/squadron supply sergeant or representative. Field trains provide direct coordination between the maneuver battalion and the BSB. The field trains are positioned based on mission variable considerations but are normally collocated on the BSB base. The maneuver battalion's HHC (company, battery, or troop) commander or designated representative (such as an XO or first sergeant) can control the field trains, which include battalion or squadron sustainment assets not located with the combat trains.

The FSC places personnel in the field trains that can facilitate the distribution integration functions to ensure timely distribution of all supply classes to the supported battalion.

Chap 6

Division, Corps, and Field Army Support

Ref: FM 4-0, Sustainment (Jul '19), pp. 2-43 to 2-54. When published, also refer to projected new references ATP 4-91, Division Sustainment and ATP 4-92, Corps & Field Army Sustainment (replacing current ATPs).

The effectiveness of the sustainment warfighting function is dependent upon actions of units and staffs at the operational and tactical levels. Understanding unit and staff roles and functions is essential to conducting sustainment operations.

I. Field Army

The Army constitutes a field army in theaters where large-scale combat is possible. Its primary purpose is to prevent and if necessary, prevail in large-scale ground combat against peer or near-peer adversaries. It also enables effective competition against such threats below the threshold of armed conflict. Field armies are organized, manned, trained, and equipped to command and control multiple corps-sized formations including U.S. Army and multinational corps, or a Marine expeditionary force operating within an area. The field army is best suited to serve as the JFLCC for large-scale ground conflict, but requires augmentation from the joint and multinational force to perform the JFLCC role successfully. It may also assume the ARFOR role depending on the JFC's command arrangements, and the situation.

For more information, refer to FM 3-94.

The field army focuses on the threat to successfully compete, deter, and if necessary, prepare for and transition to combat operations as a land component command. The field army is tailored in its capability and capacity as determined by mission and operational variables. To enable continuous shaping and the ability to transition quickly to prevention of conflict, a subordinate field army enables the theater Army to focus on its broad Title 10, Army support to other Services, and DOD EA responsibilities across the entire theater. The ASCC conducts administrative and select operational activities (theater opening, RSOI, Army support to other Services and CUL for tasks that include transportation, fuel distribution, intra-theater aeromedical evacuation, EOD, and logistics management) to allow the field army to focus on tactical operations.

A field army specifically tailored to mission requirements may be assigned to a JFC with an enduring operational requirement. Typically, a sub-unified command is established instead of a JTF when the military operation is anticipated to be enduring or protracted. In such cases, a field army would be appropriate as the Army component or ARFOR to the sub-unified command. The theater Army exercises ADCON over the field army and its subordinate Army forces, and it provides the field army and its joint force command with all Army Service functions. See FM 3-94 for additional information. Fundamentally the field army headquarters is staffed and equipped to perform three roles:

- Army component and ARFOR for a subordinate unified commander.
- Joint force land component headquarters (with augmentation) for large-scale combat operations.
- JTF headquarters (with augmentation) for crisis response and limited contingency operations.

An ESC may be attached to the field army. The ESC is the controlling headquarters for the integration and synchronization of sustainment operations at echelon. The

ESC staff supports the field army staff planning while conducting its own parallel planning for support requirements. The ESC advises the field army staff on issues regarding task organization, sustainment capabilities, and risk. In coordination with the field army G-4, it maintains the sustainment running estimate and take actions to mitigate shortfalls. The field army surgeon and the surgeon cells at each echelon work with their staffs to conduct planning, coordination, synchronization, and execution of AHS support in coordination with the MEDCOM (DS) as the theater medical command. The ESC and its subordinate task organized sustainment units normally have a GS relationship with units in their geographic area.

See p. 7-6 for more information on the ESC from ATP 4-94.

II. Corps

A corps is normally the senior Army headquarters deployed to a JOA. It is optimized to serve as a tactical command during large-scale combat. However, it may perform other roles under different conditions. The corps forms the nucleus for a JTF or joint force land component command to respond to situations exceeding a division's capability or one which requires joint force augmentation. The corps may serve as the ARFOR when it is the only U.S. Army corps assigned to an area. The ARFOR is the Army component and senior Army headquarters of all Army forces assigned or attached to a CCMD, subordinate joint force command, joint functional command, or multinational command (FM 3-94). Regardless of its role, the corps executes both operational and administrative responsibilities.

See facing page (fig. 2-27) for a notional task-organized corps.

The corps commands Army and multinational forces in campaigns and major operations. Its headquarters is organized, trained, and equipped to control the operations of two to five divisions, together with supporting theater-level organizations. In the event conflict escalates, large-scale combat operations may require the corps headquarters to operate under the command of a multinational force land component or subordinate to a field army equivalent established as part of a coalition.

For additional information, refer to FM 3-94.

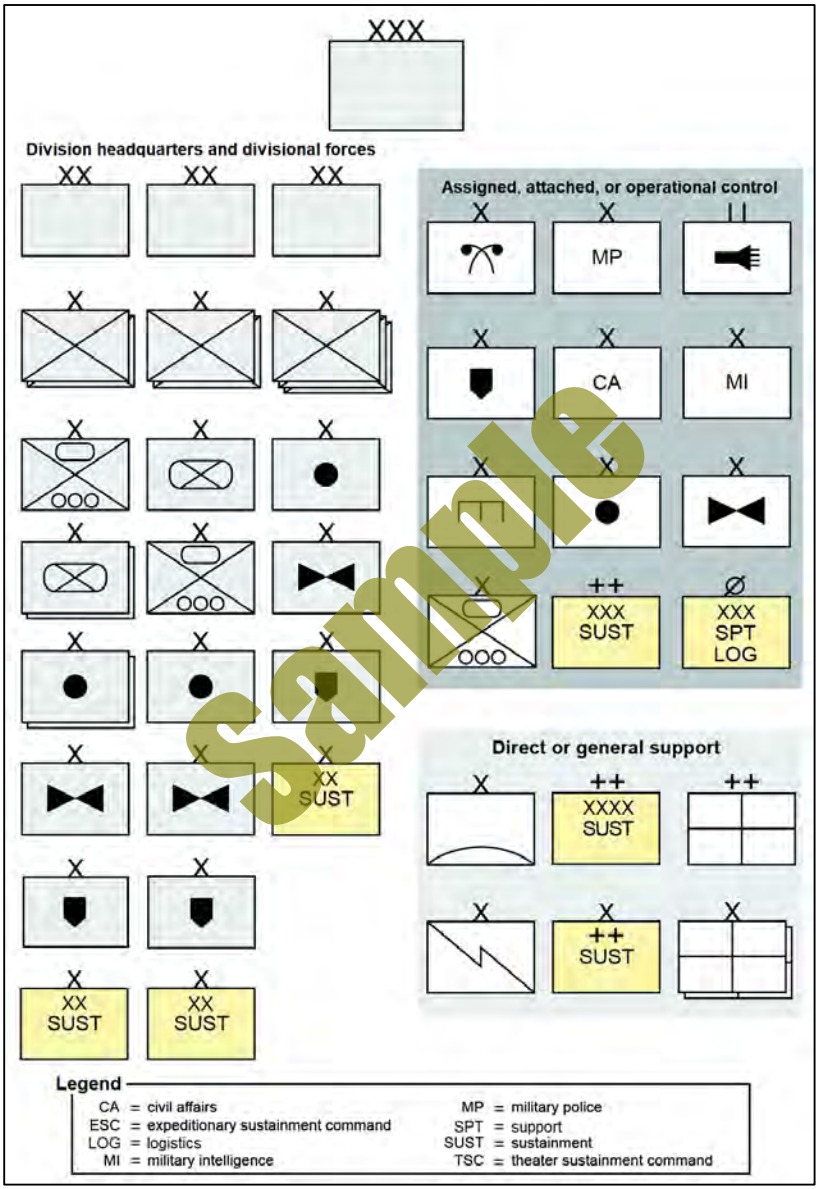
The corps also has administrative responsibilities when it is designated an ARFOR. When it serves as the ARFOR, the corps is responsible through the theater Army commander for the Service specific support of all Army forces in the JOA, as well as for providing any Army support to other Services with forces deployed in the JOA. The theater Army commander specifies the ADCON responsibilities of the ARFOR. CONUS corps have an AFSB in direct support to integrate and synchronize the delivery of all USAMC support. The AFSB provides a CLSE OPCON to the corps when it deploys for large-scale combat operations. This delivers USAMC capabilities at echelon in support of multi-domain operations to provide responsive support to the corps. Figure 2-27 provides a notional task organization of a corps.

The corps G-4 is responsible for developing the corps sustainment support concept that ensures Army forces are sustained throughout all phases of an operation. The G4 integrates the corps' sustainment staff estimates and annexes of the G-1, G-8, and Surgeon sections in the operations process. The G-4 is responsible for integrating the subordinate personnel services, logistics, financial management, and AHS capabilities. Examples of the corps sustainment cell coordination tasks are:

- Coordinates with the G-9 for HNS.
- Coordinates with the assistant chief of staff, intelligence (G-2), G-3, and engineer officer to requisition cataloged topographic foundation data and existing mission-specific data sets from the DLA.
- Synchronizes and integrates AHS support operations within the corps.
- Coordinates with the G-1 that develops and implements human resources policies and procedures.

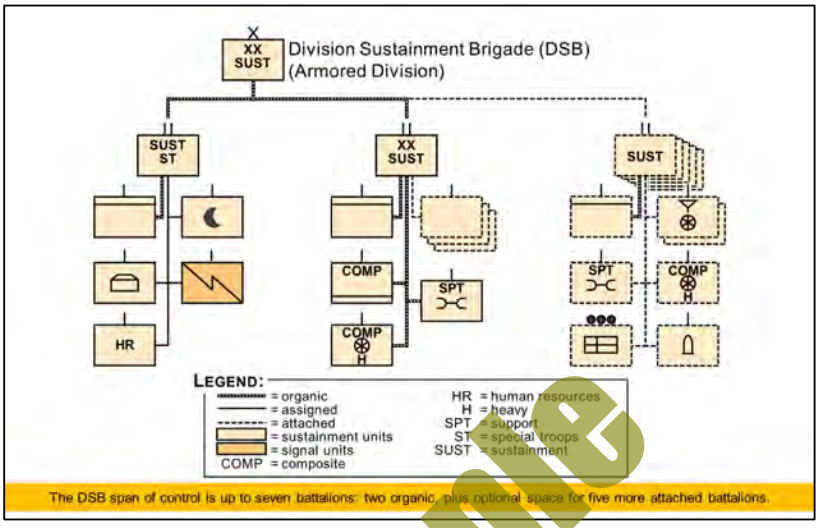
Notional Task-Organized Corps

Ref: FM 4-0, Sustainment (Jul '19), fig. 2-27. Notional task-organized corps.

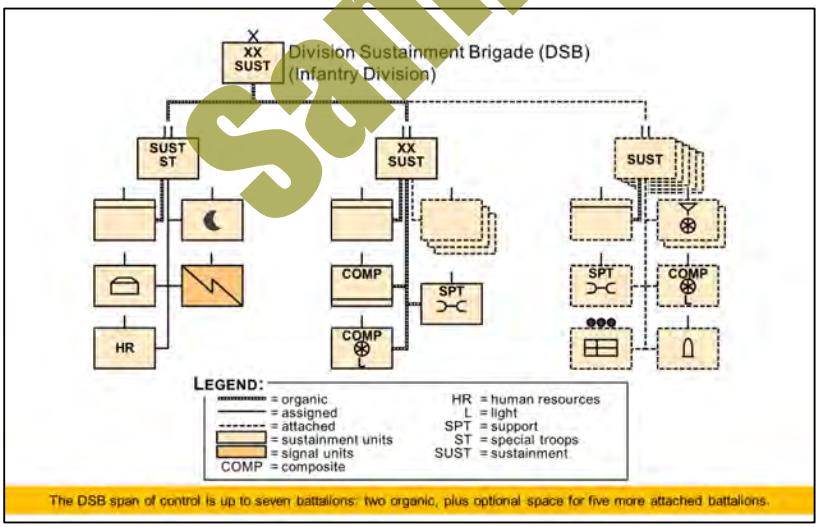


Notional Task-Organized DSBs

Ref: FM 4-0, Sustainment (Jul '19), pp. 2-48 to 2-49



FM 4-0, fig. 2-29. Notional task organized division sustainment brigade for an armored division.



FM 4-0, fig. 2-30. Notional task organized division sustainment brigade for an infantry division.

I. Sustainment Brigade

Ref: FM 4-0, Sustainment (Jul '19), pp. 2-43 to 2-54 and ATP 4-93, Sustainment Brigade (Apr '16), chap. 1.

The sustainment brigade is a multifunctional headquarters integrating and employing all assigned and attached units while planning and synchronizing sustainment operations. It is the Army's primary brigade level sustainment headquarters. Sustainment brigades are usually assigned or attached to a sustainment command. The sustainment brigade and its attached units will normally have a general support relationship with supported organizations.

The sustainment brigade executes logistics and personnel services functions associated with theater opening, sustainment, distribution, and theater closing missions. The sustainment brigade headquarters plans, coordinates, synchronizes, monitors, and controls sustainment operations within its support area.

I. Sustainment Brigade Capabilities

The sustainment brigade supports Army forces at the tactical and operational levels, providing support to brigade combat teams (BCTs), multifunctional and functional support brigades, deployable, self-contained division and corps headquarters, and other units operating in its assigned support area. Depending upon operational and mission variables, the sustainment brigade commands between three and seven battalions. Sustainment brigades are usually assigned or attached to a sustainment command. The sustainment brigade and its attached units will normally have a general support relationship with supported organizations.

The sustainment brigade is expeditionary, inter-operable and agile. These characteristics describe the attributes that the organization requires to be effective. The sustainment brigade is expeditionary as it can deploy task organized forces on short notice to austere locations and conduct sustainment operations immediately upon arrival. The sustainment brigade is inter-operable as it can task organize rapidly and integrate joint, inter-organizational and multinational requirements and capabilities. The sustainment brigade is agile as it can transition sustainment support across all decisive action tasks.

The sustainment brigade is task organized with units required to execute logistics and personnel services. Logistics includes; supply, maintenance, transportation, field services, distribution, and operational contract support. Personnel services are sustainment functions that fund and man the force.

The combat sustainment support battalion (CSSB) is the building block upon which the sustainment brigade capabilities are developed. The organization and operations of most functional logistics battalions are addressed in specific functional Army techniques publications. Organizational information about functional logistics battalions is available in unit authorization documents and from force design resources located at the Combined Arms Support Command Sustainment Unit One Stop website.

A financial management support unit and a human resources company may be attached or assigned to the sustainment brigade.

The sustainment brigade headquarters is designed to operate as a single command element without the ability to conduct split based operations. The sustainment brigade cannot create or operate a tactical command post (CP) without accepting risk in other areas.

The sustainment brigade headquarters plans and conducts base security and protection against level I threats. Level II and III threats require coordination with designated combat reaction forces. The sustainment brigade cannot be assigned an area of operations or manage terrain.

A task organized sustainment brigade is dependent on the following organizations:

- Sustainment brigade signal network support company for signal support.
- Area support medical company for Role 2 medical support.

II. Role and Functions

The role of a sustainment brigade commander and staff is to exercise mission command for task organized sustainment brigades. Mission command is the exercise of authority and direction by the commander using mission orders to enable disciplined initiative within the commander's intent to empower agile and adaptive leaders in the conduct of unified land operations (ADP 6-0).

The sustainment brigade executes logistics and personnel services functions associated with theater opening, sustainment, distribution, and theater closing missions. A function is a practical grouping of tasks and systems (people, organizations, information, and processes) united by a common purpose (ADP 1-01). Properly task organized, a sustainment brigade could be conducting theater opening tasks, sustainment and theater distribution tasks during the early phases of an operation or if it is the only sustainment brigade in the joint operations area (JOA). This same sustainment brigade, with a different task organization, can transition to conducting a theater distribution mission or sustainment mission.

III. Relationships

Commanders task organize the force to provide specific capabilities in support of mission requirements. They task organize the force by establishing command and support relationships. These relationships establish clear responsibilities and authorities between subordinate and supporting units. For every operation, the sustainment brigade commander and subordinate commanders must make every effort to ensure command and support relationships are clearly expressed in orders; their own and those of their higher headquarters and supported organizations. Doctrine sets general guidelines; mission orders will determine the details of the relationships.

Doctrinal relationships are defined and explained in ADRP 5-0, The Operations Process, and FM 6-0, Commander and Staff Organization and Operations.

Sustainment brigade commanders closely evaluate the outcome they wish to achieve and then decide which combination of command and support relationships to assign subordinate units. The relationships must accommodate the known situation and empower subordinate leaders to respond to the unknown. Changes in command relationships do not necessarily require changes in support relationships, especially if the nature of the support does not change. Simple command and support relationships increase the likelihood of success.

The sustainment brigade commander also establishes informal relationships. The informal relationship between the sustainment brigade and the division G-4 (assistant chief of staff, logistics) provides another source of information for the sustainment brigade commander to consider when determining appropriate command and support relationships and internal task organization. A description of the relationship between the division G-4 and sustainment brigade support operations (SPO) is in the organization discussion later in this chapter.

A. Command Relationships

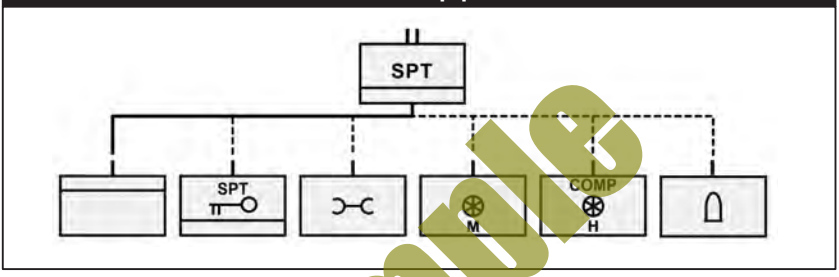
Command relationships define command responsibility and authority. Army command relationships are: organic, assigned, attached, operational control, and tactical

D. Combat Sustainment Support Battalion (CSSB)

Ref: ATP 4-93, Sustainment Brigade (Apr '16), chap. 3 and FM 4-0, Sustainment (Jul '19), p. 2-46.

The combat sustainment support battalion is a flexible and versatile headquarters that controls execution and synchronizes logistics support in a designated area of operations. The CSSB can be task organized with functional companies, teams and detachments that execute transportation (mode, terminal and movement control) operations, maintenance operations, ammunition operations, supply support activity operations, water operations, petroleum operations, aerial delivery operations and mortuary affairs. The CSSB is the building block upon which the sustainment brigade capabilities are developed.

Combat Sustainment Support Battalion



Ref: ATP 4-93, fig. 3-3. Notional combat sustainment support battalion.

The combat sustainment support battalion employs and controls up to seven company-sized assigned and attached units conducting logistics operations and support. The CSSB staff establishes a command post, executes the operations process and synchronizes logistics operations in support of mission requirements. The CSSB supports brigade combat teams, multifunctional support brigades, and other units operating in its assigned support area. The CSSB is task organized with units required to support logistics requirements. A task organized CSSB is dependent on the following organizations:

- The sustainment brigade for administrative support.
- Support maintenance company for field maintenance and recovery support.
- Area support medical company for Role 2 medical support.

The CSSB executes and synchronizes logistics functions as required to support units in its assigned support area. It is task organized to provide specific types of logistics functions support depending on its assigned mission. The CSSB usually has a general support relationship with its supported organization.

The CSSB is a logistics headquarters with a command group, coordinating staff and a headquarters company. The CSSB is task organized with logistics capabilities to support specific requirements. These logistics companies, platoons or detachments include maintenance, supply, transportation mode, terminal and movement control, mortuary affairs and field services.

The concept of support developed by the sustainment brigade may require CSSBs to change task organization frequently to meet mission requirements. Cascading concepts carry the top commander's intentions to the lowest levels, and the nesting of those concepts traces the critical path of concentration and priorities. When requirements change, the supporting unit may be released from its direct support relationship and the support or command relationship reassigned in orders.

CSSB Subordinate Organizations

Ref: ATP 4-93, Sustainment Brigade (Apr '16), pp. 3-5 to 3-6.

The CSSB headquarters and headquarters company is the only organic unit in the CSSB. The CSSB is task organized to meet mission requirements.

Ammunition

The CSSB may be task organized with ammunition units to support decisive action tasks. Ammunition capability includes the functions of receiving, storing, issuing and reconfiguring ammunition packages. An ammunition storage area is operated by one or more modular ammunition platoons with or without an ammunition company headquarters. Ammunition support is fully modular and platoons may be added or reduced from the organization based upon ammunition support requirements and mission variables. The CSSB ammunition staff coordinates receipt and issue of ammunition from the ammunition supply point. The ammunition staff has no materiel management responsibility for class V.

Refer to ATP 4-35, Munitions Operations and Distribution Techniques, for more information about ammunition organizations.

Maintenance

The CSSB may be task organized with support maintenance companies to support decisive action tasks. Maintenance capability includes the functions of wheeled vehicle repair, armament repair, allied trades, radio repair, computer and electronic equipment maintenance, ground support equipment repair and recovery assistance to units within its assigned support area. The SPO maintenance section provides priorities of effort to the support maintenance company, coordinates evacuation of equipment to sustainment maintenance level activities and provides COR support of monitoring the contract execution.

Refer to ATP 4-33, Maintenance Operations, for more information about field maintenance capabilities.

General Supply and Field Services

The CSSB may be task organized with supply and service units to support decisive action tasks. Supply capability include subsistence support, fuel storage and issue, water purification and storage and supply support activity (SSA) support to units within its assigned support area. The type and quantity of supply companies attached to the CSSB will vary based upon mission requirements and units supported. Quartermaster companies and/or platoons may be assigned to a CSSB to provide supported units with field services such as: aerial delivery, mortuary affairs, field feeding, laundry, shower, and water purification.

More information about quartermaster capabilities is in ATP 4-42, General Supply and Field Services Operations, ATP 4-43, Petroleum Supply Operations, ATP 4-44, Water Support Operations, ATP 4-45, Force Provider Operations and ATP 4-48, Aerial Delivery.

Transportation

The CSSB may be task organized with transportation units to support decisive action tasks. Transportation capability includes terminal, mode and movement control support to units within its assigned support area. The assigned mission will determine the number and type of truck companies attached to the CSSB.

Refer to ATP 4-11, Army Motor Transport Operations, for more information.

II. Theater Opening

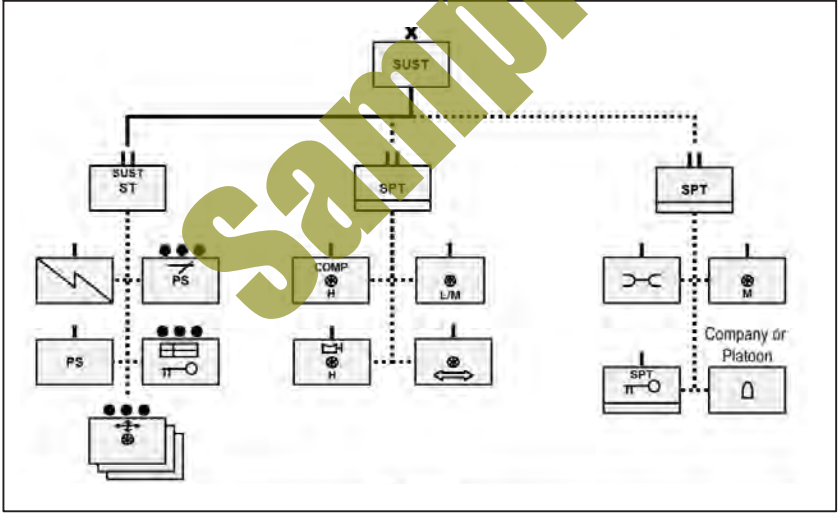
Ref: ATP 4-93, Sustainment Brigade (Apr '16), pp. 5-2 to 5-3.

Theater opening is the ability to establish and operate ports of debarkation (air, sea, and rail), to establish a distribution system, and to facilitate throughput for the reception, staging, and onward movement of forces within a theater of operations (ADP 4-0). Theater opening is a complex joint process involving the JFC and strategic and joint partners such as U. S. Transportation Command, DLA and the joint deployment and distribution operations center. The joint deployment and distribution operations center supports the geographic combatant commander's operational objectives by synchronizing and optimizing the interface of inter-theater and intra-theater distribution.

The sustainment command is responsible for planning and executing sustainment tasks enabling theater opening and RSOI. They also develop the theater sustainment concept of support.

When given the mission to support theater opening, the sustainment brigade is task organized with CSSB or functional logistics battalions. It performs the following tasks: establish in-transit visibility; conduct transportation management; support theater RSOI; conduct distribution and distribution management; support movement control, support expeditionary contracting efforts and establish initial theater sustainment.

Theater Opening



ATP 4-93, fig. 5-1. Notional task organized sustainment brigade conducting theater opening tasks.

In addition to the task organized sustainment brigade, a transportation brigade expeditionary is also in the JOA directing logistics over the shore or port opening operations. The sustainment brigade will become larger as the operational area and missions mature. The longer the operation lasts the more likely reserve component units are activated.

The sustainment command identifies initial theater opening requirements for contract and host-nation support. The deployed sustainment brigade works with the supporting contingency contracting team or battalion which assesses and acquires available HN

infrastructure capabilities and contracted support. Working together, units conducting theater opening functions set the conditions for effective support and lay the groundwork for subsequent expansion of the theater distribution system.

Port Opening

Port opening is a subordinate function of theater opening. Port opening is the ability to establish, initially operate and facilitate throughput for ports of debarkation to support unified land operations (ADRP 4-0). Throughput refers to the quantity of cargo and passengers that can pass through a port or a transportation terminal on a daily basis. This is not to be confused with throughput distribution, which is a method of distribution explained in ATP 4-11, Army Motor Transport Operations. The port opening process is complete when the ports of debarkation and supporting infrastructure are established to meet the desired operating capacity for that node. The port is the first node in the theater distribution system. Seaport opening requires units designed to support seaport of debarkation operations; such as harbor master and watercraft detachments.

Reception, Staging, Onward Movement, and Integration (RSOI)

RSOI is a joint task force operation heavily enabled by the sustainment community. The sustainment command controls the theater distribution system which includes transportation modes and transshipment and supply nodes. Nodes are locations within the distribution system where a movement requirement is originated and processed for onward movement.

- **Reception** is the initial step in RSOI and is defined as receiving units into the area of operation. Reception planning and execution is the responsibility of the commander assigned the responsibility for RSOI. Synchronizing transportation reception activities are critical to facilitating throughput at the ports of debarkation which involves mission command, movement control, and port operations. The sustainment brigade establishes theater gateway personnel accountability, performs departure/arrival airfield control group functions at the aerial port of debarkation, conducts motor transport operations and provides sustainment support for units supporting reception tasks.
- **Staging** is that part of the RSOI operation that reassembles and reunites unit personnel with their equipment and schedules unit movement to the tactical assembly area, secures or uploads unit basic loads, and provides life support to personnel. A staging base is a controlled area where unit reassembly may occur. There will be at least one staging base per seaport of debarkation /aerial port of debarkation pairing. The sustainment brigade provides supply, maintenance support and human resources support for units executing staging tasks. Units staging through a staging base will require some life support.
- **Onward movement** involves unit movement from ports to theater staging bases or forward to the tactical assembly area. The primary factors affecting onward movement are transportation capability and capacity, physical infrastructure, and protection. The sustainment brigade coordinates motor transport support for units without sufficient transportation lift to move themselves or mitigate degradation of tracked assets over long distances while conducting onward movement. Personnel and equipment reassembled as combat-ready units are moved to the tactical assembly area based on the JFC priorities.
- **Integration** is the synchronized transfer of capabilities into an operational commander's force prior to mission execution. The transfer may require interaction and familiarization among units and that arriving units meet certain standards before being completely integrated into the combat plan.

See chapter 9, Deployment & Redeployment, for further discussion of RSOI.

III. Protection Considerations

Ref: ATP 4-93, Sustainment Brigade (Apr '16), chap. 5 (protection responsibilities). The remainder of material in this section is retained from previous SMFLS editions (adaptations from FMI 4-93.2, Sustainment Brigade, Feb '09, app. B and JP 3-11).

Protection consists of those actions taken to prevent or mitigate hostile actions against DOD personnel (to include family members), resources, facilities, and critical information. Additionally, counter proliferation and consequence management actions associated with chemical, biological, radiological, nuclear, and high yield explosive weapons, which includes toxic industrial material and improvised explosive devices (IED) should be addressed.

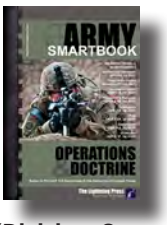
I. Responsibilities of the Sustainment Brigade

Sustainment brigade and CSSB commanders ensure the protection tasks are integrated into all aspects of operations to safeguard personnel, systems, and physical assets. Personnel includes combatants and noncombatants (contractors, host nation support and refugees). Commanders and staffs synchronize, integrate, and organize capabilities and resources throughout the operations process in order to preserve combat power and mitigate the effects of threats and hazards.

Sustainment commanders plan for all the supporting tasks of the protection warfighting function but often focus on coordinating security operations conducted to protect friendly forces, installations, and routes in their assigned support area. Sustainment brigade and CSSB commanders dedicate assets to protection tasks and systems based on an analysis of the operational environment, the likelihood of threat action, and the relative value of friendly resources and populations. Criticality, vulnerability, and recoverability are some of the most significant considerations in determining protection priorities. The list below includes some of the activities sustainment commanders consider as protection priorities:

- Base and base camp defense
- Critical asset security
- Node protection
- Response force operations. The sustainment brigade establishes a response force to protect the base it is occupying and coordinates for additional security.
- Lines of communication security. The sustainment brigade coordinates this with the terrain owner.
- Convoy security

Base camps may evolve from unit locations established during major combat or other military operations. These base camps may start out as a single unit or very small number of units that are capable of providing protection for their assets with organic and attached supporting capabilities. In these cases, the senior commander



The protection warfighting function is the related tasks and systems that preserve the force so the commander can apply maximum combat power to accomplish the mission. Commanders incorporate protection when they understand and visualize threats and hazards in an operational environment. Refer to AODS6-1 (w/ SMARTupdate 1): The Army Operations & Doctrine SMARTbook (Guide to FM/ADP 3-0 Operations & the Elements of Combat).

III. Protective Measures

Ref: Adapted from FMI 4-93.2, Sustainment Brigade (Feb '09), pp. B-8 to B-10.

Sustainment brigade units take several measures to reduce their vulnerability to enemy operations. These measures include dispersion, cover, concealment, camouflage, intelligence gathering, obstacles, and air and missile defense.

A. Dispersion

Sustainment brigade organizations disperse as much as possible throughout the assigned AO. Dispersion as a protective measure is balanced against the potential deficits to support operations and the base cluster defense system. Dispersion helps avoid catastrophic damage from air and mass destruction weapons. Even if a sustainment brigade unit is not the primary target, it may be attacked as a target of opportunity. The dispersion required depends on the following:

- Type of threat
- Terrain
- Defensibility

B. Engineer Support

Engineer survivability support will be important for the elements of the sustainment brigade. When available, it may be used for a variety of protection hardening measures in support of the sustainment brigade to include survivability (see FM 5-103, Survivability Operations) support and support to camouflage, concealment, and decoys. Engineers may also provide geospatial support to the sustainment brigade's protection efforts.

C. Cover, Concealment, and Camouflage

The enemy cannot target sustainment brigade resources that it cannot detect. Cover, concealment, and camouflage remain critical to protecting sustainment units, facilities, and supplies from enemy detection and attack. Cover includes natural and artificial protection from enemy observation and fire. When selecting sites, advance parties consider the type of cover available. Concealment includes natural or artificial protection from enemy detection. Sustainment brigade units use concealed ingress and egress points and halt locations within support locations. Camouflage consists of using natural or artificial objects or tactical positions to confuse, mislead, or evade the enemy.

D. Obstacles

Obstacles slow, impede, or channel enemy movement and incursion. They buy time until reaction forces can deploy or a response force can arrive. Effective use of obstacles involves sound counter-mobility planning and early warning. Obstacles in urban environments are as important as in the field. Strategically placed obstacles provide protection against terrorist access to buildings.

E. Air and Missile Defense

Air defense artillery (ADA) forces cannot provide dedicated air and missile defense (AMD) for all sustainment brigade assets in the AO. The commander positions brigade organizations to take advantage of coverage that available AMD forces provide. Using base clusters makes it possible for AMD units to cover more Brigade assets than if units disperse throughout the AO, but reduces the benefits of dispersion. Brigade assets identified AMD priorities that do not receive dedicated support are positioned to take advantage of the coverage provided by AMD units protecting higher-priority assets.

Passive air defense operations include the means a unit uses to avoid enemy detection, along with measures to minimize damage when attacked. Sustainment brigade units use OPSEC to conceal their location from enemy visual and electronic surveillance. Elements within base clusters disperse as much as possible. Dispersal along with field fortifications and obstacles significantly reduce casualties and damage from air and missile attack.

Chap 7

Theater Support

Ref: FM 4-0, Sustainment (Jul '19), pp. 2-19 to 2-40. When published, also refer to projected new reference ATP 4-93, Theater Sustainment (replacing current ATPs).

I. Theater Army

The theater Army is the senior Army headquarters in an AOR, it consists of the commander, staff, and all Army forces assigned to a CCMD. Each theater Army (U.S. Army Africa, U.S. Army Central, U.S. Army Europe, U.S. Army North, U.S. Army Indo-Pacific Command, and U.S. Army South) has operational and administrative responsibilities. Its operational responsibilities include command of forces, direction of operations, and control of assigned operational areas. Its administrative responsibilities encompass the Service-specific Title 10 requirements for equipping, sustaining, and training forces; unit readiness, discipline, and personnel matters.

The theater Army serves as the ASCC of the GCC. It is organized, manned, and equipped to perform that role. The ASCC is the command responsible for recommendations to the JFC on the allocation and employment of Army forces within a CCDR's AOR.

Refer to FM 3-94 for additional information.

Theater Army tasks and functions include—

- Executing the CCDR's daily operational requirements.
- Opening the operational area (for example-JOA, area of operations, and theater of operations).
- Serving as a JTF or joint force land component for crisis response and limited contingency operations.
- Serving as the primary interface between the Department of the Army, Army commands, and other ASCCs.
- Exercising OPCON of deployed Army forces not subordinated to a JFC.
- Exercising ADCON of all Army forces operating within the AOR.
- Exercising OPCON of all joint forces attached to it as either a joint force land component headquarters or JTF headquarters, as required by the CCDR.

The theater Army main command post (CP) monitors current operations and conducts contingency planning and crisis action planning. The main CP conducts current operations as well and maintains a capability to employ an operational-level CP. As an ASCC, the theater Army prepares support estimates and outlines the responsibilities and requirements for maintaining access to and setting the theater where U.S. military presence is forward stationed or deployed. The theater Army executes many of these responsibilities through the TSC. The TSC is the Army's command for the integration and synchronization of sustainment in the AOR. The MEDCOM (DS) is also assigned to the ASCC. It is the theater medical command responsible for command and control, integration, synchronization, and execution of AHS support within the AOR. The MEDCOM (DS) commander coordinates with the ASCC surgeon (as the staff proponent with execution through the assistant chief of staff, operations (G-3) channels under the authority of the ASCC commander) to provide AHS support within the AOR. Key tasks and functions associated with the theater Army's role in sustainment include—

- Developing Army plans to support the theater campaign plan.
- Tailoring Army forces for employment in an AOR.
- Prioritizing personnel replacement fill for the theater.
- Setting the theater for the execution of strategic plans.
- Controlling RSOI for Army forces in an AOR.
- Providing Army support to other Services (transportation, fuel distribution, intra-theater aeromedical evacuation, explosive ordnance disposal (EOD), and logistics management).
- Providing support as directed by the CCDR to other unified action partners.
- Identifying sustainment capability gaps and determining how to fill those gaps, identifying funding sources, and acquiring, and distributing funds.
- Assigning the role of deputy commanding general (support) for the ASCC to the TSC when required.
- Managing theater ammunition.

The ASCC commander has the authority to assign command and support relationships to deployed theater enabling commands. The authority includes integrating and synchronizing capabilities (such as transportation, engineers, EOD, medical, and logistics) until later enabling commands arrive in theater.

II. Theater Sustainment Command (TSC)

The TSC is the Army's command for the integration and synchronization of sustainment in the AOR. The MEDCOM (DS) is also assigned to the ASCC. It is the theater medical command responsible for command and control, integration, synchronization, and execution of AHS support within the AOR. The TSC connects strategic enablers to the tactical formations. It is a theater-committed asset to each ASCC and focuses on Title 10 support of Army forces for theater security cooperation and the CCDR's daily operational requirements. The TSC commands assigned HRSCs and FMSCs. The TSC commander also commands and task organizes attached ESCs, sustainment brigades, and additional sustainment units. The TSC executes the sustainment concept of support for planning and executing sustainment-related support to the AOR for all the Army strategic roles (shape OEs, prevent conflict, prevail in large-scale ground combat, and consolidate gains).

See pp. 7-7 to 7-11 for further discussion of the TSC from ATP 4-94.

TSCs execute sustainment operations through their assigned and attached units. The TSC integrates and synchronizes sustainment operations across an AOR from a home station command and control center or through a deployed CP. The TSC has four operational responsibilities to forces in theater: theater opening, theater distribution, sustainment and theater closing.

The task-organized TSC is tailored to provide operational-level sustainment support within an assigned AOR. It integrates and synchronizes sustainment operations for an ASCC including all Army forces forward-stationed, transiting, or operating within the AOR. The TSC coordinates Title 10, Army support to other Services, DOD EA, and lead service responsibilities across the entire theater.

The TSC organizes forces, establishes command relationships and allocates resources as necessary to support mission requirements, and exercises command and control over attached sustainment forces. The TSC supports the ASCC sustainment cells with planning and coordinating theater-wide sustainment. The execution of sustainment is decentralized, performed by the HRSCs, FMSCs, ESCs, sustainment brigades, and other sustainment organizations. The medical logistics management center (MLMC) forward team collocates with the distribution management center (DMC) of the TSC or ESC to serve as the liaison to the MEDCOM (DS). MEDCOM (DS) is responsible for integrating and executing medical operations.

Chap 7

I. TSC/ESC (Mission, Roles, and Organization)

Ref: ATP 4-94 (FM 4-94), Theater Sustainment Command (Jun '13), chap. 2.

I. Theater Support Command (TSC)

The TSC is responsible for providing sustainment support for an area of responsibility. The ESC is responsible for providing sustainment support for a joint operations area or specified area of operations. The sustainment commands are task organized with sustainment brigades and other modular sustainment forces structure to accomplish the mission. The combination of these capabilities gives the sustainment commander the ability to organize and provide tailored support such as theater opening, theater distribution and sustainment support to forces, and the theater closing within an area of responsibility (AOR).

A. TSC Mission

The sustainment warfighting function is the related tasks and systems that provide support and services to ensure freedom of action, extend operational reach, and prolong endurance. The endurance of Army forces is primarily a function of their sustainment. Sustainment determines the depth and duration of Army operations. It is essential to retaining and exploiting the initiative. Sustainment is the provision of the logistics, personnel services, and health service support necessary to maintain operations until mission accomplishment.

TSC Operational Responsibilities

The TSC has three operational responsibilities to forces in theater:

1. **Theater Opening**
2. **Theater Distribution**
3. **Sustainment**

The mission of the TSC is to provide mission command for operational level logistics within an assigned AOR. The TSC is capable of planning, controlling, and synchronizing operational-level Army deployment and sustainment for the ASCC, joint force commander (JFC), or multi-national joint force commander. It provides a centralized sustainment mission command structure for the ASCC; and supports all phases of operations from phase 0 to phase 5.

The TSC executes its mission through human resource sustainment centers, financial management centers, and the use of modular forces, to include expeditionary sustainment commands (ESC), sustainment brigades, combat sustainment support battalions (CSSB), and other modular sustainment formations. Sustainment brigades, CSSBs, and functional sustainment units serve as the building blocks of the force structure designed to execute TSC missions within the theater.

As required by mission, enemy, terrain and weather, troops and support available, time available, and civil considerations (METT-TC), the TSC may extend its operational reach by deploying a single ESC or multiple ESCs or sustainment brigades into specified areas of operations (AO)/joint operational areas (JOA) in order to more effectively provide responsive support to Army forces. ESCs provide mission command for theater opening, theater distribution, and theater sustainment on an area basis within and between specified AOs/JOAs.

1. Theater Opening

Theater opening is the ability to establish and operate ports of debarkation (air, sea, and rail), establish a distribution system, and to facilitate throughput for reception, staging, and onward movement and integration of forces within a theater of operations (ADP 4-0).

Sustainment brigades and multi-functional CSSBs will attach to the TSC or ESC based on mission requirements for theater opening operations. Sustainment brigade's tasked with theater opening execution may be augmented with additional personnel. The augmentation elements provide the sustainment brigade with additional manpower and expertise to command, control and coordinate TO functions such as managing transportation assets, synchronizing RSOI operations, port operations, throughput, node and mode management, intermodal operations, and movement control. One of the first steps the TSC/ESC must take in theater opening is to establish a port to conduct initial sustainment operations. The transportation brigade (expeditionary) can be attached to the sustainment command to support terminal operations as part of the theater opening mission.

Port opening is a subordinate function of theater opening. Port opening is the ability to establish, operate and throughput forces, equipment, and supplies through a port(s) of debarkation (POD). The port opening process is complete when the POD and supporting infrastructure is established to meet the desired operating capacity for that node (ADRP 4-0).

See pp. 1-24 to 1-25 for further discussion from ADP 4-0 and pp. 6-24 to 6-25 from ATP 4-93.

Port Operations

Port opening requires functional units specializing in port of debarkation operations. Ports of debarkation operations are essential for the maximum throughput of personnel and equipment. They are the first node that sustainment arrives into theater. It is from these locations that sustainment and cargo enter their Service theater distribution system. Units to provide this functional expertise may include (but are not limited to) a Transportation Brigade (Expeditionary), Terminal Transportation Battalion, SDDC Transportation Battalion, Joint Task Force-Port Opening, Air Mobility Command Contingency Response Groups, Navy Cargo Handling Battalions, and Movement Control Teams.

See facing page for further discussion.

2. Theater Distribution

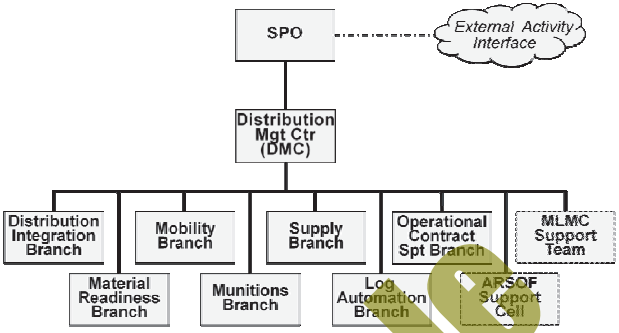
Distribution is the primary means to prolong endurance. Distribution is the operational process of synchronizing all elements of the logistic system to deliver the 'right things' to the 'right place' at the 'right time' (JP 4-0).

Theater distribution is the flow of equipment, personnel, and materiel within theater to meet the commander's mission. Theater distribution extends from the ports of debarkation or source of supply (within theater) to the point of need. It includes transportation management and movement control, warehousing, inventory control, order administration, site and location analysis, packaging, data processing, equipment accountability (materiel management), people, and communications.

TSC Support Operations Section

Ref: ATP 4-94 (FM 4-94), Theater Sustainment Command (Jun '13), pp. 3-4 to 3-5.

The SPO manages the theater distribution network linking the strategic and operational levels of logistics operations. The SPO, by exercising staff supervision over the DMC, maintains visibility, capacity, and control of the distribution system. Through the coordinated efforts of its internal branches, the DMC, exercises control using current and emerging information technologies that enable the DMC to accurately monitor support from the strategic to tactical level in near real-time.



The distribution integration branch (DIB) coordinates and synchronizes the movement of all personnel, equipment, and supplies into and out of the AOR. To do this job effectively, the distribution integration branch relies on coordination and information exchange between the supply and the mobility branches. A complete awareness of the logistics status of subordinate and supported units enables the DMC to optimize resources and task subordinate organizations in support of on-going and future operations.

The materiel readiness branch (MRB) provides staff supervision over maintenance issues impacting force readiness. It determines requirements and manages the maintenance capabilities for supported units of the command. Within the MRB, there are various supporting sections. The ground maintenance section, electronic maintenance section, and aviation maintenance section conduct theater maintenance trend analysis, and identifies equipment maintenance issues. The MRB will then coordinate resolution with appropriate elements of the TSC, ASCC, and Army Materiel Command (AMC).

The mobility branch, comprised of an air, land, and sea section, provide staff supervision of all allocated transportation assets and coordinates directly with the movement control battalion (MCB) assigned to either the TSC or ESC. The MCB coordinates all movement in the theater. The mobility branch also coordinates with joint and strategic partners (i.e. Joint deployment distribution operations center [JDDOC] and the Military Surface Deployment and Distribution Command [SDDC]) in order to synchronize intertheater and intratheater deployment and distribution efforts; and optimize intratheater distribution by employing all transportation modes available in theater.

The munitions branch provides staff supervision and visibility of conventional ammunition. It determines munitions requirements, manages supply capability and conducts materiel management for supported units of the command.

The supply branch provides staff supervision over all supply operations except Class V and Class VIII. It performs materiel management of supply (subsistence, general supplies, construction material, and repair parts) for a designated area of responsibility.

The log automation branch establishes the logistics automation plan, policies, operational functions, system readiness, and maintenance support for logistics automations systems and networks in support of subordinate units.

Chap 8

Joint Logistics

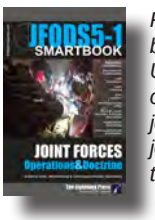
Ref: JP 4-0, Joint Logistics (Feb '19), chap. I.

Sustainment

Sustainment—one of the seven joint functions (command and control [C2], information, intelligence, fires, movement and maneuver, protection, and sustainment)— is the provision of logistics and personnel services to maintain operations until mission accomplishment and redeployment of the force. Joint force commanders (JFCs) are called upon to maintain persistent military engagement in an uncertain, complex, and rapidly changing environment to advance and defend US values and interests, achieve objectives consistent with national strategy, and conclude operations on terms favorable to the US. Effective sustainment provides the JFC the means to enable freedom of action and endurance and to extend operational reach. Sustainment determines the depth to which the joint force can conduct decisive operations, allowing the JFC to seize, retain, and exploit the initiative. Joint logistics supports sustained readiness for joint forces.

I. Joint Logistics

The relative combat power that military forces can generate against a threat is constrained by their capability to plan for, gain access to, and deliver forces and materiel to points of application. Joint logistics is the coordinated use, synchronization, and often sharing of two or more combatant commands (CCMDs) or Military Departments' logistics resources to support the joint force. To meet the wide variety of global challenges, combatant commanders (CCDRs), subordinate commanders, and their staffs must develop a clear understanding of joint logistics, to include the relationship between logistic organizations, personnel, core functions, principles, imperatives, and the operational environment (OE). This publication provides logistics guidance essential to the operational capability and success of the joint force. It focuses on the integration of strategic, operational, and tactical support efforts while leveraging the global joint logistics enterprise (JLEnt) to affect the mobilization and movement of forces and materiel to sustain a JFC's concept of operations (CONOPS). Additionally, it provides guidance for joint logistics; describes core logistics functions essential to success; and offers a framework for CCDRs and subordinate commanders to integrate capabilities from national, multinational, Services, and combat support agencies (CSAs) to provide forces properly equipped and trained, when and where required. The identification of established coordination frameworks, agreements, treaties, theater distribution, and posture plans creates an efficient and effective logistics network to support the JFC's mission.



Joint logistics planning must account for the adversary's threat to logistics. It must also identify and reduce logistics and operational risks. The challenge for future joint logistics is to adequately support globally integrated operations given the combination of five ongoing trends:

- Increasing logistics requirements caused by global demand for US joint forces and operations.
- Constrained and degraded resources, both overall and within the logistics force structure.
- The growing complexity of logistics operations.
- The proliferation of advanced antiaccess/area denial capabilities by adversaries that would degrade logistics capabilities and capacities.
- The increase of cyberspace threats to joint and partner logistics networks and mission systems.

Logistics integrates strategic, operational, and tactical support efforts to project and sustain military power across the globe at a chosen time and place, and represents a comparative advantage that provides multiple options to leadership and multiple dilemmas to potential adversaries. A relevant and resilient JLEnt remains essential to the pursuit of national interests through assurance, deterrence, and responding to a full range of contingencies.

II. Joint Logistics Environment (JLE)

Military leaders conduct globally integrated logistics operations in a complicated, interconnected, transregional environment (see Figure I-1). These operations involve the total force, which consists of the Active Component and the Reserve Component and Department of Defense (DOD) civilians and contracted support. Additional capabilities in the area of responsibility (AOR) or joint operations area (JOA) could also include a variety of military forces, other governmental organizations, nongovernmental organizations (NGOs), and multinational forces (MNFs). 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. Globalization, technology advancements, antiaccess/area denial, and flexible threats create a complex, ever-changing OE. The essential challenge is to support unified action by meeting increasingly demanding logistics requirements with constrained resources in a potentially contested environment. Globally integrated logistics is the capability to allocate and adjudicate joint logistics support on a global scale to maximize effectiveness and responsiveness, and to reconcile competing demands for limited logistics resources based on strategic priorities. Understanding the global environment is essential to plan, execute, synchronize, assess, and coordinate logistics operations.

Joint logistics takes place throughout the OE. Service components and CSAs provide the forces, materials, and capabilities while the JFC's staff focuses on integrating the capabilities with operations. Access to secure networks is necessary to sustain joint force readiness. Effective networks are used to find and access relevant information, facilitate collaboration, distribute data to forward deployed areas, increase performance and reliability, ensure the enterprise infrastructure for evolving DOD systems is resilient, and leverage partner nations' (PNs') capabilities.

See facing page for further discussion of the JLE operating framework.

Building Partnership Capacity (BPC)

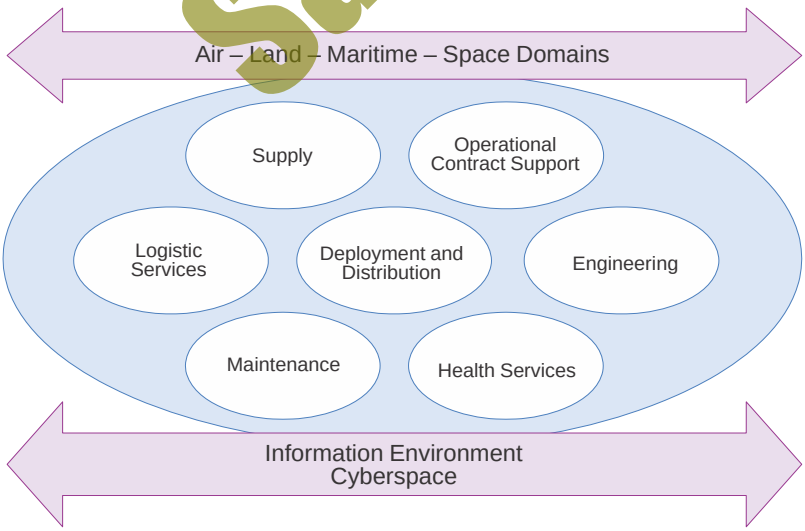
Complicated supply lines, finite resources, the challenges of providing robust logistics in austere environments, and shared lines of communications (LOCs) require the ability to establish and foster nontraditional partnerships. For some operations, logistics forces may be employed in quantities disproportionate to their normal military roles and in nonstandard tasks. Further, logistics forces may precede other military

Joint Logistics Environment (JLE) Operating Framework

Ref: JP 4-0, Joint Logistics (Feb '19), fig. I-1, p. I-3.

Military leaders conduct globally integrated logistics operations in a complicated, interconnected, transregional environment (see Figure I-1). These operations involve the total force, which consists of the Active Component and the Reserve Component and Department of Defense (DOD) civilians and contracted support. Additional capabilities in the area of responsibility (AOR) or joint operations area (JOA) could also include a variety of military forces, other governmental organizations, nongovernmental organizations (NGOs), and multinational forces (MNFs). 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.

Strategic Level Campaign Quality	Operational Level Coordinate, Integrate, and Synchronize	Tactical Level 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



Ref: Figure I-1. Joint Logistics Environment Operating Framework.

II. Coordinating & Synchronizing Joint Logistics

Ref: JP 4-0, Joint Logistics (Feb '19), chap. III.

This section describes the authorities, organizations, and controls that synchronize logistics in support of the JFC. *JP 3-0, Joint Operations,* identifies C2 as a joint function. Command includes both the authority and responsibility for effectively using available resources and the art of motivating and directing people and organizations to accomplish missions. Control is inherent in command. However, logistics assets will rarely fall under one command, which makes control, coordination, collaboration, synchronization, and management of joint logistics more challenging. To control joint logistics, commanders direct forces and functions consistent with a commander's command authority. It involves organizing the joint logistics staff, operational-level logistics elements, CSAs, and their capabilities to assist in planning and executing joint logistics. Designating lead Service, assigning agency responsibilities, and developing procedures to execute the CCDR's directive authority for logistics (DAFL) will assist in planning, integrating, synchronizing, and executing joint logistics support operations. While logistics remains a Service responsibility, there are other logistics organizations, processes, and tasks to consider when developing a concept of logistics support (COLS) to optimize joint logistics objectives.

I. Logistics Authority

Directive Authority for Logistics (DAFL)

CCDRs exercise authoritative direction over logistics, in accordance with Title 10, USC, Section 164. DAFL cannot be delegated or transferred. However, the CCDR may delegate the responsibility for the planning, execution, and/or management of common support capabilities to a subordinate JFC or Service component commander to accomplish the subordinate JFC's or Service component commander's mission. For some commodities or support services common to two or more Services, the Secretary of Defense (SecDef) or the Deputy Secretary of Defense may designate one provider as the EA (see Appendix D, "Logistic-Related Executive Agents"). Other control measures to assist in developing common user logistics are joint tasks or inter-Service support agreements. However, the CCDR must formally delineate this delegated authority by function and scope to the subordinate JFC or Service component commander. The exercise of DAFL by a CCDR includes the authority to issue directives to subordinate commanders, including peacetime measures necessary for the execution of military operations in support of the following: execution of approved OPLANs; effectiveness and economy of operation; and prevention or elimination of unnecessary duplication of facilities and overlapping of functions among the Service component commands.

DAFL of a GCC applies to the entire AOR and affects all subordinate components, commands, and direct reporting units in the AOR. Some CCDR responsibilities include:

- Issuing directives to subordinate commanders, including peacetime measures necessary for the execution of military operations, in support of the following: execution of approved OPLANs, effectiveness and economy of operation, and prevention or elimination of unnecessary duplication of facilities and overlapping of functions among the Service component commands.

C. Joint Logistic Boards, Centers, **Offices, and Cells**

Ref: JP 4-0, Joint Logistics (Feb '19), app. B.

The CCDR may also establish boards, centers, offices, and cells (e.g., subarea petroleum office [SAPO], joint facilities utilization board [JFUB], joint mortuary affairs office [JMAO], operational contract support integration cell [OCSIC]) to meet increased requirements and to coordinate the logistics effort.

Strategic-level Boards, Offices, and Centers

Strategic-level joint logistic boards, offices, and centers provide advice or allocation recommendations to the CJCS concerning prioritizations, allocations, policy modifications or procedural changes.

- Joint Logistics Board (JLB)
- Joint Materiel Priorities and Allocation Board (JMPAB)
- Joint Transportation Board (JTB)
- Joint Logistics Operations Center (JLOC)
- Deployment and Distribution Operations Center (DDOC)
- Defense Health Agency (DHA)
- Contingency Basing Executive Council (CBEC)
- Global Posture Executive Council (GPEC)
- Medical Logistics Division
- United States Transportation Command, Office of the Command Surgeon (TCSG)
- Armed Services Blood Program (ASBP)

Operational Joint Logistic Boards, Centers, and Cells

Operational-level joint logisticians must provide advice and recommendations to the supported CCDR concerning prioritizations, allocations, or procedural changes based upon the constantly changing operational environment.

- Joint Logistics Operations Center (JLOC)
- Joint Deployment and Distribution Operations Center (JDDOC)
- Combatant Commander Logistic Procurement Support Board (CLPSB)
- Joint Requirements Review Board (JRRB)
- Joint Contracting Support Board (JCSB)
- Joint Environmental Management Board (JEMB)
- Joint Facilities Utilization Board (JFUB)
- Logistics Coordination Board
- Joint Movement Center (JMC)
- Theater Patient Movement Requirements Center (TPMRC)
- Joint Patient Movement Requirements Center (JPMRC)
- Joint Blood Program Office (JBPO)
- Joint Petroleum Office (JPO)
- Sub-area Petroleum Office (SAPO)
- Joint Mortuary Affairs Office (JMAO)
- Explosive Hazards Coordination Cell (EHCC)
- Joint Munitions Office (JMO)
- Operational Contract Support Integration Cell (OCSIC)

Geographic Combatant Commander (GCC) Option Selection and Design

Ref: JP 4-0, Joint Logistics (Feb '19), p. III-19 to III-21 and app. D.

JP 4-0, appendix E provides amplifying information detailing the joint logistics factors and enablers with regard to the staff and organization control options.

GCCs require visibility over the JLEnt to meet the command priorities. The factors below should be considered when the GCC is establishing the logistics control required by the JFC. These factors are not absolute nor all inclusive; but they do reflect the best practices observed in the field. These factors are applicable regardless of the control option selected by the GCC.

Centralized Joint Logistics Planning

This factor implies a capability to match joint logistics planning with the planning done during the execution of a mission.

Maintenance of Situational Awareness

This factor represents more than using radio signals and internet-based application data to track cargo movement (ITV). It involves elements such as the design and use of logistics situation reports and the building of ground truth in logistics input to the JFC's COP.

Adjudication of Conflicting Priorities

This factor is to have processes in place to identify conflicts when following the commander's priorities. For example, a reliable logistics input to the JFC's COP may provide the means to identify conflicts, and a fusion cell may provide the capability to adjudicate.

Timely Identification of Factors and Shortfalls

To meet this factor a process that links the logistics portion of the battle rhythm with the planning windows must exist.

Clear Understanding of Component Capabilities

This factor involves the building of databases that reflect current Service component and support agencies logistics capabilities. Fulfilling this factor may require liaison and physical presence of logisticians representing all appropriate Service components within the selected joint logistics control option.

Ability to Synchronize Components Capabilities

This factor matches the best capability, regardless of Service component, to the joint logistics need.

Integrated Logistics Processes

This factor is founded on the notion that the joint logistic staff comprehends the Service components logistic processes and uses this understanding to build the visibility required by the JFC to control joint logistics.

Integrated Distribution

This factor deals with the establishment of the JDDOC and its integration within the joint theater logistics construct. It maximizes the capabilities of the JDDOC to fill the seams between strategic and operational level deployment and distribution tasks. The JDDOC also strives to maximize and synchronize the use of common user land transportation and intratheater lift.

Cross Component Supply

This factor involves the establishment of CUL responsibilities and the processes required to achieve their execution.

GCC Option Selection and Design

Joint Logistics Factors	Enabled by
Centralized joint logistics planning	FC, LCB, CLPSB
Maintenance of situational awareness	FC, LCB, GCSS-J, logistics COP
Adjudication of conflicting priorities	GCSS-J, logistics COP, JDDOC, JRRB
Timely identification of requirement/shortfall	FC, LCB, LSM, CLPSB, battle rhythm
Clear understanding of component capability	FC, LCB, LSM, battle rhythm
Ability to synchronize component capabilities	FC, LCB, GCSS-J, logistics COP, LSM, battle rhythm, contract support
Integrated logistics processes	Logistics SOP
Integrated distribution	JDDOC, LSM, battle rhythm
Coordinated component supply	LSM, battle rhythm
Cross component asset visibility	GCSS-J, logistics COP
Improved capability to direct the process	FC, battle rhythm, CCDR directives

Staff

- Base–existing joint staff
- Authorized to coordinate and deconflict joint logistics issues
- Empowered to recommend in coordination with the J-3 preparation of fragmentary orders to direct logistic actions
- Augmented as required by the mission

Option Selection Considerations*

- Mission
- Most capable service component
- Geographic and physical infrastructure of the operational area

*Options are staff or organizational

Organizational

- May establish joint command for logistics using existing Service led logistics organization
- Augmented as required to provide joint perspective
- Operates with clear delineation of command relationships and authorities

Legend

CCDR	combatant commander	J-3	operations directorate of a joint staff
CLPSB	combatant commander logistics procurement support board	JDDOC	joint deployment and distribution operations center
		JRRB	joint requirements review board
COP	common operational picture	LCB	logistics coordination board
FC	fusion cell	LSM	logistics synchronization matrix
GCSS-J	Global Combat Support System-Joint	SOP	standing operating procedure

Ref: Figure III-2. Geographic Combatant Commander Option Selection and Design.

Cross Component Visibility

This factor refers to the ability for the Service components to see and understand assets available from other components.

Improved Capability to Direct the Process

This factor proposes the establishment of a decision-making process to direct logistics actions. These actions usually are directed in the form of further guidance to enhance the planning or assessment processes, or the publication of a FRAGORD to direct an action.

Designation of Contracting Construct

It is imperative that a detailed analysis of the OCS aspects of the OE be prepared to help shape COA development and determine the possible intended and unintended outcomes of OCS.

Chap 8

III. Planning Joint Logistics

Ref: JP 4-0, Joint Logistics (Feb '19), chap. IV.

Joint logistics planning provides the process and the means to integrate, synchronize, and prioritize joint logistics capabilities toward achieving the supported commander's operational objectives during all phases of plan development. This section is applicable to combatant command campaign plans (CCPs), subordinate campaign plans, campaign support plans, and contingency plans tasked in Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 3110.01, (U) 2015 Joint Strategic Campaign Plan (JSCP) (commonly referred to as the JSCP), or as directed by the CCDR. This section also addresses planning considerations, input and output products used by joint logisticians to create OPLANs and operation orders (OPORDs) that enable transition from peacetime activities to execution of orders. Focus is on the JPP in development of the theater logistics overview (TLO) as a segment of the CCP.

Joint logistics planning is conducted under the construct of joint planning and the JPP addressed in JP 5-0, Joint Planning. Joint planning consists of planning activities associated with joint military operations by CCDRs and their subordinate commanders in response to contingencies and crises. It transforms national strategic objectives into activities by development of operational products that include planning for the mobilization, deployment, employment, sustainment, redeployment, and demobilization of joint forces and supporting contractors. Joint planning occurs at multiple strategic national and operation levels using process, procedures, tactics, techniques, and facilitating information technology tools/applications/systems aligned to the Joint Operation Planning and Execution System (JOPES) and the Adaptive Planning and Execution (APEX) enterprise.

The theater logistics overview (TLO) segment of the CCP articulates the overarching logistic architecture of the GCC's AOR. It is the start point of subsequent JPP logistics planning for regional OPLAN development and other contingencies.

I. Planning Functions

Joint planning encompasses a number of elements, including four planning functions: strategic guidance, concept development, plan development, and plan assessment. Depending upon the type of planning and time available, these functions can be sequential or concurrent. Joint planning features detailed planning guidance and frequent dialogue between senior leaders and commanders to promote a common understanding of planning assumptions, considerations, risks, COA, implementing actions, and other key factors. Plans may be rapidly modified throughout their development and execution. This process involves expeditious plan reviews and feedback, which can occur at any time, from SecDef and the CJCS. The intent is to give SecDef and the CCDR a mechanism for adapting plans rapidly as the situation dictates.

Integrated planning coordinates resources, timelines, decision points, and authorities across CCMD functional areas and AORs to attain strategic end states. Integrated planning produces a shared understanding of the OE, required decisions, resource prioritization, and risk across the CCMDs. JFCs and component commanders need to involve all associated commands and agencies within DOD in their plans and planning efforts. Moreover, planning efforts must be coordinated with other US Government department and agency stakeholders in the execution of the plan to assure unity of effort across the whole-of-government. The integrated planning process is the way the joint force will address complex challenges that span multiple CCMD

AORs and functional responsibilities. Integrated planning also synchronizes resources and integrates timelines, decision points, and authorities across multiple GCCs to achieve GEF-directed campaign objectives and attain contingency end states.

Supported CCDR

The supported CCDRs lead integrated logistics planning for their problem sets, inclusive of all associated plans related to the logistics problem both intertheater and intratheater. As such, supported CCDRs have coordinating authority for logistics planning. They lead the logistics planning process with all supporting CCMDs to develop a common understanding of logistics requirements, synchronize logistics planning activities, identify problem set logistics resource requirements, and provide logistics supportability analyses (quantitative and qualitative), as well as risk and supportability assessments associated with the plans. The supported commander designates and prioritizes objectives, timing, and duration of the supporting action. The supported commander ensures supporting commanders understand the operational approach and the support requirements of the plan. If required, SecDef will adjudicate competing demands for resources when there are simultaneous requirements amongst multiple supported CCDRs.

Supporting Commander

Supporting commanders will ensure their logistics planning is sufficiently integrated and synchronized across the problem set. They assist the supported CCMDs' efforts to develop a unified view of the logistics environment and synchronize resources, timelines, logistics C2, decision points, and authorities. The supporting commander determines the forces, tactics, methods, procedures, and communications to be employed in providing support. The supporting commander advises and coordinates with the supported commander on matters concerning the employment and limitations (e.g., logistics) of required support, assists in planning for the integration of support into the supported commander's effort, and ensures support requirements are appropriately communicated throughout the supporting commander's organization.

A. Strategic Guidance

The primary end product of the strategic guidance function and an in-progress review (IPR) is an approved CCDR's mission statement for contingency planning and a commander's assessment (operational report-3 pinnacle command assessment) or commander's estimate for crisis planning.

B. Concept Development

During concept development, if an IPR is required, the CCDR outlines COAs and makes recommendations to higher authority for approval and further development. Products from concept development include an approved mission statement, preliminary COAs, and prepared staff estimates. The CCDR recommends a COA for SecDef approval in the commander's estimate. The SecDef's approved COA from a concept development IPR is the basis for CONOPS.

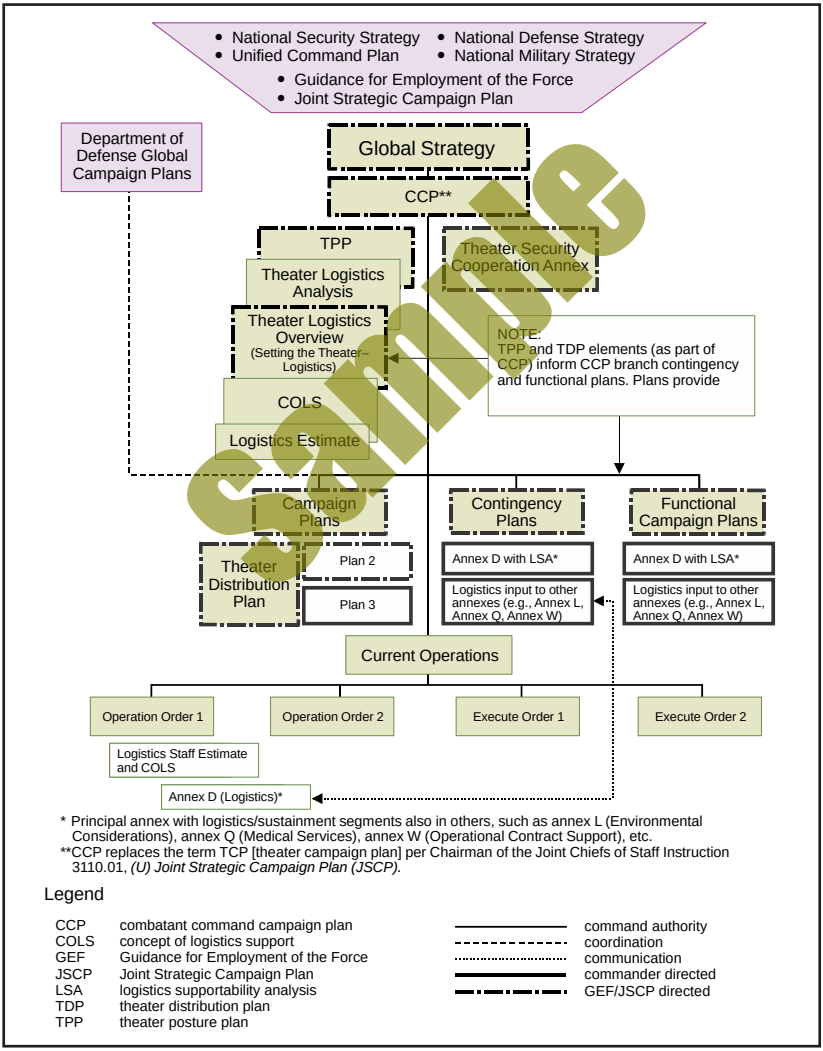
C. Plan Development

This function is used to develop a feasible plan or order that is ready to transition into execution. This function fully integrates mobilization, deployment, employment, sustainment, conflict termination, redeployment, and demobilization activities through all phases of the plan. When the CCDR believes the plan is sufficiently developed, the CCDR briefs the final plan to SecDef (or a designated representative) for approval. Plan development solidifies the CONOPS and the OPLAN, concept plan (CONPLAN), or OPORD and required supporting documents are prepared.

Logistics Planning Integration (Strategic Guidance, Plans, & Operations)

Ref: JP 4-0, Joint Logistics (Feb '19), fig. IV-1, p. IV-5.

Using the JPP framework for planning, Figure IV-1 reflects the cascading relationship from strategic guidance and tasking to planning and developing OPORDs with a focus on CCP and associated key logistics area products. These key logistics area products, TLO, logistics estimate, and COLS support the CCP and provide the basis for plan and OPORD development. These products are key to the GCC's conduct of missions throughout the AOR. Figures IV-2 and IV-3 (following pages) reflect the joint logistics planning process combined with elements of the joint planning activities, functions, and products depicted in Figure IV-1 (below).



* Principal annex with logistics/sustainment segments also in others, such as annex L (Environmental Considerations), annex Q (Medical Services), annex W (Operational Contract Support), etc.
**CCP replaces the term TCP [theater campaign plan] per Chairman of the Joint Chiefs of Staff Instruction 3110.01, *(U) Joint Strategic Campaign Plan (JSCP).*

Legend

CCP	combatant command campaign plan
COLS	concept of logistics support
GEF	Guidance for Employment of the Force
JSCP	Joint Strategic Campaign Plan
LSA	logistics supportability analysis
TDP	theater distribution plan
TPP	theater posture plan

command authority
coordination
communication
commander directed
GEF/JSCP directed

Chap 9

Deployment & Redeployment

Ref: ATP 3-35 (w/Chg 2), Army Deployment and Redeployment (Mar '15), chap. 1.

Force projection is the ability to project the military instrument of national power from the United States or another theater, in response to requirements for military operations. (JP 3-0) It is a demonstrated ability to alert, mobilize, rapidly deploy, and operate effectively anywhere in the world. The Army, as a key member of the joint team, must be ready for global force projection with an appropriate mix of combat forces together with support and sustainment units. Moreover, the world situation demands that the Army project its power at an unprecedented pace. The flexible and rapid deployment of Army forces with sufficient depth and strength to sustain multiple, simultaneous operations enables Army units to seize, retain, and exploit the initiative to gain and maintain a position of relative advantage in unified land operations to create conditions for favorable conflict resolution.

See following pages (pp. 9-2 to 9-3) for further discussion.

Deployment Phases

A **Deployment Planning**

B **Predeployment Activities**

C **Movement**
- **Fort-to-Port**
- **Port-to-Port**

D **Reception, Staging, Onward Movement, and Integration (RSOI)**

Ref: ATP 3-35, Army Deployment and Redeployment (Mar '15), chap. 1.

Deployment is composed of activities required to prepare and move forces, supplies, and equipment to a theater. This involves the force as it task organizes, tailors itself for movement based on the mission, concept of operations, available lift, and other resources.

The employment concept is the starting point for deployment planning. Proper planning establishes what, where, and when forces are needed and sets the stage for a successful deployment. Consequently, how the geographic combatant commander (GCC) intends to employ forces is the basis for orchestrating the deployment structure. All deployment possibilities must be examined as they dramatically influence employment planning. Deployment directly impacts the timing and amount of combat power that can be delivered in order to achieve the GCC's desired effects.

I. Predeployment Operations

Ref: ATP 3-35 (w/Chg 2)), Army Deployment and Redeployment (Mar '15), chap. 2.

The Army's effort to be more responsive begins at home station. Predeployment activities are actions taken to prepare forces for deployment and are not limited to the deploying unit, but include supporting units and the installation staff. Planning, document preparation, equipment readiness, and training are the foremost predeployment unit activities. This chapter discusses predeployment activities of the deploying unit as well as those in a support role.

I. Planning

GCCs use assigned forces to perform missions in their areas of responsibility. If additional forces are required to support an operation or contingency plan, the GCC requests forces via the Global Force Management allocation process. The Global Force Management allocation process begins with the supported GCC requesting the forces necessary to support the mission. The Joint Staff validates the submitted force requirements and assigns the appropriate joint force provider, Service force provider, or supporting combatant commander to develop sourcing recommendations. The Joint Staff, along with the Service Headquarters through the assigned Service components, and the joint force providers develop sourcing recommendations. The Joint Staff consolidates all recommendations and then staffs the recommendations with all Services, GCCs and Department of Defense (DOD) agencies. The sourcing recommendations are then presented to the Secretary of Defense. Following Secretary of Defense approval of the sourcing recommendations, the Chairman of the Joint Chiefs of Staff (CJCS) orders deployments via the published Global Force Management Allocation Plan and attached Annexes. The Global Force Management Allocation Plan directs force providers to provide forces to meet the GCC force and Joint Individual Augmentation requirements. Ordered force providers, Service Secretaries, GCCs with assigned forces, and Directors of DOD agencies implement the orders in the Global Force Management Allocation Plan Annexes through deployment orders. This process may cover a period of several months or be compressed to days or even hours for crisis action planning.

A. Deployment Planning

Contingency planning is typically used in those cases where the deployment and employment of forces is in response to anticipated operations. It is designed to produce a detailed operational plan for a potential event and relies heavily on a number of assumptions ranging from the threat to anticipated host nation support. Conversely, crisis action planning is accomplished in response to a time-sensitive, imminent threat that may result in an actual military operation. The plan is based on circumstances existing at the time planning occurs. In either contingency or crisis planning, prescribed procedures are followed to formulate and implement a response. Deployment planning is a key element of both contingency and crisis action planning and aims at delivering the right force, at the right place, and at the right time.

Planning for deployment is based on mission requirements and time. During deployment operations, supported combatant commanders are responsible for building and validating movement requirements, determining predeployment standards, and balancing, regulating, and effectively managing the transportation flow. Supporting combatant commands and agencies source requirements not available to the geographic combatant commander and are responsible for verifying supporting unit movement

data, regulating the support deployment flow, and coordinating during deployment operations. Each of these activities is an element of effective deployment planning. To facilitate these processes, the joint planning and execution community uses a common framework of directives, guidance, and decision support tools within JOPES.

See p. 9-20 for further discussion of JOPES and TPFDD development.

B. Movement Planning

To meet contingency support requirements, units develop movement plans and SOPs.

Unit Movement Plans

Movement plans define responsibilities, functions, and details for each part of a unit deployment from mobilization station or installation to reception in theater. There may be more than one plan required depending on the number of contingencies/operations plans (OPLANs) the unit must prepare to support. Movement plans are written in a five-paragraph OPLAN format.

Containerization must be addressed during deployment planning. The key to successfully using containerization operations to maximize shipping options is to identify units with high percentages of equipment compatible with containers.

The USTRANSCOM's component commands schedule lift against the unit line number (ULN) to meet the earliest arrival date (EAD)-latest arrival date (LAD) window. AMC publishes airflow schedules to call forward personnel and equipment to the APOE. These schedules are in GCCS. The call forward schedules are movement directives that specify when units must have their equipment at the POE to meet the available-to-load dates (ALD). Based on these schedules, deploying units and their respective commands backward plan movements to the POE to meet the ALD. Movement directives (if published) provide windows by mode for cargo arrival at the POE.

See following pages (9-10 to 9-11) for discussion on developing a deployment movement plan.

Unit Movement SOP

The unit movement SOP defines the day-to-day as well as alert functions. The SOP defines the duties of subordinate units/sections that will bring the unit to a higher state of readiness. These duties can be written in separate annexes that can be easily separated and issued to leaders for execution. Functions addressed in the SOP could include unit property disposition, supply draw, equipment maintenance, vehicle and container loading, security, marshalling procedures, purchasing authorities, unit briefings, in-transit visibility (ITV), and other applicable deployment activities.

Movement Binders

Units maintain movement binders containing the unit movement plan; unit movement SOP; appointment orders; training certificates; recall rosters; a current OEL; copies of load cards and container packing lists; prepared copies of transportation requests; convoy movement requests and special handling permits; and blocking, bracing, packing, crating, tie-down (BBPCT) requirements. The binder also serves as a continuity bridge from one UMO to the next.

Route and Location Reconnaissance and Rehearsal

Reconnaissance of the route to pre-designated POEs and of the POEs themselves should be an ongoing activity. It may be accomplished through passive means such as map surveillance or, optimally, through site visits. Walking the terrain at the power projection platform and designated port facilities allows commanders to understand space limitation, see choke points, survey facilities, understand the simultaneous nature of the operation, and visualize the deployment operation. Terrain walks can be useful as a unit level activity, but are more beneficial when they involve all participating and supporting units. Rehearsals validate deployment plans and permit commanders and unit movement officers to see possibilities and limitations. The physics of the operation can become plainly evident.

Unit Movement Dates

Ref: ATP 3-35 (w/Chg 2), Army Deployment and Redeployment (Mar '15), p. H-1.

Movement plans define responsibilities, functions, and details for each segment of a unit deployment from origin to reception in theater. There may be more than one movement plan required depending on the number of contingencies/OPLANS the unit must plan to support. Movement plans are written in five paragraph OPLAN format.

GCCS is the system used to manage deployments. Deployment related information is contained in the GCCS database and is accessible through ad hoc queries or via JOPES, a GCCS application. Units deploying under a JOPES OPLAN must increment their movements consistent with OPLAN TPFDD requirements, as delineated by ULNs. A ULN is a seven-character alphanumeric code that defines a unique increment of a unit. For example, it may be used to identify an advance party, the main body, and the equipment sealift and airlift requirements for any specific segment of the move. The Army command or other designated deploying unit higher headquarters assigns ULNs to units. It is essential that deploying units use the correct ULN for equipment to be scheduled for movement at the right time by the correct mode. This is the key to the JOPES database validation process. An incorrect ULN could overstate or understate airlift requirements and delay movements.

Unit line numbers (ULNs) available on JOPES OPLAN reports divide the unit by transportation mode, ports of embarkation or debarkation, and dates. Dates correspond to the established **C-day (day on which a deployment operation begins or is scheduled to begin)** for the designated plan TPFDD.

The unit movement is phased by the following dates relative to C-day:

1. Ready-to-Load Date (RLD)

The RLD is the date in the TFPDD when the unit will be prepared to depart its origin.

2. Available-to-Load Date (ALD)

The ALD is the TPFDD specified date when the unit will be ready to load on an aircraft or ship at the POE.

3. Earliest Arrival Date (EAD)

The EAD is the date specified by the supported combatant commander that is the earliest that a unit, a resupply shipment or replacement personnel can be accepted at a POD during a deployment. It is used with the latest arrival date to define a delivery window for transportation planning.

4. Latest Arrival Date (LAD)

The LAD at the APOD/SPOD is the date specified by the supported combatant commander that is the latest date when a unit, sustainment, or replacement personnel can be accepted at a POD and support the concept of operations. It is used with the earliest arrival date to define a delivery window for transportation planning.

5. Required Delivery Date (RDD)

The RDD is the date when a unit must arrive at its destination and complete offloading to properly support the concept of operation.

At the predeployment conference the unit requests a ULN for each element and/or separate movement. The Army Command or ASCC assigns ULNs to units. It is essential that deploying units use the correct ULN for equipment scheduled for movement at the right time by the correct mode. Using the correct ULN is key to the JOPES database validation process. An incorrect ULN could overstate or understate strategic and inter-theater lift requirements and delay passenger and cargo movements.

IV. Hazardous, Classified, and Protected Sensitive Cargo (Special Cargo)

Ref: ATP 3-35 (w/Chg 2), Army Deployment and Redeployment (Mar '15), app. J.

1. Hazardous Material (HAZMAT)

Packaging, shipping, handling, and inspecting of HAZMAT is mandated by US and international laws. These laws also apply to the use of intermodal containers and container equipment. This appendix provides an overview of doctrinal guidance and tactics, techniques, and procedures that are common to Department of Defense (DOD) and other US government agencies and organizations. This appendix also applies to the selection of standard American National Standards Institute/International Standards Organization (ANSI/ISO) commercial- or military-owned intermodal containers that meet the standards for shipment of Class I explosives and other HAZMAT.

Refer to MIL-HDBK 138 for compliance with container standards criteria.

HAZMAT must be properly prepared and documented IAW DOD Regulation 4500.9-R, Volume II and III; TM 38-250; and other service or command regulations. Documentation must include the total HAZMAT quantity and a certification statement stating that the HAZMAT is properly classified, described, packaged, marked, and labeled. Only specially trained individuals have authority to certify HAZMAT for transportation. Contact the Installation Transportation Officer (ITO) or Movement Control Team (MCT) for assistance in determining what certification requirements apply to each HAZMAT item being prepared for shipment. The deploying unit must ensure that:

- All ammunition and explosives are secured properly in containers and vehicles. SDDC issues authorization for ammunition to be in the port and aboard vessels.
- Provisions for DOT exemptions which may be used for shipment are followed. (For example, vehicle fuel tanks will be no more than three-quarters full when shipping under DOT Exemption 7280. Otherwise, fuel tanks must be only one-quarter full when shipping aboard a commercial vessel that is carrying civilians in addition to military cargo.)
- Fire extinguishers in racks designed expressly for them will not be removed from motor vehicles.
- Oxygen and acetylene tanks are labeled and marked with the UIC and shipment unit number and removed from the vehicle and placed on a separate pallet.
- Fuel tanks of trailer mounted equipment containing combustion engines are only 50 percent full.
- Five-gallon fuel cans, field cans, water heaters, gasoline lanterns, portable generators, blow torches, and similar equipment (in which combustibles other than diesel fuel are stored) are completely drained and cleaned before shipment. In a declared national emergency, 5-gallon cans can contain fuel.
- Battery boxes and covers are serviceable and positioned so as not to touch the terminals and to prevent arcing.
- Batteries of non-self-propelled equipment are disconnected and terminal ends protected from arcing and corrosion.
- When mode or other regulatory guidance requires, bulk fuel carriers are drained and purged and the proper placards affixed to them. A purge certificate should be prepared and kept available.
- Fueled vehicles shipped in closed freight containers have their battery cables disconnected and secured. Moreover labels should be affixed to the access doors of the container warning of a potential explosion when the doors are opened.

Refer to ATP 3-35, Table J-1, for references related to preparing and documenting hazardous materials.

2. Ammunition

Ammunition shipments are usually scheduled through military ammunition ports. Designated military ammunition ports serve the strategic purpose of routinely handling shipments of ammunition. To meet deployment requirements, ammunition may be moved through a commercial port. If the unit is deployed through a commercial seaport and must carry basic load ammunition with them, the SDDC manager for the port must first be notified of the intent to ship ammunition. The unit submits the following data through the ITO:

- DOD Ammunition Code.
- DOT proper shipping name.
- Total quantity and Number of packages.
- Total net explosive weight in pounds.
- Weight of each package in pounds.
- Cube of each package.
- United Nations identification number.
- Classification code consisting of hazard class and division number followed by compatibility group letter.
- Shipment configuration (to allow processing of DOD safety waivers and CG permits).

3. Classified Material

Classified material is cargo that requires protection in the interest of national security. The nature of classified cargo requires that shippers and transporters handle it in a way that it be identified, accounted for, secured, segregated, or handled in a special way to safeguard it. Detailed instructions are included in DTR 4500.9R. Do not identify classified cargo on the outside of the shipping containers.

When transporting classified material, enclose it in two sealed containers, such as boxes or heavy wrappings. Detailed instructions for packing classified material are contained in AR 380-5. Among its implementing instructions are the following excerpts from Chapter 8, AR 380-5: Classified information will be transmitted and transported only as specified in this Chapter 8, AR 380-5. Communications security information will be transmitted in accordance with AR 380-40. Special Access Programs material will be transmitted and transported in accordance with Appendix I of AR 380-5, AR 380-381 and applicable special access program procedure guides. Commands will establish local procedures to meet the minimum requirements to minimize risk of compromise while permitting use of the most effective transmission or transportation means.

4. Sensitive Cargo

Sensitive material is cargo that could threaten public safety if compromised. Sensitive cargo must be properly secured and identified to port personnel so sufficient security can be provided. Do not identify security cargo on the outside of the shipping containers. Detailed instructions are included in DTR 4500.9R. J-12. For sensitive cargo, units must adhere to the following:

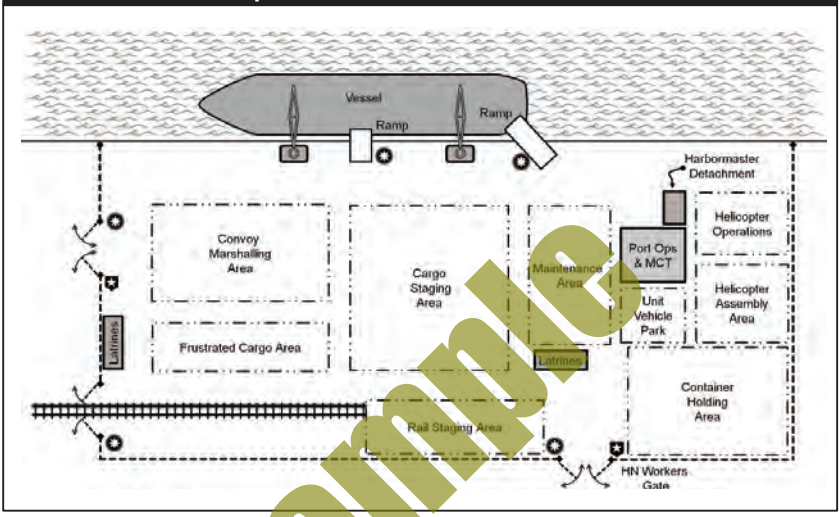
- Remove crew-served weapons from vehicles. Place them in containers that are sealed and secured with an approved device.
- Ensure packaging material is strong and durable enough to provide security protection while in transit.
- Secure containers, vehicles, or compartments with an appropriate locking device as directed by the installation security officer. Also, place a serial-numbered seal on the door. Enter the serial number on the shipment unit packing list.
- Identify sensitive items in the commodity code on the unit's OEL and UDL.
- Eliminate indications of sensitive items from outside of the container, vehicle, or compartment that it contains sensitive items. Identify this fact on the unit's OEL/UDL.
- Provide guards or escorts when shipping sensitive material by rail.

III. Seaport of Embarkation (SPOE)

Ref: ATP 3-35 (w/Chg 2), Army Deployment and Redeployment (Mar '15), pp. 3-2 to 3-4.
See p. 7-28 for discussion of SPOE responsibilities.

There are essential activities that occur at the SPOE during deployment operations as units prepare for shipment by strategic sealift. The tasks are performed by a number of DOD and Army units and ad hoc organizations.

Notional Seaport of Embarkation



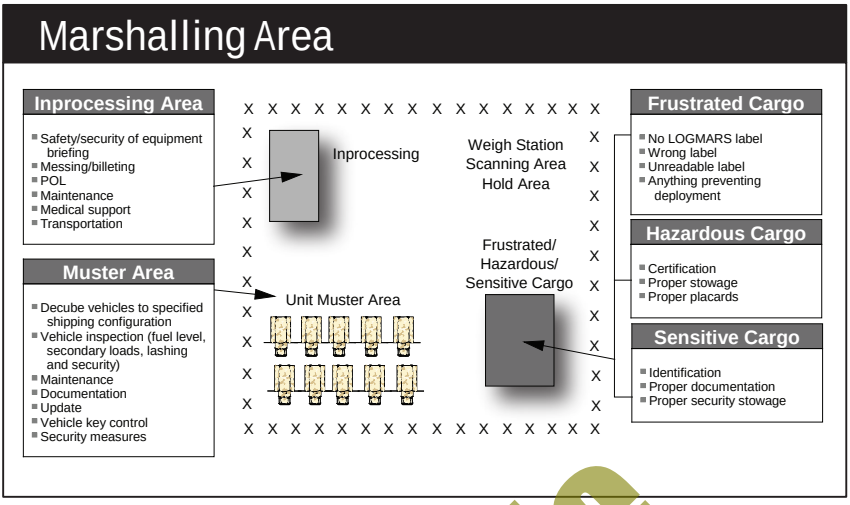
Ref: ATP3-35, Army Deployment and Redeployment (Mar '15), fig. 3-1, p. 3-3.

1. Marshalling Area

For movement to SPOEs deploying units and equipment may use an en route marshalling area. These areas are ideally located near the port staging area and in the immediate vicinity of rail and truck discharge sites. The SPOE marshalling area is the final en route location for preparation of unit equipment for overseas movement prior to the equipment entering the port staging area. Establishment of a marshalling area reduces congestion within the terminal area and provides space for sorting vehicles for vessel loading. The layout of a marshalling area is not fixed but is contingent on available space and needs of the unit. Equipment arriving in the marshalling area is normally segregated in accordance with the vessel stow plan.

2. Staging Area

The equipment is moved from the marshalling area to the staging area based on the vessel work plans and as directed by the port commander. The SDDC port commander assumes custody of the cargo at this point. Activities within the area include equipment inspection for serviceability, packing lists and load card, accuracy of dimensions and weights, properly secured secondary loads, and documentation of any cargo requiring special handling. Military shipment labels affixed to equipment will be scanned using bar code readers. The data will then be loaded into the Global Air Transportation Execution System (GATES). GATES has a module to produce ship manifests and serve as the basis for status reports. Additionally, GATES feeds data to IGC.



Ref: Adapted from FM 4-01.011, Unit Movement Operations, fig. 4-1, p. 4-4.

The **port support activity (PSA)** is a flexible support organization designed to assist SDDC with the loading of equipment at seaports. SDDC provides PSA capability through Stevedore and Related Terminal Services contracts. SDDC will coordinate with IMCOM, FORSCOM, and supporting Army Service Component Command (ASCC) for requirement outside of SDDC capabilities. SDDC also has the capability to assist deploying units with documentation, ITV, and vehicle inspection.

When processed, equipment may be segregated into different lots within the staging area by type, size, and any other special considerations such as hazardous materials, sensitive and classified items, and containerized equipment. From the staging area, vehicles are called forward to load the ship based on the stow plan and call forward schedules.

Additional information on seaport roles and responsibilities can be found in ATP 4-13 Army Expeditionary Intermodal Operations.

3. Supercargo

Supercargoes are unit personnel designated on orders to accompany, secure, and maintain unit cargo on board ships. They perform liaison during cargo reception at the SPOE, vessel loading and discharge operations, and seaport of debarkation (SPOD) port clearance operations. The supercargoes are attached to the port operator and remain with the port manager at the SPOD until the offload is complete and they are released back to their units.

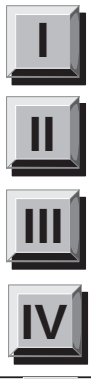
Deploying unit commanders recommend the composition of supercargoes based on several factors including the amount and types of equipment loaded aboard the ship and the number of units with equipment on the ship. Military Sealift Command (MSC) determines the actual number of supercargo personnel permitted onboard, based on the berthing capacity of the ship.

III. Reception, Staging, Onward Mvmt, Integration

Ref: ATP 3-35 (w/Chg 2), Army Deployment and Redeployment (Mar '15), chap. 4.

The purpose of RSOI is to build the combat power necessary to support the CCDR's concept of operation. Force closure is that point which the combatant commander determines that an adequate combat-ready force is available. Force closure requires well-defined criteria by which unit commanders can measure their readiness. Assessment of combat power begins with established standards for readiness and is based on unit capability, rather than simple tallies of vehicles and weapon systems on hand. Readiness and reporting are inherently operational matters, normally handled through operations channels.

RSOI Segments



Ref: ATP 3-35, Army Deployment and Redeployment, chap. 4.

Reception is the unloading of personnel and equipment from strategic transport, marshaling them, transporting them to staging areas, and if required, providing life support services.

Staging is the assembling, holding, and organizing arriving of personnel, equipment, and basic loads into units; preparing the units for onward movement; and providing life support until the unit becomes self-sustaining.

Onward Movement is moving units from reception facilities and staging areas to TAAs or other theater destinations; placing arriving nonunit personnel to gaining commands; and providing sustainment to distribution sites.

Integration is the synchronized transfer of authority of units to a designated component or functional commander for employment in the theater of operations.

RSOI Infrastructure

RSOI operations are the responsibility of the GCC and his designated headquarters, generally a theater sustainment command (TSC). The TSC controls the physical facilities and collaborates with the advanced echelon of the arriving headquarters to establish the throughput rate it can handle. The deploying forces have a responsibility for their own security, organization, and movement through the RSOI process to the extent possible. The process is supported by outside entities such as host

I. Reception

As the initial step in introducing combat power, reception can determine success or failure of the RSOI operation. Reception from strategic lift is implemented at or near designated air and seaports of debarkation, normally under control of the GCC. It must be thoroughly planned and carefully executed. While the reception plan for each theater may vary, reception capacity should at least equal planned strategic lift delivery capability.

For the initial period of deployment, the aerial port is the lifeline to the front-line. All that is not pre- positioned or available from the host nation comes through the aerial terminal. Then the first surge of sealift ships begins to arrive, dramatically increasing forces. Airlift remains a critical element regarding delivery of personnel, but most unit equipment to build the combat power arrives through seaports.

Synchronizing transportation reception activities are critical to facilitating throughput at the ports of debarkation. They include command, staff oversight, movement control, and port operations.

Port Operations

The RSOI command and control headquarters must control the deployment flow so that reception capabilities are not overwhelmed. APODs and SPODs should be considered integral parts of a single reception complex, unless the distance separating them precludes mutual support. Reception capacity depends on—

- Port and airfield infrastructure, condition, and characteristics
- Availability of host nation labor and port services
- Off-loading and holding space
- Weather
- Enemy situation

II. Staging

Staging is that part of the RSOI operation that reassembles and reunites unit personnel with their equipment and schedules unit movement to the tactical assembly area, secures or uploads unit basic loads, and provides life support to personnel. These activities occur at multiple sites in controlled areas called ISBs that are required because space limitations normally preclude reassembly of combat units at seaports of debarkation. In general, there will be at least one intermediate staging base (ISB) for each SPOD/APOD pairing.

RSOI Port Selection

Ref: ATP 3-35 (w/Chg 2), Army Deployment and Redeployment (Mar '15), pp. 4-5 to 4-7.

Seaport and airfield throughput capacities significantly influence the speed, order, and, to a large extent, the types of units that can deploy through them. Consequently, before thought is given to actual deployment of forces, planners must evaluate available airfield and port facilities within the area of operations, as well as the transportation networks linking them with each other and to the interior. As was the case during Operation Desert Storm, it may be better to use a world class port hundreds of miles away from TAAs rather than conduct an in-stream discharge operation or use a smaller, degraded port facility with limited capacity and throughput. Diplomatic and military contacts should be made at the earliest possible opportunity with the host nation controlling key facilities and rights of way.

The combatant commander in conjunction with USTRANSCOM selects the PODs that will be used for deployment. METT-TC considerations and the theater transportation infrastructure will drive the sequence, type, size of forces, and materiel arriving at ports of debarkation. These decisions impact the speed of combat power buildup and continued development of the theater. Ports of debarkation may need improvement and repair to accommodate high throughput rates required for rapid force closure. Thus, the early entry of units such as cargo transfer companies, Army watercraft, causeway detachments, and engineer assets can be critical to off-loading materiel, clearing ports and consequently speeding deployment.

Aerial Port of Debarkation (APOD)

Deployment by air is often constrained by the capabilities of the arrival airport more often than a shortage of aircraft. Issues such as concurrent civilian use, competition for landing and takeoff slots, ramp space, number of aircraft on the ground at one time, and political restrictions limit its use to military aircraft. Consequently, maximum throughput at limited airports is paramount. The APOD is by its very nature a joint facility and will likely be a multinational facility. It is a POD for deploying forces, and a POE for forces moving to other theaters and noncombatant evacuation. The host nation may limit the APOD to coalition military use, or the military may be sharing the facility with commercial activities. Governmental, non-governmental, and private organizations will likely be competing for use of the APOD along with military forces.

The APOD serves as the primary port of entry for all deploying personnel, as well as for early entry forces normally airlifted into theater together with their equipment. USTRANSCOM through AMC is the DOD-designated single port manager (SPM) for all common user APODs worldwide. The SPM performs those functions necessary to support the strategic flow of forces and sustainment supplies through the APOD. The SPM is responsible for providing deployment status information to the supported CCDR and clearing the airfield in accordance with the CCDR's priorities. Responsibility for APOD functions is divided between the USAF and the Army, with the USAF responsible for airfield operations including air terminal control, loading, unloading, and servicing of aircraft. The Army is responsible for clearing personnel and cargo off the tarmac and for required logistics support for transiting units. USAF/Army interface occurs between the USAF contingency response group (CRG)/CRE and the Army arrival/departure airfield control groups (A/DACG) and MCTs.

Necessary communication, personnel, and cargo handling equipment must be in place to facilitate rapid movement out of the airport. Both the CRE and the A/DACG must be included in the lead elements of the deploying force. The CRE controls all activities at the off-load ramp area and supervises aircraft offloading. The A/DACG escorts loads and personnel to holding areas, thus clearing the airfield and ensures airfield operations and strategic airflow are not obstructed and limited due to the accumulation of cargo.

(SMFLS5) Index

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