



**The United States Army
Functional Concept for**

Sustain

2015-2024

Version 1.0

30 April 2007



Foreword

From the Director United States Army Capabilities Integration Center

The United States Army Functional Concept for Sustain 2015–2024, provides amplification to the Army's capstone and operating concepts within the sustainment functional area. It focuses on how the Army will sustain the future Modular Force. This concept also defines the functional capabilities required to sustain the future Modular Force across the full spectrum of operations and will serve as the foundation for follow-on concept capability plans, development, and additional exploration through studies, experiments, and wargames.

As this concept demonstrates, the Army has a well developed body of ideas regarding how we can better support joint force commanders (JFCs) to conduct successful campaigns in the future. It is equally clear the Army cannot achieve its conceptual goals for improvement without developing an array of capabilities by other Services and the larger joint community, particularly in the areas of focused logistics, joint multi-national, agency partnerships, and joint distribution. Thus, I strongly encourage the use of the *Sustain* concept in our interactions with other Services and joint organizations, in the spirit of joint interdependence.

This concept is the outcome of a collaborative effort involving subject matter experts from throughout the Army, and the product of a detailed study of strategic guidance, current doctrine, and lessons learned. It assumes a future that includes complex situational environments; thinking, adaptive, and highly-capable enemies; and Army operations that must be fully integrated into a joint, interagency, and multi-national framework. From these efforts, the concept offers new ideas for further examination to ensure the future Modular Force will be able to defeat any adversary or control any situation across the full range of military operations.

As with all concepts, the *Sustain* concept is in continuous evolution. It will be refined and updated as new learning emerges from research, operational experience, joint, and Army wargaming, experimentation, and combat development.

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Executive Summary

Introduction

a. *The United States Army Functional Concept for Sustain 2015–2024*, addresses how the Army will sustain the future Modular Force. Consistent with Joint Publication 4-0, it describes necessary capabilities to sustain the force or prolong operations until the completion or revision of the mission. The concept outlines supplies and services required to support the initial execution of approved operational plans, the intermediate levels of supplies to support the force until resupply is available, and the replenishment stocks necessary to maintain and conclude operations. It is within this context the concept is framed.

b. In order to sustain the force, a complex array of functions and systems must be implemented at all operational echelons. The distribution system must effectively support from the strategic to the tactical level, command and control (C2) systems must provide the link between the levels of war, and agreements between Services and multi-national partners must be in place to succeed. These topics will be discussed as they apply to sustaining the deployed force.

c. The *Sustain* concept supports the Army's capstone concept, *The Army in Joint Operations*. It describes key ideas and requisite capabilities to serve as the foundation for follow-on concept capability plans, development, and additional exploration through studies, experiments, and wargames. This concept defines the functional capabilities required to sustain the future Modular Force across the full spectrum of operations (FSO).

Operational Problem

a. The current sustainment system is characterized by deficient asset visibility and tracking systems, infrastructures, and C2 structures that do not fully integrate sustainment into mission planning. These deficiencies hinder the ability to build accurate capacity into the sustainment system and to instill confidence, that the right supplies and services will arrive on time and location when needed.

b. The future Modular Force, as envisioned in the Army capstone concept, will execute simultaneous, distributed operations within a noncontiguous battlefield. It will be capable of conducting sustained FSO, while controlling operational tempo. The future Modular Force will be network-enabled to facilitate situational understanding of the entire operational area. Within this framework, distributed support and sustainment are keys to maintaining freedom of action, while using the smallest logistic footprint feasible. These ideas will challenge Army operational and tactical concepts that depend upon infrastructure and secure ground lines of communication (GLOCs) for distribution and to sustain the force.

Solution Synopsis

To meet the challenges of supporting distributed operations of the future force, sustainment planning and execution will be more closely integrated within the operations process. The decreased ability to depend on GLOCs will result in an increased reliance on air and sea based

delivery platforms and reachback, and will maximize direct delivery of tailored packages at the tactical level. This is complemented by demand reduction resulting from improved unit self-sustainment and increased parts commonality.

Key Ideas

- *A single joint capable network-enabled logistics system.* Improves and enhances lines of communications across highly distributed noncontiguous operations occurring in multiple environments simultaneously.
- *High-speed, precision, accuracy, visibility, and centralized supply chain management with minimum essential forward stockage and reachback capabilities.* Multi-directional flow of stock tracked from origination source to point of employment or consumption, optimizes resource re-direction, when required.
- *Interdependent, capabilities based, modular, network-enabled organizations with increased commonality* of equipment and organizational designs. Reduces sustainment requirements, mitigating the effects of distance, time, simultaneity, and the complexity of operations.
- *Highly mobile systems, advanced distribution platforms, precision delivery systems and state-of-the-art C2.* Reduces personnel risk through robotics and reduces redundancy through joint enabled, combat integrated command systems. Increases utilization and enhances predictability.
- *Continuous support through global integrated management and sourcing of Army, joint, and combined partnerships.* Reduces competition for like resources and maximizes host nation and Logistics Civilian Augmentation Program support to the joint force. Integrates decision cycles and supporting data.

30 April 2007

Military Operations

THE UNITED STATES ARMY FUNCTIONAL CONCEPT FOR SUSTAIN 2015 - 2024

History. This publication is a new United States Army Training and Doctrine Command (TRADOC) Pamphlet developed as part of the Army Concept Strategy for the future Modular Force.

Summary. TRADOC Pamphlet (Pam) 525-4-1, *The United States Army Functional Concept for Sustain 2015-2024*, is the Army's overarching visualization of how the Army will sustain the future Modular Force during the 2015-2024 timeframe across the full spectrum of conflict (SC) to achieve full spectrum dominance. The ideas presented here are fully integrated within the evolving context of our estimates of the future operating environment, joint and Army strategic guidance, and the joint framework.

Applicability. This concept applies to all Department of the Army (DA) services, agencies, and activities involved in the future Modular Force. It functions as the conceptual basis for developing required solution sets related to the future Modular Force sustainment within the domains of doctrine, organization, training, materiel, leadership and education, personnel, and facilities (DOTMLPF).

Proponent and exception authority. The proponent of this pamphlet is the TRADOC Headquarters, Director, Army Capabilities Integration Center (ARCIC), Concept Development and Experimentation Directorate (ATFC-ED), Fort Monroe, VA 23651-1046. The proponent has the authority to approve exceptions or waivers to this pamphlet that are consistent with controlling law and regulations.

Suggested improvements. Users are invited to send comments and suggested improvements on DA Form 2028 (Recommended Changes to Publications and Blank Forms) directly to Commander, TRADOC (ATFC-ED), Fort Monroe, VA 23651-1046. Suggested improvements may also be submitted using DA Form 1045 (Army Ideas for Excellence Program Proposal).

Distribution. This publication is only available on the TRADOC Homepage at <http://www.tradoc.army.mil/tpubs/pamndx.htm>.

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Chapter 1 Introduction

1-1. Purpose

a. The *Sustain* concept addresses how the Army plans to sustain the future Modular Force, while setting the stage for development of follow-on functional concept capability plans. This concept combines intellectual approaches, capabilities, and processes with enduring joint and Army concepts, as it focuses on how the Army will provide equipment, supplies, maintenance, health services, transportation, field service and Soldier support to the deployed force in the area of operations (AO). It also focuses on command and control (C2), as it applies to the linkage between the strategic sustainment of corps, division, and field Army within the joint theater logistics structure.

b. The *Sustain* concept supports the capabilities based assessment process as part of the Joint Capabilities Integration Development System effort, by suggesting a set of capabilities to guide commanders, in support of the future Modular Force in the joint operating environment (JOE) and by helping drive future Army experimentation and influence science and technology efforts. Commanders will be informed of potential solutions identified by their efforts via the capabilities based assessment, as improvements are made toward future Army capabilities.

c. This concept provides commanders with an overview of the means to sustain combat power at every point throughout the campaign, during operational and tactical maneuvers with joint, allied, and coalition forces as guided by the challenges presented in the future JOE.

1-2. Scope

a. This concept focuses on the 2015-2024 timeframe at the theater strategic to tactical level of war during operations across the range of military operations (ROMO) in support of the future Modular Force commander.

b. This concept describes a future sustainment strategy that focuses on how the already deployed future force will be equipped, supplied, and maintained in an AO. It also focuses on C2, as it applies to the linkage between strategic sustainment of corps, division, and field Army with the joint theater logistics structure.

1-3. Conceptual Foundation

a. National Guidance

(1) The *National Military Strategy of the United States of America 2004* addresses the concept of full spectrum dominance (FSD), which is the defeat of any adversary or control of any situation across the full ROMO. Integral to the success of FSD is the ability to sense, understand, decide, and act before an adversary to enable high operational tempo in any situation. FSD requires adaptability, decentralized execution, and decision superiority in all

situations. Services and combatant commands must develop, organize, and train their forces in order to provide desired joint capabilities to ensure campaign success.

(2) Under the National Military Strategy, varying degrees of support will be provided to the United States (U.S.) government agencies, non-governmental organizations, international organizations, and host nation agencies. This support requires interagency and multi-national coordination.

b. Joint Guidance

(1) Joint conceptual foundations are resident within the *Joint Operations Concepts* (JOpsC), the family of joint concepts that guide the development of future joint capabilities, and include the *Capstone Concept for Joint Operations* (CCJO). Joint guidance is found within the JOpsC family, consisting of the CCJO, joint operating concepts (JOCs), joint functional concepts, and joint integrating concepts. JOCs describe how a future JFC will plan, prepare, deploy, employ, and support the joint force (JF) against potential adversaries' capabilities. The Joint Chiefs and the Transformation Planning Guidance have identified broad JOC categories, to include *major combat operations, stability operations, homeland security, and strategic deterrence*. The JOCs focus on the operational level and integrate functional and enabling concepts, providing a detailed conceptual perspective for joint experimentation and assessment activities.

(2) As the joint community transforms to prepare for anticipated operations, the Army logistics capability will similarly transform and be linked through the JOpsC to existing JOCs, relevant joint functional concepts (*Focused Logistics*), and related joint integrating concepts (*Distribution*), and to other Department of Defense (DOD) initiatives. *The Army in Joint Operations: The Army's Future Force Capstone Concept 2015-2024* is the linchpin that links joint strategies to the Army Concept Strategy.

c. Army Guidance

(1) TRADOC Pamphlet 525-3-0, *The Army in Joint Operations*, is the capstone concept of the future Modular Force and is grounded within the framework of the joint concepts. It describes the future Modular Force as a full spectrum force which is organized, manned, equipped, and trained to be strategically responsive, deployable, agile, versatile, lethal, survivable, and sustainable across full spectrum operations (FSO). The capstone concept further describes seven key operational ideas the Army will employ in support of joint operations: shaping and entry operations, operational maneuver from strategic distances, intratheater operational maneuver, decisive maneuver, concurrent and subsequent stability operations, distributed support and sustainment, and network-enabled battle command. The *Sustain* concept supports the key ideas in the capstone concept. It also supports the two operating concepts, *Operational Maneuver* and *Tactical Maneuver* and links and supports *See, Strike, Move, Protect*, and *Battle Command* functional concepts.

(2) Army doctrine provides the enduring foundation to support future concepts, to include FM 1, *The Army*; FM 4-0, *Combat Service Support*; TRADOC Pam 525-95, *Future*

Modular Force Maneuver Sustainment Operations; and TRADOC Pam 525-96, *Future Modular Force Distribution Operations*. Lessons learned from past and current operations are incorporated into doctrine, and the sources listed in Appendix A also support future concepts.

d. The Focused Logistics Initiative

(1) As a direct result of the *Army Modernization Plan 2002*, the focused logistics initiative espouses enhanced strategic responsiveness to reduce the logistic cost and footprint. The goal of focused logistics is to provide the JFs, the right supplies and services at the right place, at the right time. It concentrates on logistics at the operational level of war from the joint task force perspective and recognizes those levels of war will become increasingly blurred as DOD transforms JF capabilities and operations. Focused logistics also recognizes that logistics capabilities must be able to support multiple task forces and coalitions simultaneously.

(2) The accomplishment of the focused logistics goal relies on the advancement of equipment, technology, organizations, and business processes. Capabilities developed as part of focused logistics will benefit the future Modular Force, as most are advancements necessary to accomplish future Modular Force missions. Focused logistics will capitalize on the technologies, doctrine, and business processes that enable the pipeline of supplies and services to flow more efficiently and effectively. This includes the selective use of reachback. The end result will be a supporting force as agile and deployable as the combat forces it supports.

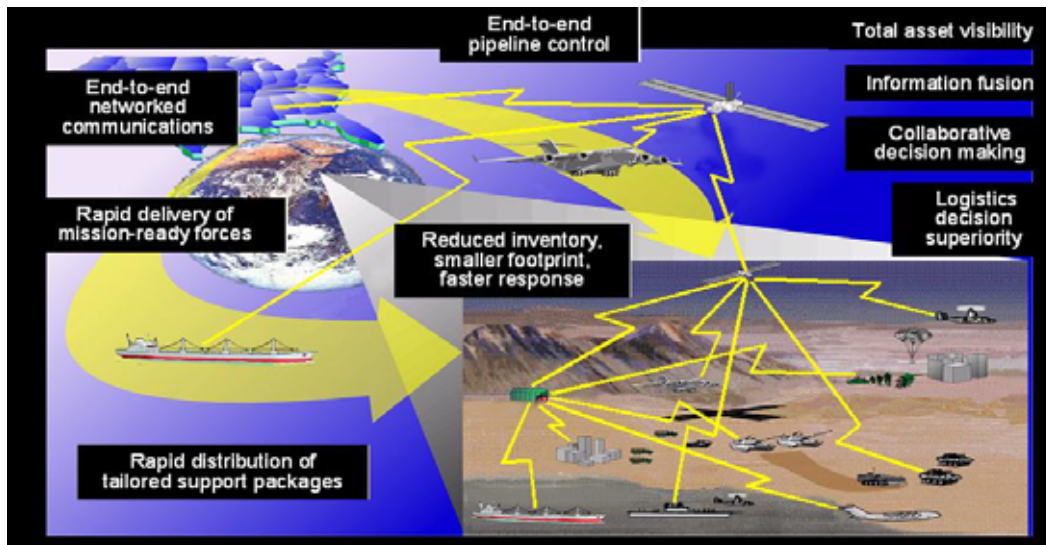


Figure 1-1. Focused Logistics, Right Place, Right Time, Right Amount

(3) The *Focused Logistics Joint Functional Concept* reiterates the objectives for logisticians to provide the JFC with the right personnel, equipment, supplies, and support; in the right place, at the right time, in the right quantities, the first time, across FSO (see fig 1-1). Logisticians are expected to provide services effectively, efficiently, and quickly. Guidance for future DOD logistics capabilities reflects these enduring objectives and expectations.

e. Full Spectrum Operations

(1) Described as the ROMO (see fig 1-2) within the CCJO or the spectrum of conflict (SC) in Army doctrine, this construct portrays the operations in which the future force may engage. The figure reflects both adversarial focused and humanitarian (non-adversarial) operations. The U.S. will remain continuously engaged across the globe in a continuum, ranging from peace and stability through conflict, to reconstruction, with a goal of returning to and maintaining a state of peace and stability, in which U.S. national security interests are assured. The uncertain environment combined with the scope of different operations demands capabilities that are adaptable and applicable in FSO simultaneously.



Figure 1-2. Range of Military Operations

(2) *Full spectrum operations* are distinct from the ROMO and from the SC.¹ In the same way U.S. Armed Forces will be engaged simultaneously in multiple forms of contingency operations at any moment in time, the Army expects to simultaneously conduct three fundamental types of operations being offense, defense, and stability during the course of future operations. The predominance of each of the types of operations will vary according to the nature of the operations. Typically, major phases within a campaign signal a shift in weight from one type of operation to another. The Army must be able to sustain deployed forces using the same channels, systems, enablers, and principles used to execute support during FSO and across the SC.

¹ Greater understanding of ROMO vice FSO vice spectrum of conflict may be found in TRADOC Pam 525-3-1, Operational Maneuver.

(3) A future Modular Force that is both capabilities based and modular makes support across FSO easier and safer. Modularity provides the foundation to make support elements responsive, economical, effective, flexible, selective, and identifiable. The basis for selecting a module, a set of modules, or an entire unit for a given mission, depends on where the mission falls within the spectrum of operations and the capabilities required for the mission. For example, responding to a humanitarian mission after a natural disaster may require a water purification and distribution platoon, rather than the entire company.

(4) Deploying only needed capabilities reduces personnel and equipment requirements and the risks associated with entering and operating in the joint operations area (JOA). Modular organizations mean support capabilities can be phased into the JOA by deploying modules independent of the parent units as sustainment requirements mature. This reduces the logistics footprint. A smaller footprint mitigates the risk to Soldiers and reduces force protection requirements.

f. Seabasing

(1) Seabasing is the rapid deployment, assembly, command, projection, reconstitution, and re-employment of joint combat power from the sea while providing continuous support, sustainment, and force protection to select expeditionary JFs, without reliance on land bases within the JOA. These capabilities expand operational maneuver options and facilitate assured access and entry from the sea.²

(2) Seabasing plays an important part in the future Modular Force through the focused logistics initiative. Key applications of seabasing include: joint at sea arrival and assembly, selective on-load and off-load, medical support, maintenance, total asset in-transit visibility, flexible and tailored sustainment, and reconstitution. Sustaining JF operations is one of the seabasing principles and provides a viable means to sustain future JFs ashore (see fig 1-3).

² Seabasing Joint Integrating Concept, Version 1.0.

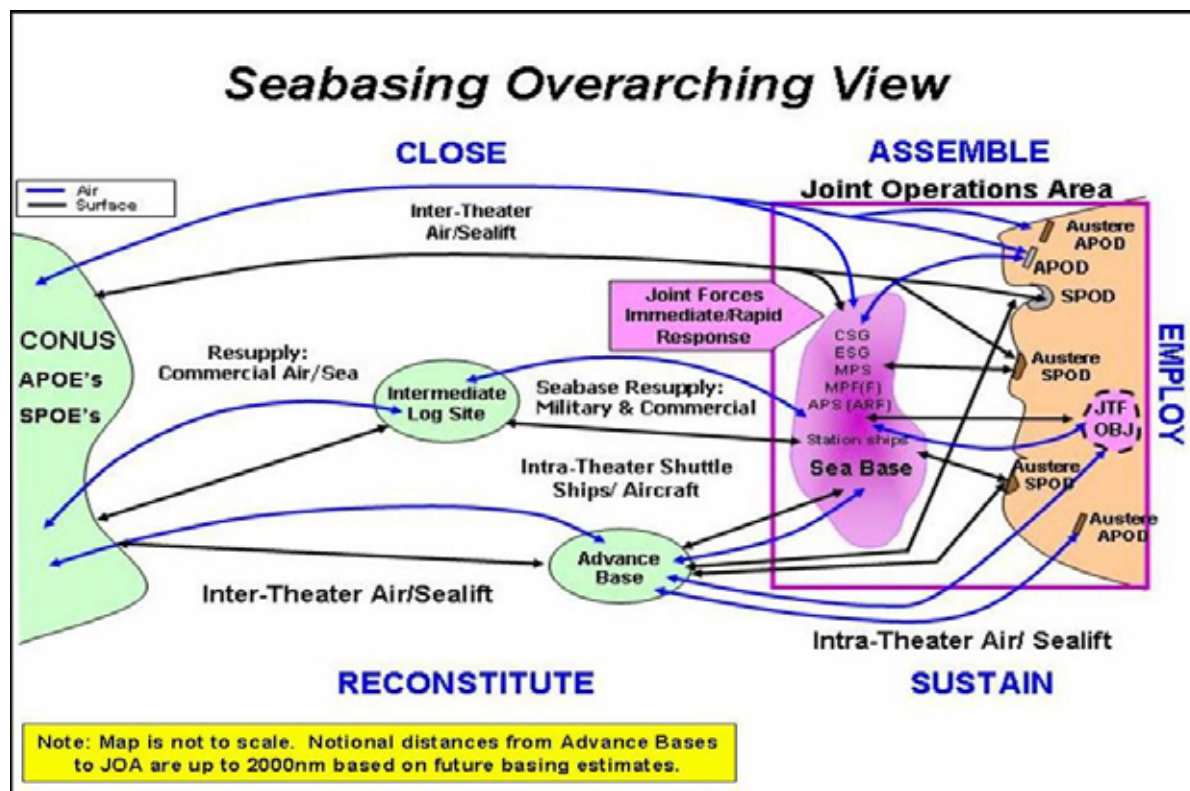


Figure 1-3. Seabasing Overarching View

g. Engineering

(1) Engineering support to the future Modular Force will be joint and focused on the planning, designing, constructing, and maintaining of infrastructure critical to sustainment of the force. While this support may come from each of the joint engineer functions (combat, general, and geospatial engineering), the focus will be on necessary general engineering supported by geospatial engineering and the role that geospatial engineering provides directly to sustainment planners and operators. Engineering enables distribution at strategic, operational, and tactical levels. Modular engineer elements from both the operational Army and the generating force, supported by reachback capabilities, will provide the necessary mission support during sustainment, while concurrently performing their other missions and roles.

(2) Joint operational engineering is identified as a joint logistics capability and provides essential enablers to sustainment. When the engineer effort predominately supports sustainment of the JF, the JFC should consider placing the engineer staff as a cell within the Logistic Directorate, named the J-4. When this is not the case, the engineer staff will operate as a cell within the Operations Directorate, named the J-3, or as a separate Engineer Directorate, named the J-7, as appropriate. In all cases, the engineer staff will provide support to sustainment operations according to the priorities assigned by the JFC. When planning operations, engineers consider a wide range of diverse requirements in preparation of engineer support to sustainment operations. Engineer planning considerations include: assured mobility, joint intelligence preparation of the operational environment, engineer reconnaissance, logistics, technical expertise, facilities, transitions, antiterrorism and force protection, real property requirements,

construction, environmental considerations, and other engineer-related responsibilities. Joint operational engineering plans, designs, constructs, and maintains the necessary infrastructure to enable strategic lift.

1-4. Limitations

a. In the past, most U.S. military operations have involved an allied or coalition partner. Support to allied and coalition forces is predicated on existing agreements in an alliance or temporary coalition. Obstacles to allied and coalition support increase with differences in doctrine, capabilities, language, culture, and other DOTMLPF issues. Typically, support cannot be provided to nor received from other nations without legal authorization such as an Acquisition and Cross-servicing Agreement or a foreign military sales case.

b. Joint operations are subject to U.S. laws, DOD policies, joint doctrine, and inter-Service agreements. The degree of interoperability between equipment and systems with other Services, allied and coalition partners, particularly at the tactical level, limits implementation of this concept. The potential of this concept may be further limited by the capabilities and requirements for mobility and sustainment of Army organizations, based on their current Army transformation status; meaning, how far along are they in the process.

Chapter 2 Operational Environment

2-1. General Overview

a. Emerging cultural, religious, ethnic, political, technological, and economic factors will complicate the future geopolitical environment (fig. 2-1). The resulting mix of global strategic, operational, and tactical issues transcends borders and involves opponents with worldwide connections that present a demanding combination of challenges and dilemmas for the U.S. Security challenges will be more varied and unpredictable and the range of operational settings within the spectrum of conflict considerably more complex, driving expectation that U.S. military assistance in civil support operations and stability operations will continue to rise. The future Modular Force will encounter unprecedented complexities in physical terrain (especially urban areas), demographics, and informational environments. U.S. resources could be extended beyond the historic bounds of the task, and the range of military operations in those settings will be much wider than in the recent past.

b. The National Defense Strategy and the CCJO postulate four primary security challenges for the future: traditional, irregular, catastrophic, and disruptive. *Traditional* (conventional) operations conducted within a state-on-state framework will continue to be relevant in the future environment. Regional aggressors will continue to modernize conventional forces and invest in capabilities that will enable them to dominate their neighbors. *Irregular* (unconventional) warfare may be conducted as the principle choice of adversaries who are overmatched in size or military technologies, or these kinds of operations may be combined with

conventional capabilities to present an even more complex threat. *Catastrophic* challenges involve the acquisition, possession, and use of weapons of mass destruction. Adversaries seek such capabilities to dominate their regions, deter external intervention, or both. *Disruptive* challenges may occur through the employment of breakthrough technologies to negate existing U.S. advantages in key operational domains.



Figure 2-1. The Joint Operational Environment

c. The most dangerous future adversary would be one that combines capabilities in all four challenges in creative ways, adapting them before and during the course of a conflict to frustrate U.S. military action. Opponents will attempt to use these capabilities to exploit perceived vulnerabilities, especially our dependence on networked command and intelligence, surveillance, reconnaissance. Opponents will also attack America’s relationships with host and supporting nations, the media, commercial interests, and multi-national or interagency partners. U.S. development of the intellectual capital that will power a culture of innovation and adaptation potentially represents the most effective response to combinations of threats that cannot be predicted.

d. The future Modular Force will face increasing complexity in its own operations. Given the expectations outlined above, strategic and joint guidance unequivocally establishes full spectrum dominance, the defeat of any adversary or control of any situation across the full ROMO, as the overarching goal of joint transformation and JF development. Thus, it is

imperative that the future JF and the Army are fully prepared to be effective across the SC and in the conduct of FSO throughout the course of a future campaign. The future Modular Force will fight as a part of a networked JF, integrated at every level, and interdependent in the joint areas of battle command, force projection, air and missile defense, sustainment, and fires.

e. Exploiting the full potential of future technical capabilities will require an unprecedented breadth and depth of technical and tactical skill, individual and organizational flexibility, and personal initiative and creativity pitted against thinking, adapting adversaries. Speed, simultaneity, distribution, and the ability to conduct multidimensional, continuous operations over extended distances will be mandatory to gain the initiative and allow for ultimate success. As future adversaries gain additional capabilities to directly threaten U.S. territory, U.S. military forces will become increasingly involved in homeland security in addition to executing challenging missions abroad. The future Modular Force must also fully integrate its operations with its interagency and multi-national partners, exploiting the strengths that those partners provide while minimizing any limitations and vulnerabilities.

2-2. Sustainment and the Operational Environment

a. Uncertainty about where the future Modular Force may deploy, the probability of an austere operational environment, and the requirement to fight upon arrival throughout the JOA pose challenges to sustainment. As noncontiguous operational areas will be the norm in the future, support forces will no longer be able to rely on secure ground lines of communication (GLOCs) or on the use of host nation infrastructures at all points throughout the campaign.

b. The asymmetric nature of the future operational environment, may eliminate front lines, rear areas, secure garrisons, and convoys. Physical security traditionally associated at the rear location of support facilities can no longer be assumed. Provisions for the assured protection of support installations and the lines of communication that link them to maneuver formations must be routine. As Soldiers are warriors first, specialists second, sustaining organizations must be armed, trained, provisioned, protected, and mentally prepared to fight even as they sustain.

c. Other challenges include those caused by the civilian population within the operational environment. Civilians caught in a conflict create humanitarian and political concerns for the commander and may tax support assets originally slated for Soldiers. Zealots willing to die for a cause pose constant force protection challenges to logistics and Soldier support.

2-3. Joint Operational Framework

a. Campaign Phases. The joint construct of the overlapping campaign phases presents Army future Modular Force commanders at all levels a clear analytical framework for both planning and execution. These phases *shape, deter, seize the initiative, dominate, stabilize, and enable civil authority*, will enable commanders to consider the end state and structure plans aimed at achieving this end state. Future capabilities as they apply to sustaining these campaign phases are discussed below.

b. Joint Publication 3-0, *Joint Operations*, specifies six phases: shape, deter, seize the initiative, dominate, stabilize, and enable civil authority. TRADOC Pamphlet 525-3-0, *The Army in Joint Operations*, which predates this new joint phase titling, uses the following four phases: prepare and posture, shape and enter, conduct decisive operations, and transition. For concept purposes, the *prepare and posture* phase encompasses the two distinct joint phases of *shape* and *deter*. Similarly, the Army *shape and enter* phase includes elements of the joint *shape* and *seize the initiative* phases. The Army *conduct decisive operations* phase includes the joint *seize the initiative* phase and parts of *dominate*, *stabilize*, and *enable civil authority*. *Transition*, as used in the Army capstone concept, overlaps the joint phases of *dominate*, *stabilize*, and *enable civil authority*.

c. The discussion of joint phasing does not imply that those phases are sequential in planning or in execution. In fact, many phases will be concurrent while some phases may actually be omitted from a particular campaign or major operation. For example, though Joint Pub 3-0 labels *shape* as phase 0, it is actually a continuous effort that only begins in phase 0. In some instances, phase I, *deter*, may not occur at all; the JFC may go directly from *shape* to *seize the initiative*.

(1) During the *shape and deter* phases, the Modular Force conducts operations to dissuade and deter potential adversaries and to solidify relationships with allies. These could include a show of force and a show of solidarity between nations. Even with dissuasion attempts, the JFC begins to set the overall conditions for timely deployment, uninterrupted employment, and sustainment support of special operations forces; recognizing that sustainment planning and operations begin well before actual deployment and remain continuous throughout the campaign. Collaborative, parallel planning makes the single, joint interdependent C2 organization critical to the future Modular Force. The “anytime...anywhere” nature of expeditionary operations relies upon mobile afloat platforms of pre-positioned stocks. To mitigate the need for unplanned operational pauses, early deploying units may need to extend their self-supportability by receiving tailored packages via air and sea delivery. Critical nodes require protection from enemy anti-access strategies. Antiterrorism and force protection plans, designs, and implementation are critical to anti-access.

(2) During the *seize the initiative* and *dominate* phases, the JFC focuses on maintaining the degree of support necessary to achieve a decisive operational decision. Given the nature of distributed operations in a high threat environment, it is necessary to sustain the force without benefit of a large forward logistics footprint or secure GLOCs. The JFC must be aware of the continuous threat to each node throughout all environments and is dependent on an agile and precise support system with unparalleled multi-directional reach to sustain continuous and distributed operations.

(3) During the *stabilization* and *enabling civil authority* phases, the JFC may be required to perform limited local governance until legitimate local governmental entities develop and function. This may be performed in conjunction with other participants and may occur concurrent with combat operations. During these phases, the JFC may have to control civilian movement, protect the populace, and establish or safeguard critical infrastructure. Essential tasks may involve housing and feeding refugees, furnishing medical care, enforcing civil

authority if it exists, and repairing municipal facilities. In all cases, the JFC must consider stability missions as a routine requirement of the campaign that must be linked seamlessly to other activities. Future force sustainment organizations will be ready to quickly conduct redistribution, redirection, and retrograde activities to support stabilization while fully supporting changes in focus or objectives, to include enabling civil authority.

2-4. Key Characteristics of the Joint Force

a. To operate within the joint operational framework, the future Modular Force must display many key characteristics. Those characteristics that most affect the ability to sustain the force are the requirements to be *joint interdependent, capabilities based and modular, expeditionary, and network-enabled*.

b. *Joint interdependence* purposefully combines Service, defense agency, and joint command capabilities to maximize inherent strengths while minimizing inherent vulnerabilities. Interdependent joint logistics is achieved through deliberate, mutual reliance of each Service on the core logistics competencies of other Services and agencies, reducing unnecessary redundancies. Some of these capabilities include those provided by the U.S. Transportation Command (USTRANSCOM), the distribution process owner who moves forces, and the Defense Logistics Agency, which provides the majority of supplies to sustain the force. At the operational and tactical echelons, interdependencies are required for effective operations and must be fully integrated into the planning process. Capabilities from two or more Services may be linked in time, space, and purpose to achieve desired effects. These capabilities may include close air support from the Air Force, lift support from the Marines, bulk fuel support from the Army, and specialized general and geospatial engineering support from all Services.

c. *Capabilities based and modular* forces will be tailored for specific conditions through multiple combinations of ways to perform a set of tasks to achieve an operational objective. The modular nature of this design establishes the means of providing capabilities that are agile, flexible, and situationally responsive. Rapid assembly, deployment, and support of fully mission-oriented contingency forces will be core strengths.

d. The future Army will be *expeditionary*. It will be quickly deployable, easily employable, and predictably supportable, regardless of the environment. It will rely less on existing infrastructure and host nation support, especially in the early phases and at the extreme edges of FSO. In order to sustain the expeditionary demands of the future Modular coherent lines of C2 must be established. Reachback for capabilities in areas such as, engineering and medical is necessary to the success of the expeditionary Army.

e. Finally, future force logistics will be *network-enabled*, providing adaptive and dynamic networks to support logistics operations on the joint distributed and asymmetric battlefield. The network links JFs and increases operational effectiveness by allowing distributed forces to communicate, maneuver, and share a common operational picture (COP).

Chapter 3 The Central Idea

3-1. Overview

a. The current regionally focused, Service-centric system sustains the force supported with inadequate and non-interoperable asset visibility and tracking systems, clogged distribution networks, and C2 systems that fail to fully integrate logisticians into planning processes. These shortcomings hinder the ability to build adequate capacity into the logistic pipeline and exercise the control required to instill confidence that the right sustainment will arrive on time where needed.

b. The future Modular Force, as envisioned in the Army capstone concept, will execute simultaneous, distributed operations within a noncontiguous battlefield. It will conduct sustained continuous FSO while controlling operational tempo. It will be network-enabled to facilitate situational understanding of the entire operational area (see fig 3-1).



Figure 3-1. Sustain the Future Modular Force

3-2. Solution Synopsis

To meet the challenges of supporting increasingly distributed operations, sustainment planning, and execution will be integrated into the operations process. The potential loss of secure GLOCs will result in more reliance on air and sea based delivery platforms. The demand driven sustainment paradigm will place a premium on the direct delivery of tailored packages to the

tactical level combined with demand reduction resulting from improvements in equipment and new technologies.

3-3. Key Ideas

- *A single joint capable network-enabled logistics system.* Improves and enhances lines of communications across highly distributed noncontiguous operations occurring in multiple operational environments simultaneously.
 - *High-speed, precision, accuracy, visibility, and centralized supply chain management with minimum essential forward stockage and reachback capabilities.* Flow multi-directional tracked from origination source to point of employment or consumption, optimizes resource re-direction when required.
 - *Interdependent, capabilities based, modular, network-enabled organizations with increased commonality* of equipment and organizational designs. Reduces sustainment requirements, mitigating the effects of distance, time, simultaneity, and the complexity of operations.
 - *Highly mobile systems, advanced distribution platforms, precision delivery systems and state-of-the-art C2.* Reduces personnel risks through robotics and reduces redundancy through joint enabled, combat integrated command systems. Increases utilization and enhances predictability.
 - *Continuous support through global, integrated management, and sourcing of Army, joint, and combined partnerships.* Reduces competition for like resources and maximizes host nation and Logistics Civilian Augmentation Program support to the JF. Integrates decision cycles and supporting data.
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Chapter 4

How the Future Modular Force Sustains in the Joint Campaign

4-1. Introduction

Within the confines of the joint campaign across the SC, the future Modular Force must be able to sustain the force at all levels, to include strategic, operational, and tactical. It may also need to provide sustainment to multi-national and coalition partners. This section describes how the Army may provide sustainment to these forces in the future JOE.

4-2. Overview

a. Brigade combat teams (BCTs) will be the basic combat formation of the future Modular Force. BCTs are the echelons of brigade and below. The maneuver BCT is the smallest combined arms unit that can be independently committed. Its function is to finish decisively by closing with and destroying enemy forces through integrated close combat. The operational reach and endurance of maneuver units is a factor of sustainment, protection, and momentum. Brigades are expected to employ most combat battalions in dispersed yet integrated engagements, while periodically cycling individual units into and out of operations to sustain operational momentum. Combat battalions will dominate the operational environment and

transition through several engagements in sequence. The BCT has an organic brigade support battalion structured to support internal requirements for up to 72 hours of high intensity combat without replenishment from external sources.

b. Most future Modular Force support organizations will be commanded by a theater level headquarters to obtain economies of scale and improve control of resources. These organizations will be tailorable units that integrate and synchronize Army sustainment forces in support of FSO at the higher tactical and operational levels of conflict. Focused on major operations and decisive land campaigns in support of joint operational and strategic objectives, these support organizations will be capable of C2 of Army, joint, and multi-national support forces. It will be organized, designed, and equipped to fulfill C2 functions of support at an Army Forces component, joint force land component command, or joint task force level. A joint staff augmentation via a standing joint headquarters or a joint manning document to perform JTF headquarters support tasks may still be required in the future. It will have the inherent capacity to interact effectively with multi-national forces, interagency, non-governmental organizations, and private volunteer organizations.

c. Protection is a primary concern as the enemy has the ability and intent to disrupt support operations. The enemy will exploit systemic vulnerabilities to deny the use of air and sea ports of debarkation, limit full and secure access to the distribution network, and compromise key logistics nodes. The enemy may employ a variety of methods to delay, disrupt, or destroy convoys in an effort to fracture resolve and morale. A greater reliance on innovative delivery platforms will help mitigate the impact the enemy may have on future sustaining operations.

d. The challenge to sustain places a premium on the reduction of sustainment requirements. Sustaining forces as described in this concept will be difficult if the future Modular Force requires its current volume of sustainment, particularly fuel, power, and munitions. Weight and cube reduction across all classes of supply, simplified packaging and materiel handling, increased commonality in equipment and platform characteristics, and improvement in the reliability and maintainability of major end items will ease sustainment burdens. These kinds of advances will also facilitate reductions in logistical infrastructure, while increasing the operational agility of the force. Selected requirements may be minimized through the use of reachback, further reducing the sustainment footprint.

4-3. Strategic

a. Future operations will require a joint sustainment system that capitalizes on the ability of the Nation and the Army to provide capability packages tailored for specific purposes, leverage Service competencies to mitigate vulnerabilities, and provide an increased measure of scalability.

b. The future operational environment will be increasingly complex with adversaries utilizing irregular, disruptive and even catastrophic means to degrade our ability to shape and enter the JOA. At the strategic level, the future Modular Force must change the way it thinks about and plans for operations. Future Modular Force commanders and planners will utilize more robust C2 systems interconnected with networks and organizations from the National strategic to the tactical level. An integrated joint logistics C2 system will link the Services and

ensure future joint sustainment efforts are synchronized in time and purpose in providing distributed support and sustainment and freedom of action (see fig 4-1).



Figure 4-1. Strategic Sustain

c. The ability to deploy and employ is critical to the success of the future Modular Force. Current intratheater lift is stretched beyond its limits to accommodate the more distributed and noncontiguous operations. Lacking organic strategic lift, the Army can neither deploy, nor sustain itself without the support of the other Services, nor can it meet the challenges of an expeditionary Army, without a clear commitment to the single joint logistics system. This means there must be absolute and unwavering trust between Services, particularly between the supported and the supporting organization. Fielding advanced lift and delivery platforms, not dependent on improved ports will enable future Modular Force formations to deploy in combat ready, unit configurations in a matter of days rather than weeks.

d. Distribution from the continental U.S. to the theater will be managed by USTRANSCOM, the distribution process owner tasked with arranging joint distribution operations in time, space, and purpose to ensure the sustainment of forces to combatant commands in accordance with the National and multi-national military strategy and the combatant commander's needs. This task includes both the vertical and horizontal integration of all joint distribution activities and ensures that all joint and non-DOD resources are effectively employed. This task includes providing oversight for activities designed to emplace processes, and systems to ensure propriety and legality. The desired end state is a joint and integrated approach, from point of origin to point of need, supply chain management and decision support that delivers the right supplies to the point of need, at the desired time. The supported combatant command will set the requirements and

will play a major role in preempting redundant and inaccurate sustainment demand and provide discipline to the distribution system.

c. The future Modular Force's reliance on air and sea delivery and advanced distribution platforms places a heavy burden on air and sea sustainment operations. A full range of air and sea capabilities are essential to sustainment operations. Innovative delivery must be available even for routine sustainment operations, as legacy fixed wing platforms are not always appropriate for all sustainment operations. The integrated contributions of air, sea, and land transportation modes, coordinated in a coherent manner and in collaboration with the supported force, will sustain the high tempo operations prosecuted by the future Modular Force.

d. Consumption will decrease due to such measures as: increased parts and platforms commonality, enhanced reliability and fuel efficiency, future innovations in power generation and alternative fuels, water generation devices, advanced tagging and tracking devices to preclude redundant ordering of supplies, the use of tailored packages, and the fielding of enablers, such as, robotics and logistics automation tools that increase overall supply efficiency.

e. Sufficient joint operational engineer support will be required to achieve strategic and operational ground, sea, and aerial ports of entry and enable LOCs. Reachback for selected general and geospatial engineering capabilities will be used whenever viable to reduce the footprint created by these elements.

f. Civilians, contractors, contracted support, host nation support, and the existing commercial environment play a vital part in sustainment of the future Modular Force. Contingency contracting officers accompanying the future Modular Force will augment the commander's organic logistics capabilities. Integrated with organic support, the commander may draw support from the host nation for services that may include transportation of people and cargo, infrastructure creation or sustainment, seaport and aerial port operations, and maintenance.

g. The operational concept of simultaneous, high-tempo, noncontiguous operations distributed widely throughout the JOA presents significant challenges to sustainability of the employed units. Continued development of technologies that contribute effective military logistic capability will underpin transformation needed to sustain the continuous, large scale operations described in this concept and the Army capstone.

4-5. Tactical

a. At the tactical level, sustainment will combine routine distribution operations, occurring in pulses aligned with operations or missions. Committed forces are deliberately cycled into and out of battle for mission staging and in-stride replenishment, along with rapid, precision delivery of non-routine support during emergencies. Sustaining organization must adapt, coordinate, and respond to changing tactical requirements (see fig 4-3).



Figure 4-3. Tactical Sustain

b. Emerging capabilities improve reliability and maintainability in the future Modular Force. Incorporating tailored packages to the greatest extent practicable introduces efficiencies in materiel handling that may result in improved distribution throughput and a reduced logistics footprint.

c. Demand reduction is supported at the tactical level by improvements in commonality, reliability, maintainability, and advances in water generation, combat and support platforms, fuel efficiency, fuel alternatives, and power generation. The more reliable and readily available the support, the less likely the campaign will incur operational pauses due to sustainment issues.

d. Future Modular Force formations at the lowest tactical levels will have organic combined arms capabilities and functions that currently reside at higher echelons, such as combined arms battalions with brigade-like capabilities. This migration of combined arms capabilities and functions generates a requirement for increased logistics capabilities at the lowest tactical levels, requiring new methods of supporting the force.

e. Divisions will be allocated support from the theater logistic headquarters in the form of a modular organization structured to provide for operational requirements. These aligned capabilities evolve over time as operational conditions and missions change. In major combat operations, divisions rotate their BCTs through battle and replenishment cycles (mission staging) to avoid unplanned operational pauses and maintain continuous operations. BCTs will be supported by an organic sustainment unit and embedded logistics assets to provide forward support and in-stride replenishment. The high tempo and extended distances over which forces will operate demand organic capabilities able to sustain mobile, agile, and durable brigades.

f. For stability operations characterized by lower operational tempo with the majority of action at battalion level and below, rotational cycles will descend to levels below the BCT. However, it is more likely that sustainment of forces in stability operations will assume more of a continuous character and BCT sustainment capabilities may be augmented to address the specific requirements of that environment.

g. For both major combat operations and stability operations, a noncontiguous battlefield framework will introduce challenges to the security of GLOCs, particularly if the scale of operations and insufficient force density make it impractical to maintain continuous GLOCs. In those situations, division and brigade commanders will take special measures to open, secure, and close GLOCs, as required, while the force overall expands its reliance on air lines of communication to sustain forward elements. To be most effective, air sustainment capabilities will deliver tailored packages in direct proximity to the using tactical unit. In addition to its aligned capabilities for air sustainment, the future Modular Force will be further augmented by the employment of heavy lift vertical take off and landing, super short take off and landing, short take off and landing aircraft, and precision airdrop. Combat engineering is selectively employed along with general and geospatial engineering to enable GLOCs, air LOCs, and sea LOCs, as applicable to support the tactical force. This includes requirements for route clearance in support of convoy operations.

h. The tactical distribution effort will focus on sustaining the brigade, often operating across a substantial AO. Tactical distribution is about the delivery of supplies, personnel, and equipment from within the theater to point of need. Achieving this requires a transformed distribution system that integrates new organizations, new processes (some consistent with industry), and an infrastructure that shares data from the Soldier operating at the unit level across the distribution enterprise. Assured communications, shared, accurate, and timely distribution information across the enterprise, and reliable communications and tracking capabilities embedded into distribution platforms are essential to modernizing theater distribution and sustaining the future Modular Force. Again, contingency contracting officers accompanying the force will augment the commander's organic support.

4-6. Support to Multi-national Forces

a. Multi-national operations will be the norm in the future making multi-national interoperability critical. U.S. forces will often fight in concert with regional allies and coalition partners increasing combat power and affecting a rapid, desired resolution of conflict. Currently, sustaining the force is a national responsibility and requires Acquisition and Cross Servicing Agreements or Foreign Military Sales arrangements be in place before the U.S. may provide support. The U.S. must improve multi-national doctrine, concepts, processes, and procedures for conducting effective and efficient sustaining operations in a multi-national environment.

b. Multi-national support calls for burden sharing among nations, increased operational efficiency, reduced multi-national sustainment footprint, stronger regional contact, and lower costs for combat or international peace operations. Major 21st-century challenges in multi-national operations include facing challenges as an integrated and collaborative effort, defining clear lines of C2, developing interoperable logistics communications, improving asset visibility,

providing accurate and timely logistics status, and effective logistics reporting methods. The Army must also recognize the need for, and challenge of, interoperability among agencies, industry, and non-governmental organizations, particularly in the multi-national environments.

Chapter 5

Required Future Modular Force Capabilities

5-1. Introduction

a. Future Modular Force sustainment is predicated on the adoption of new and improved, systems, platforms, and capabilities to enable a more rapid, precise, and responsive sustainment capability for the JFC. This chapter identifies the required capabilities that will subsequently be developed using the concept capability plan and capabilities based assessment, to establish specific DOTMLPF requirements.

b. These required capabilities serve as the foundation of follow-on development, planning, and execution for the future Modular Force and will help drive Army experimentation, influence science, and technology efforts.

5-2. Distribution

a. Joint Publication 4-0, *Doctrine for Logistic Support of Joint Operations* defines distribution, consistent with sustainment of the future Modular Force, as the operational process of synchronizing all elements of the logistics system to deliver the right things, to the right place, at the right time to support the geographic combatant commander. Future Modular Force distribution will be fully integrated in the force deployment process and battle plan, and includes redistribution, redirection, and retrograde; characterized by the multi-directional flow of personnel, equipment, materiel, and units; mode and node operations; container and materiel handling, and protective packaging. Future force distribution will utilize pulsed replenishment during tactical pauses. This is different from planned operational pauses, which are built into the battle rhythm for a unit.

b. Future Modular Force joint distribution is discussed in the *Joint Logistics (Distribution) Joint Integrating Concept*. This concept calls for a joint capable operational level logistics command headquarters that can leverage the joint deployment and distribution enterprise (JDDE) to provide JFCs with the ability to rapidly and effectively move and sustain JFs to support the spectrum of operations. This enterprise, an integrated network of system consisting of assets, materiel, personnel, leaders, organizations, procedures, tools, training, facilities, and doctrine, will enable more effective and efficient distribution focused on providing outputs in support of the JFC. The JDDE will unify joint and Service distribution capabilities, using common rules, tools and processes to produce an integrated distribution capability, synchronized from strategic through tactical operations.

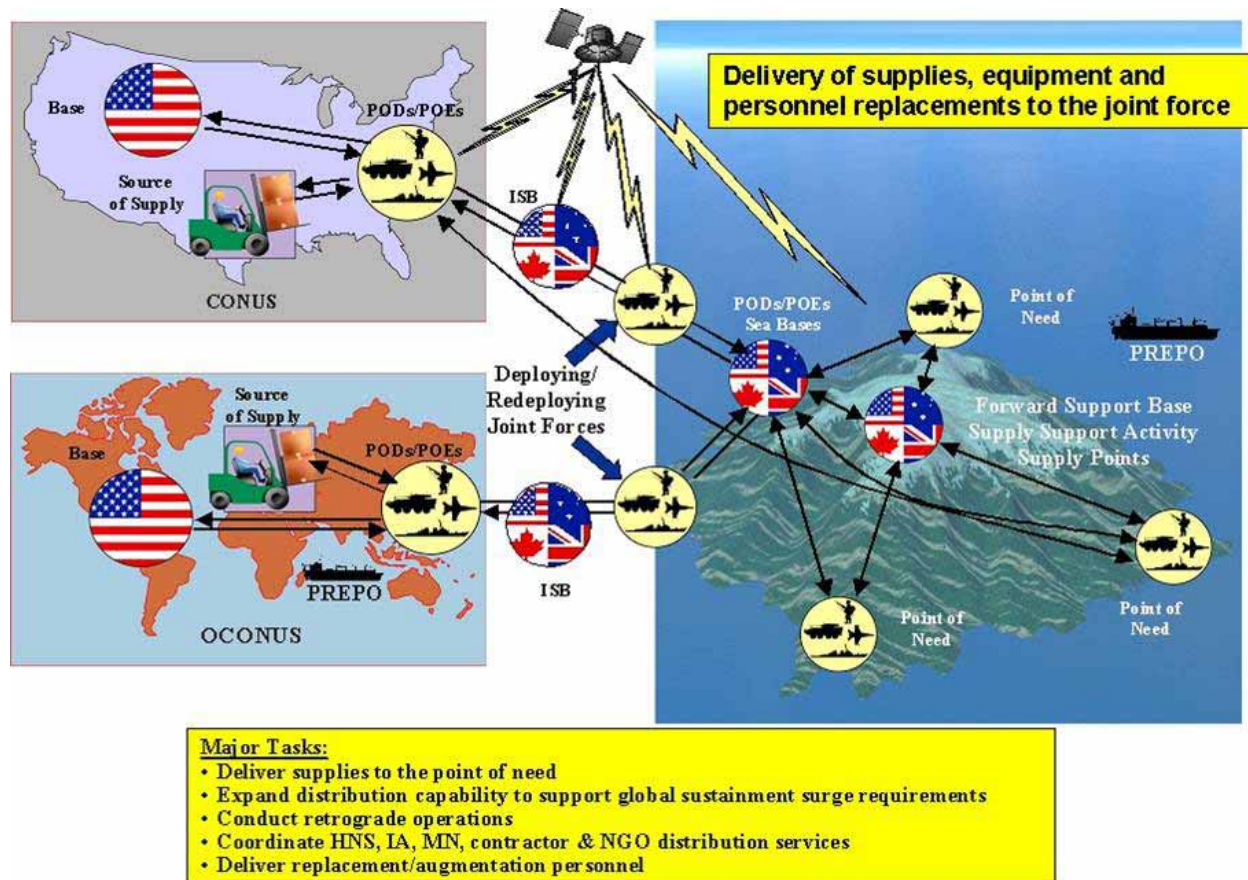


Figure 5-1. Strategic to Operational Distribution

c. Figure 5-1 depicts distribution operations in support of future Modular Force operations. Distribution will be managed as a seamless process, utilizing a network of nodes and modes. It is managed by organizations at the strategic, operational, and tactical levels, which are connected by a robust communications capability monitoring and managing distribution in near real-time from strategic locations to point of need. The network is comprised of two primary segments, strategic and theater. USTRANSCOM will be responsible for control and coordination of the strategic leg, and a joint or JFC designated Service capable organization such as the operational level logistics command will be responsible for theater distribution control and coordination.

d. Future Modular Force distribution operations emphasize speed, precision, accuracy, visibility, and centralized management with minimum essential forward stockage. It provides for the multi-directional flow of personnel, equipment, materiel, and units from origin to point of employment or consumption.

e. Future distribution will be planned and conducted collaboratively in real-time, so it is transparent and allows users the ability to affect and see what is in the network at all times. Distribution transparency provides increased reliability and confidence in the network. If it is visible within the network, the end user believes it will arrive (see fig 5-2). Transparency reduces redundant orders and unnecessary forward stockpiles in the AO. Future distribution will be underpinned by a network enabled architecture that supports a COP and provides real-time

visibility and decision support systems that allow automated and human-induced decisions, which consistently support high tempo operations.

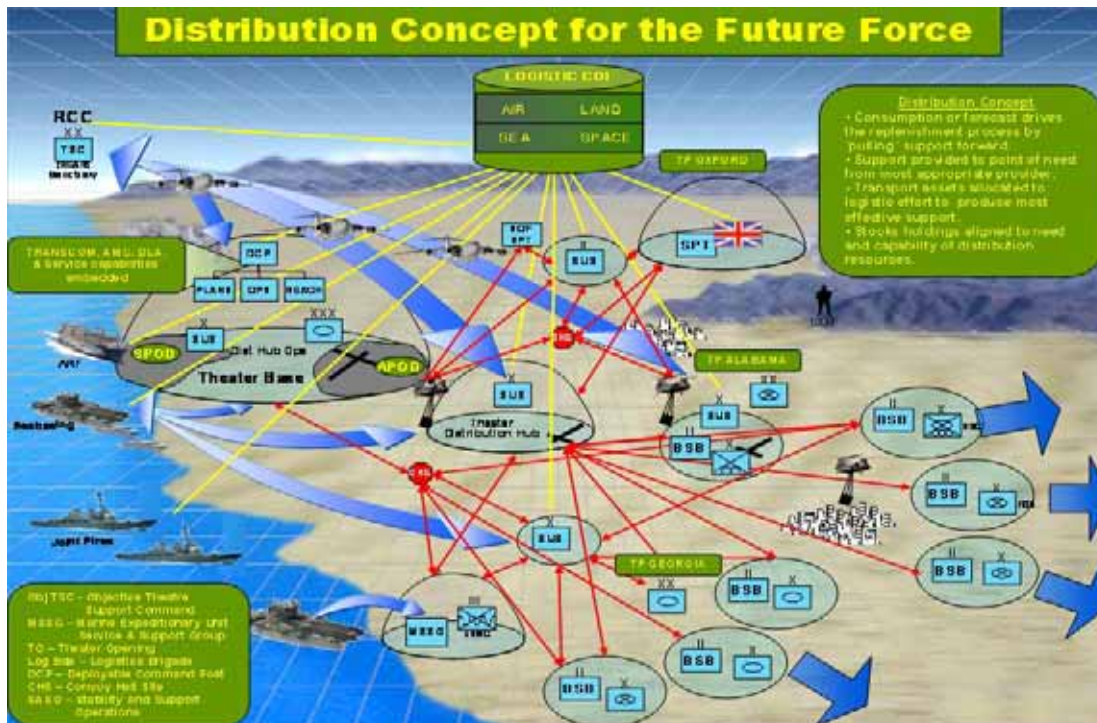


Figure 5-2. Distribution Concept for the Future Modular Force

f. Future concepts evolve distribution to a series of distribution managers at the strategic, operational, and tactical levels, who ensure unity of effort. Each distribution manager directs the flow throughout the segment of the network they control using information available from the COP that provides a network-wide view of distribution operations. A single distribution manager in a distribution management center at each operational echelon will interact as appropriate to support the geographic combatant commander. The strategic level manager centrally controls the distribution network in support of the Secretary of Defense, the Joint Chiefs of Staff, and Service components. The operational level manager, working at the theater, future Modular Force Army, or joint force land component commander level, controls the flow of personnel, equipment, and materiel entering, exiting, and moving within the regional combatant commander’s JOA. Tactical level distribution managers, working in the brigade support battalions (BSBs), manage in accordance with the designated tactical commander’s priorities.

g. Distribution operations in the future Modular Force will be characterized by improved force protection facilitated through improvements in the armoring of vehicles, convoy survivability, unmanned aircraft systems (UASs), and protection of logistics bases. Distribution operations will be more adaptable and dynamic, with the strengthening of C2 (not only of assets but units) and a dramatic improvement in tactical competency for logisticians through evolutions in training techniques.

h. Intratheater distribution by air will be more common and frequent. Aerial distribution will employ fixed wing, rotary wing, UASs, air, land, airdrop, and sling load cargo options to provide a more responsive service that reduces exposure to interdiction by adversaries. Airdrop operations provide the ability to distribute cargo using parachutes and platforms that release supplies and equipment from stand off distances. Innovations in airdrop methods allow for support from greater distances and from higher altitudes with increased accuracies, including an autonomously guided precision airdrop system. Low altitude airdrop capabilities provide even greater on ground accuracy and reduced airdrop equipment costs. The use of UAS as a supply distribution platform will provide an increased stand off launch range for delivery of high priority items in all weather conditions and by day or night.

i. Capabilities required for *distribution* include, but are not limited to-³

(1) *Doctrine*. The future Modular Force requires the capability to develop distribution doctrine that addresses future joint force distribution operations in an expeditionary setting, where dispersed mobile forces will operate in austere locations over large AOs, across FSO. The future Modular Force requires the capability to develop doctrine that addresses distribution in a multi-national environment in the context of the JOA, to provide distributed sustainment in FSO.

(2) *Organizations*. The future Modular Force requires the capability for a single joint capable logistics C2 headquarters to coordinate distribution operations in the context of the JOA, to provide distributed sustainment in FSO. The future Modular Force requires the capability to integrate joint, Service, and commercial distribution capabilities in order to operate as an output focused enterprise across the JOE, to provide distributed sustainment in FSO.

(3) *Training*. The future Modular Force requires joint, multi-national, and interagency integrated collective training for all individuals in affected assignments in the context of the JOE, to provide distributed sustainment in FSO. The future Modular Force requires new distribution systems and joint organizational training in the context of the JOE, to provide distributed sustainment in FSO.

(4) *Materiel*

(a) The future Modular Force requires the capability to rapidly deliver intertheater sustainment and materiel by sea from strategic distance in the context of the JOE, to provide distributed sustainment in FSO. The future Modular Force requires the capability to rapidly deliver intratheater sustainment and materiel by sea across the JOA, to established and austere ports to provide distributed sustainment in ROMO. The future Modular Force requires the capability to develop operational, tactical, and strategic capabilities that can rapidly deploy forces, equipment, and materiel from strategic distance then support these forces across the JOE, to provide distributed sustainment in FSO. The future Modular Force requires the capability to distribute sustainment to dispersed locations (with limited infrastructure), using improved tactically agile vehicle platforms and advanced fixed and rotary wing lift platforms that can operate from and to austere locations in the JOE, to provide distributed sustainment in FSO. The future Modular Force requires the capability to deliver forces, equipment, and materiel using

³ Capabilities further described and defined in Distribution Operations for the Future Modular Force Concept Capability Plan, version 7.

precision aerial delivery and UAS in the context of a JOE, to provide distributed sustainment in FSO. The future Modular Force requires the capability to develop common distribution rules, tools and procedures, and standards and measures of effectiveness in the context of a JOE, to provide distributed sustainment in FSO. The future Modular Force requires the capability to improve convoy internal and external communications capabilities in the context of a JOE, to provide distributed sustainment in FSO.

(b) The future Modular Force requires the capability to develop improved crew and vehicle protection systems in the context of a JOE, to provide distributed sustainment in FSO. The future Modular Force requires the capability to develop and utilize robotic ground distribution capability that can operate in all types of complex terrain in the context of a JOE, to provide distributed sustainment in FSO. The future Modular Force requires the capability to develop a modular intermodal distribution capability in the context of a JOE, to provide distributed sustainment in FSO. The future Modular Force requires the capability to develop improved autonomous and crewed protected material handling equipment for new platforms in the context of a JOE, to provide distributed sustainment in FSO. The future Modular Force requires the capability to develop common vehicles systems that improve spares commonality and improve availability in the context of a JOE, to provide distributed sustainment in FSO.

(c) The future Modular Force requires the capability to develop automated improvised explosive device and mine detection and suppression systems in the context of a JOE, to provide distributed sustainment in FSO. The future Modular Force requires the capability to develop embedded prognostics and diagnostics systems that enable proactive materiel management in the context of a JOE, to provide distributed sustainment in FSO. The future Modular Force requires the capability to develop common intelligent protective packaging that complements emerging intermodal distribution capability in the context of a JOE, in order to provide distributed sustainment in FSO. The future Modular Force requires improved C2 and logistic information systems that enable real time collaborative planning; provide asset and resource visibility; present information on a real-time COP, and supports COA analysis and automated decision support systems in the context of a JOE, to provide distributed sustainment in FSO. The future Modular Force requires the capability to employ robotic technology in packaging, loading and off-loading operations in the context of a JOE, to provide distributed sustainment in FSO.

(5) *Leadership and Education.* The future Modular Force requires the capabilities to develop adaptive and innovative leaders and a greater emphasis on junior leader development in the context of a JOE, to provide distributed sustainment in FSO. The future Modular Force requires the capability to develop leaders trained and experienced in joint and multi-national logistic operations in the context of a JOE, in order to provide distributed sustainment in FSO.

(6) *Personnel.* The future Modular Force requires the capability to develop multi-skilled Soldiers capable of executing an array of interrelated mission tasks and employing advanced technologies and innovations in the context of a JOE, to provide distributed sustainment in FSO. The future Modular Force requires the capability to develop Soldiers with the ability to look at operations through the lens of a maneuver commander in the context of a JOE, to provide distributed sustainment in FSO.

(7) *Facilities.* The future Modular Force requires the capability to build state-of-the-art distribution and storage facilities for complex equipment in the context of a JOE, to provide distributed sustainment in FSO. The future Modular Force requires the capability to build new facilities for training on new and complex systems in the context of the JOE, to provide distributed sustainment in FSO. The future Modular Force requires the capability to build infrastructure to support specialized skills modular units in the context of a JOE, to provide distributed sustainment in FSO.

5-3. Supply and Field Service Support

a. Sustain operations in the future Modular Force blend strategic and operational sustainment. It is an extension of the strategic flow from point of origin to the unit level providing continuous support without requiring extensive force buildup or risk of shortage driven operational pauses. Future Modular Force sustainment operations include the related tasks and systems that provide support and services, which ensure freedom of action, extend operational reach, and prolong endurance. It includes those tasks associated with supply and field service support, maintenance support, health service support, transportation, necessary related engineering support, Soldier support, and aviation logistics support.

b. Supply and field services support consists of wide ranging functions that extend from compiling requirements at the strategic level to delivering items and services to satisfy user demand at the tactical level. Supply involves acquiring, managing, receiving, storing, and issuing all classes of supply, except class VIII. Field services consist of clothing exchange, laundry and shower support, textile repair, mortuary affairs, preparation for aerial delivery, food services and field feeding, billeting, sanitation, issuing potable water, and base camp operations.

(1) Field services support to the future Modular Force BCTs may be limited to mortuary affairs, aerial delivery, and the issuance of potable water during major combat operations. Other field service support (laundry, shower, field feeding) will be provided as METT-TC allows, but predominately during external replenishment operations (ERO). Supplying the future Modular Force will be more problematic, due to anticipated extended distances within the noncontiguous JOE. Aerial delivery (helicopter, vertical or short takeoff and landing, UAS), sling loading, and precision airdrops will be used regularly, and where appropriate, to supply the future Modular Force.

(2) As future operations will be dynamic, distributed, and simultaneous, sustainment for these operations must be tailored to support the operational rhythm of the supported units. Maneuver units will receive sustainment support ERO, sustainment replenishment operations (SRO), and combat replenishment operations (CRO). Organizations located at echelons above brigade conduct ERO to resupply the BSB. For example, water supply forces will be structured to incrementally deploy. Operational level water supply and distribution capability is located in the combat sustainment support battalions located in the sustainment brigade. These battalions will have modular units comprised of water production, storage, and distribution elements. In arid environments, they also include line haul water transportation units. These battalions will be capable of producing, storing, packaging, and distributing potable water (including bottled and packaged) to supported forces in all environments. At the tactical level, brigade water

requirements may be met by modular water support units with the capability to produce, store, and distribute potable water. A smaller, lighter potable water production capability will provide water supply for remote units.

(3) Like water, fuel units will be modular, designed with interchangeable, expandable, and tailorable elements to provide a means of rapidly identifying, mobilizing, and providing fully mission-capable operational elements. These capabilities are integrate into modular units capable of sustaining Soldiers in a noncontiguous combat environment. Future Modular Forces conducting simultaneous and multidimensional operations on noncontiguous battlefields will be supported by organic fuel support personnel conducting unit distribution to combat teams and logistics release points. Fuel teams in the BCT are provided from a BSB. Other organizations on the battlefield will be supported by supply point distribution. Sustainment units will distribute fuel using tank rack systems or tankers to other major users.

(4) As a theater matures and fuel demand requirements increase, additional capability modules must be made available through additional structure and or the employment of alternate fuels. The development of viable synthetic fuels is critical, as they are cleaner, less volatile, and safer than petroleum based fuels, and less likely to be held hostage by the political whims of oil producing nations.

c. Capabilities required for supply and field service support include, but are not limited to-

(1) *Doctrine.* The future Modular Force requires the capability to review relevant doctrine to capture new developments in supply and field service support, including the use of advanced technologies and equipment in the context of a JOE, to provide distributed sustainment in FSO. The future Modular Force requires the capability to articulate procedures designed to support a joint system and the interface with other Services, agencies, allied, and coalition forces in the context of a JOE, to provide distributed sustainment in FSO. The future Modular Force requires the capability to capture new material designs and acquisition strategies in the context of a JOE, to provide distributed sustainment in FSO. The future Modular Force requires the capability to capture force design updates in the context of a JOE, to provide distributed sustainment in FSO.

(2) *Organizations.* The future Modular Force requires the capability to coordinate and control all supply and field service support distribution and management operations, including water, petroleum, mortuary affairs, feeding, shower, clothing, laundry, in the context of a JOE, in order to provide distributed support and sustainment in FSO. The future Modular force requires the capability create smaller personnel modules to coordinate and operate rapidly deployable modular Force Provider units in the context of the JOE, to provide sustained Soldier support in FSO. The future Modular Force requires the capability to develop liaison and coordination functions for bulk petroleum support between U.S., allied forces, and host nation in the context of a JOE, to provide distributed sustainment in FSO.

(3) *Training.* The future Modular Force requires the capability to develop joint, multi-national, and interagency integrated collective training for all individuals in affected assignments in the context of a JOE, to provide distributed sustainment in FSO. The future Modular Force

requires the capability to design and institute training practices and philosophies relevant within the context of the JOE, to provide distributed sustainment for FSO.

(4) *Materiel*

(a) The future Modular Force requires the capability to produce, deliver, distribute, purify, and store potable water within the context of the JOE, to provide distributed sustainment for FSO. The future Modular Force requires the capability to protect water storage and distribution equipment and water sources from damage caused by freezing, overheating, and contamination, and from lethal and non-lethal attacks in the context of a JOE, to provide distributed sustainment in FSO. The future Modular Force requires the capability to develop automated support tools to determine water requirements, and to provide quality assurance for all water products in the context of a JOE, to provide distributed sustainment in FSO. The future Modular Force requires the ability to augment water in arid environments in the context of a JOE, to provide distributed sustainment in FSO. The future Modular Force requires the capability to provide both ice and prepackaged water in the context of the JOE, to provide Soldier support across ROMO. The future Modular Force requires the capability to test and treat contaminated water in a chemical, biological, radiological, and nuclear (CBRN) environment, and support CBRN decontamination operations in the context of a JOE, to provide distributed sustainment in FSO.

(b) The future Modular Force requires the capabilities to transport, deliver, distribute, store, and test bulk fuel in the context of the JOE, to provide distributed sustainment in FSO. The future Modular Force requires the capability to develop synthetic fuels that are cleaner, less volatile, and safer than petroleum-based fuels in the context of the JOE, to provide distributed sustainment in FSO. The future Modular Force requires the ability to mix appropriate military specification additives with commercial Jet A1 to make JP8 in the context of the JOE, to provide distributed sustainment in FSO. The future Modular Force requires the capability to develop a UAS capability for moving small quantities of packaged fuel for use by tactical forces in the BCT, and providing over watch on pipelines in the context of a JOE, to provide distributed sustainment in FSO. The future Modular Force requires the capability to create a fuel oil reutilization and waste reutilization system (composting, or waste to energy) in the context of a JOE, to provide distributed sustainment in FSO.

(c) The future Modular Force requires the capability to provide in theater oil analysis support for aeronautical and limited non-aeronautical equipment in the context of a JOE, to provide distributed sustainment in FSO. The future Modular Force requires the capability to develop fuel procedures to meet applicable environmental standards in the context of a JOE, to provide distributed sustainment in FSO. The future Modular Force requires the capability to develop automated support tools to determine fuel needs based in the context of a JOE, to provide distributed sustainment in FSO.

(d) The future Modular Force requires the capability to prosecute the business of mortuary affairs, including operating mortuary affairs collection points (MACP), collecting personal effects, evacuating remains and personal effects, and operating temporary internment sites in the context of the JOE, to provide distributed sustainment during FSO. The future

Modular Force requires the capability to prosecute mortuary affairs in a CBRN and high yield explosive (CBRNE) environment in the context of a JOE, to provide distributed support in FSO. The future Modular Force requires the capability for an advanced laundry system in the context of the JOE, to provide distributed support in the FSO.

(e) The future Modular Force requires the capability to store, issue, refrigerate, and deliver perishable goods (when appropriate), in classes I, II, III (P), IV, V, VI, VII, and IX in the context of a JOE, to provide distributed sustainment in FSO. The future Modular Force requires the capability to improve tactical kitchen in terms of mobility, energy efficiency, and environment in the context of a JOE, to provide distributed sustainment in FSO. The future Modular Force requires the capability to provide field feeding, including hot meal, operational rations, and heat on the move rations in the context of a JOE, to provide distributed sustainment in FSO. The future Modular Force requires the capability to receive, store, build, and coordinate distribution of mixed ration loads tailored to customer requirements in the context of a JOE, to provide distributed sustainment in FSO. The future Modular Force requires the capability to sanitize food preparation areas and serving equipment and in the context of a JOE, to provide distributed sustainment in FSO. The future Modular Force requires the capability to reduce field feeding waste on the battlefield in the context of a JOE, to provide distributed sustainment in FSO.

(f) The future Modular Force requires the capability to provide lift for individual and containerized items in the context of a JOE, in order to provide distributed sustainment in FSO. The future Modular Force requires the capability to identify reduced shelf life supplies in the context of a JOE, to provide distributed sustainment in FSO. The future Modular Force requires the capability to automatically forecast, order, and track subsistence with active and passive radio frequency identification in the context of a JOE, to provide distributed sustainment in FSO. The future Modular Force requires the capability to receive, store, issue, and use passive radio frequency identification tags in the context of a JOE, to provide distributed sustainment in FSO.

(g) The future Modular force requires the capability to package supplies for forward, lateral, and retrograde operations in the context of a JOE, to provide distributed sustainment in FSO. The future Modular Force requires the capability to provide direct support of shower, laundry, and clothing repair to Soldiers in the context of a JOE, to provide distributed sustainment in FSO. The future Modular Force requires the capability to reutilize used waste oil in the context of a JOE, in order to provide distributed support and sustainment. The future Modular Force requires the capability to develop alternate power systems lasting longer than batteries in the context of a JOE, to provide distributed sustainment in FSO.

(h) The future Modular Force requires the capability to develop an electronic mail postal system and a sorting capability that sorts letter mail in the continental U.S. in the context of a JOE, to provide distributed sustainment in FSO. The future Modular Force requires the capability to receive, store, maintain, issue, and, de-process class VII items of equipment in the context of a JOE, to provide for distributed sustainment in FSO. The future Modular Force requires the capability to operate a map storage site to receive, store, maintain, and issue stocks of maps and map products and to prepare maps for distribution in the context of a JOE, to

provide distributed sustainment in FSO. The future Modular Force requires robotic technology in the context of the JOE, to mitigate Soldier risk in delivering sustainment in FSO.

(5) *Leadership and Education.* The future Modular Force requires the capability to develop adaptive, innovative leaders who can function at joint and multi-national levels in the context of a JOE, to provide distributed sustainment in FSO. The future Modular Force requires the capability to provide greater emphasis on junior leader development in the context of a JOE, to provide distributed sustainment in FSO.

(6) *Personnel.* The future Modular Force requires the capability to coordinate and operate rapidly deployable modular Force Provider units in the context of a JOE, to provide distributed sustainment in FSO. The future Modular Force requires the capability to integrate current Force Provider functions into smaller personnel modules in the context of a JOE, to provide distributed sustainment in FSO.

(7) *Facilities.* The future Modular Force requires the capability to coordinate and operate a base camp facility with climate controlled billeting, food service support, shower and latrine facilities, laundry service, and morale, welfare, and recreation facilities in the context of a JOE, to provide distributed support and sustainment. The future Modular Force requires the capability to provide petroleum pipeline and terminal facilities for receiving, storing, issuing, and distributing bulk petroleum products in the context of the JOE, to provide distributed sustainment in FSO.

5-4. Maintenance Support

a. Success in the future joint operational environment demands the future Modular Force maintain, recover, repair, or replace equipment within the operational tempo. Effective maintenance practices, forward positioning of maintenance units, effective and available repair parts and equipment replacement systems, and established and near real-time priorities for recovery and repair are vital. Theater policies about repair, evacuation, sufficient sustainment repair, and replacement facilities are critical for campaign success. This concept covers the entire spectrum of future Modular Force ordnance sustainment, including maintenance. It also speaks to explosive ordnance disposal and ammunition support.

b. Maintenance support to the future Modular Force will rely on a logistics architecture that stretches from point of origin to the point of employment or consumption, and links onboard equipment sensors to sense and respond logistics. Support will be modular, joint, and multi-national capable.

c. Maintenance support to the future Modular Force is predicated on two levels of maintenance (field and sustainment). Field maintenance incorporates *pit stop* engineering which emphasizes the plug and play designs in new systems. Field maintenance will be characterized as on system maintenance and return to the user and will be conducted as far forward as possible in the operational environment in order to reduce the requirements for evacuation.

d. The future logistics maintenance systems will be proactive versus reactive. It will anticipate requirements through the use of embedded prognostics and initiate corrective responses prior to system failure or shortage occurs. Should a system failure occur the on board diagnostics sensors will unambiguously identify the failed component or module. On board sensors electronically linked to the combat commander's information system and the logistic battle command's information system, will allow commanders a force wide view of organic capabilities. The multi-directional flow capability of the future distribution system will be utilized to move reconstituted, repaired, or requested equipment to where it is needed to support mission requirements.

e. Sustainment maintenance will be characterized as off system maintenance with return of components and end items to the supply system. In the future Modular Force, sustainment maintenance will be conducted primarily at the strategic level with the intent of only deploying sustainment activities necessary to support METT-TC, system requirements, and surge capabilities. Sustainment maintenance will be conducted by Soldiers, DA civilians, and through contractor logistics support.

f. Capabilities required for maintenance support include, but are not limited to-

(1) *Doctrine*. The future Modular Force requires the capability to review relevant doctrine to capture new maintenance practices and organizations in the context of a JOE, to provide distributed sustainment in FSO. The future Modular Force requires the capability to articulate procedures designed to support a joint system and the interface with other Services, agencies, allied, and coalition forces in the context of a JOE, to provide distributed sustainment in FSO. The future Modular Force requires the capability to capture new material designs and acquisition strategies in the context of a JOE, to provide distributed sustainment in FSO. The future Modular Force requires the capability to capture force design updates in the context of a JOE, to provide distributed sustainment in FSO.

(2) *Organizations*. The future Modular Force requires the capability to create a modular maintenance organization tailored to meet deployment and mobility considerations in the context of a JOE, to provide distributed sustainment in FSO. The future Modular Force requires the capability to develop a new modular maintenance organization that supports supply or distribution point equipment exchange in the context of a JOE, to provide distributed sustainment in FSO. The future Modular Force requires the capability for a collection and classification platoon to enhance the return of repairable parts and items in the context of a JOE, to provide distributed sustainment in FSO.

(3) *Training*. The future Modular Force requires the capability to develop joint, multi-national, and interagency integrated collective training for all individuals in affected assignments in the context of a JOE, to provide distributed sustainment in FSO. The future Modular Force requires the capability to design and institute training practices and philosophies relevant within the context of the JOE, to provide distributed sustainment for FSO.

(4) *Materiel*

(a) The future Modular Force requires the capability to incorporate embedded diagnostic and prognostic technologies within an anticipatory sense and respond equipment monitoring system into all major weapons and systems in the context of a JOE, to provide distributed support in FSO. The future Modular Force requires the capability to collect, monitor, and store maintenance data in the context of a JOE, to provide distributed sustainment in FSO. The future Modular force requires the capability to create automation tools that monitor equipment status, the disposition of resources in the distribution system, and the capability and capacity of maintenance activities, and collect demand history and usage rates in the context of the JOE, to provide distributed sustainment in FSO. The future Modular Force requires the capability to fit equipment with identification chips in the context of a JOE, to provide distributed sustainment in FSO. The future Modular Force requires the capability for redesigned special tools that reduce weight and cube and the repair cycle in the context of a JOE, to provide distributed sustainment in FSO.

(b) The future Modular Force requires the capability to develop highly mobile maintenance unit modules to transport all required tools and test equipment in the context of a JOE, to provide distributed support in FSO. The future Modular force requires the capability to design digitized Class IX replacement parts and associated components with limited packing and crating requirements in the context of a JOE, to provide distributed sustainment in FSO. The future Modular Force requires the capability to replicate needed components or repair parts at or near the point of need or failure in the context of a JOE, to provide distributed sustainment in FSO. The future Modular Force requires the capabilities of maintenance and recovery vehicles equipped with efficient, compact tools; capable of limited reconfiguration; and that have the ability to tow like, similar, or smaller systems; which are equipped with robotic maintenance assistance devices, voice-activated remote controls, position navigation equipment, and off vehicle communications in the context of a JOE, to provide distributed sustainment in FSO. The future Modular Force requires the capability for a vehicle with enhanced cross-country mobility, reliable communications, and weapons and is air transportable in the context of a JOE, to provide distributed sustainment in FSO.

(c) The future Modular Force requires the capability to develop new acquisition metrics, which measure the maintenance ratio for field maintenance activities in the context of a JOE, to provide distributed sustainment in FSO. The future Modular Force requires the capability to increase reliability and maintainability of materiel systems in the context of a JOE, to provide distributed sustainment in FSO. The future Modular Force requires the capability to develop automation tools and procedures to quickly adjust authorized stockage list based on the demand history in the context of a JOE, to provide distributed sustainment in FSO. The future Modular Force requires the capability to develop repair kit “push packages” that contain replacement parts for a failed component in the context of a JOE, to provide distributed sustainment in FSO. The future Modular Force requires the capability to create digital warehouses to store system software, sensor information, technical data, historical, and system engineering data in the context of a JOE, to provide distributed sustainment in FSO.

(5) *Leadership and Education.* The future Modular Force requires the capability to focus leader education on adaptability, innovation, risk, opportunity, and rapid decisionmaking in the context of a JOE, to provide distributed sustainment in FSO.

(6) *Personnel.* The future Modular Force requires the capability to field new military operational specialties (MOS)⁴ for skills created through technologies and innovations in the context of a JOE, to provide distributed sustainment in FSO. The future Modular Force requires the capability to design units capable of integrating limited numbers of DA civilians and contractors for augmenting maintenance operations in the context of a JOE, to provide distributed sustainment in FSO. The future Modular Force requires the capability to create new support maintenance companies containing a base headquarters, with attached platoon modules in the context of a JOE, to provide distributed sustainment in FSO.

(7) *Facilities.* The future Modular Force requires the capability to add automation support to existing maintenance facilities in the context of a JOE, to provide distributed sustainment in FSO.

g. The future munitions sustainment system must be agile enough to provide munitions resupply to a hybrid force across the entire spectrum of operations. The BCT requires munitions configured differently from modular brigades. Large caliber munitions for selected manned ground vehicles will be supplied in an automated manner, without packaging material, pre-configured for automated loading system handling. Other BCT munitions will be provided by a tactical force without augmentation by munitions Soldiers. Though the future Modular Force possesses a significant munitions handling force structure that enables munitions distribution operations, it requires enablers to effectively perform its mission. Future Modular Force munitions support will also utilize digitized maintenance, armament, and explosive ordnance disposal training, tools, technical materiel, and business practices.

h. Munitions managers in distribution management centers at theater and in logistic formations will share a common picture of unit asset and demand visibility with those at brigade level. Munitions managers at expeditionary support commands and other logistic headquarters nodes will direct munitions load reconfiguration and delivery based on near real-time data feeds. The JDDE will maintain asset visibility for modular force units and platform visibility for the BCT.

i. A larger percentage of munitions will be “smart” and “brilliant” munitions. Brilliant munitions have a capability to selectively identify and engage specific classes of targets. This degree of sophistication offers a significant advantage over guided and smart munitions in that brilliant munitions will have a capability to selectively identify and engage specific classes of targets. While these technologies enable the JF to accomplish the mission, they will challenge the munitions support structure to provide them; where and when needed, and in the right quantity. As the technological complexity of future munitions increases, the competency of munitions Soldiers must keep pace. These Soldiers will perform pre-operational checks of munitions prior to issue and field maintenance of unit returns of munitions containing

⁴ The creation of new MOSs, follows the consolidation of others. There should not be a proliferation of MOSs; it is strictly as needed for new skills.

technologies, such as, limited life batteries, inertial navigation systems, course correcting fuzes, precision guidance kits, and environmentally controlled packaging.

j. Munitions capability requirements include automated support tools to determine munitions requirements for platforms, Soldiers, and units, and to conduct course of action (COA) analysis for resupply operations; automated resupply to future combat systems selected manned ground vehicles without human interface or traditional packaging, and in a “prepare to fire” configuration; and automatically generated munitions expenditure reports to all echelons above the BCT.

5-5. Health Service Support

a. Health service support to the future Modular Force will integrate joint capabilities in the theater and the sustaining base, and will focus on four major tasks. The first is to reduce the incidence of disease and nonbattle injury through sound preventive medicine and health promotion programs. Second, reduce casualties incurred in operations or from combat stress through training programs and early intervention. Third, provide essential medical care and treatment in theater for acute illnesses, injuries, or wounds; evacuating those patients who cannot return to duty within the JOE. Finally, the rapid return to duty of all patients once medically fit. The Army enables this joint medical system through DOTMLPF-derived tactical and operational capabilities that mirror the supporting business enterprise and theater architectures to seamlessly support joint functional concepts.

b. Future Modular Force medicine will maintain its focus on the Soldier, the Army’s greatest asset. The business enterprise architectures and theater architectures yield organizations, training, and leader development capabilities that provide for the sustainment of medical logistics in the sustaining base and theater. The doctrine, training, and leader development of medical logisticians enables medical support to maintain high standards of care, acquire state of the art technology, and ensure the availability of safe and effective pharmaceuticals in a manner that is responsive to the needs of the Soldiers of the future Modular Force.

c. Unlike other aspects of military medicine (infectious disease countermeasures and combat casualty care), military operational medicine (MOM) for the future Modular Force considers Soldier health as a means to an end rather than an end itself. MOM capabilities will be used to provide biomedical solutions to protect Soldiers and enhance their performance in operational and training environments, to include multiple internal and external stressors. These capabilities ultimately protect Soldiers’ physical and mental health, enhance their performance, and provide health service support answers for immediate military decisionmaking.

d. Joint health service support for the future Modular Force presents a continuum of capabilities to provide for a healthy and fit force, prevention of illness and injuries, and world-class medical and rehabilitative care. Capabilities for MOM are contained in the first two pillars and represent arguably the most extensive set of capability requirements in military medicine. MOM seeks to provide biomedical “skin-in” solutions to protect Soldiers and enhance their performance in operational and training environments.

e. Required capabilities for health service support for the future Modular force include, but are not limited to-

(1) *Doctrine*. The future Modular Force requires the capability to capture changes in health service support organizations and doctrine in the context of a JOE, to provide distributed support and sustainment in FSO.

(2) *Organizations*. The future Modular Force requires the capability to support commanders by providing for optimal force performance commensurate with the commander's intent in the context of a JOE, to provide distributed support and sustainment in FSO.

(3) *Training*. The future Modular Force requires the capability to establish and maintain optimal health and fitness through physical, physiological, and nutritional fitness in the context of a JOE, to provide distributed support and sustainment in FSO. The future Modular Force requires the capability to enhance human performance to meet mission requirements by sustaining alertness and cognitive functions in the context of a JOE, to provide distributed support and sustainment in FSO.

(4) *Materiel*. The future Modular Force requires the capability to provide continuous awareness of the force health status through real-time health surveillance and immediate recognition in the context of a JOE, to provide distributed support and sustainment in FSO. The future Modular Force requires the capability to establish and maintain operational, system, and toxic hazard countermeasures that consider physical and psychological effects on the human body in the context of a JOE, to provide distributed support and sustainment in FSO. The future Modular Force requires the capability to establish and maintain geographic hazards countermeasures against heat, cold, and extreme terrestrial altitudes in the context of the JOE, to provide distributed support and sustainment in FSO.

(5) *Leadership and Education*. The future Modular Force requires the capability to promote healthy lifestyles and optimal hydration of the Soldier in the context of the JOE, to provide distributed support and sustainment in FSO. The future Modular Force requires the capability to increase physical endurance, resilience, and strength, and to enhance human tolerance to environmental extremes in the context of the JOE, to provide distributed support and sustainment in FSO. The future Modular Force requires the capabilities to improve cognitive and other psychological functions in the context of a JOE, to provide distributed support and sustainment in FSO.

(6) *Personnel*. The future Modular Force requires the capability to develop and recruit Soldier logisticians who have a greater understanding of health issues in the context of a JOE, to provide distributed support and sustainment in FSO.

5-6. Transportation

a. Transportation operations include planning, coordinating, and executing tasks to employ transportation resources in support of the JFC. This includes transportation terminals, road, rail, water, air (fixed and rotary), and airdrop resources used to move equipment and supplies from

point of origin through the last tactical mile. Army transportation organizations primarily support Army forces through common user land transport. Resources may be used to support the joint theater distribution operation. Army transportation planners and managers, and movement control operators must be familiar with the capabilities of all transportation resources and enabling information systems. Army mode and node operators comprise the joint force's most significant source of common-user land transportation and terminal operations, because no other Service possesses the range and depth of surface transportation operational capabilities. Sister Services are therefore likely to be dependent on Army transportation support in the JOA.

b. Terminal and movement control operations are critical enablers for the synchronized and integrated distribution system needed by the future Modular Forces commander. Though the ground based logistic footprint of the future Modular Force will be optimized by leveraging emerging technologies and employing joint and coalition resources, it will be reduced by improved air and sea based delivery platforms and precision ground support capabilities. However, future Modular Force Army transportation will continue to provide the full range of transportation operations, including multi-modal common-user land and waterborne transportation, full spectrum intermodal cargo operations, and worldwide transportation traffic and distribution management.

c. Army transportation will incorporate military, commercial, coalition, and host nation capabilities (when available and appropriate) and involve both the Active Army and Active Reserve. Transportation support to the future Modular Force is predicated on the successful development and fielding of improved air, road, and water platforms. Future Modular Force transportation units will be a part of "smart distribution," a system of systems to enable future logisticians to provide timely sustainment and operate more efficiently. It consists of three subsystems: the modular platform system, the intelligent load handling system, and the future tactical truck system.

5-7. Soldier Support

a. *Religious support* operations to the future Modular Force provides support to Army and joint, allied, and coalition partners during simultaneous, high-tempo operations on a noncontiguous battlefield and will reinforce the *Warrior Ethos* through the ROMO. Religious support operations will utilize the services and systems within the networked force, especially when personal contact is impossible due to the attributes of the noncontiguous battlefield and the joint operations environment. The network will also allow religious support operations to reach from Family to foxhole.

b. At the Army, division, corps, and BCT levels, religious support teams, consisting of at least one chaplain and one chaplain assistant, will provide religious support on behalf of commanders. Religious support consists of the personal delivery of rites, sacraments, ordinances, pastoral care, counseling, spiritual fitness training, and religious education to Soldiers, their family members, and authorized civilians, in peace and war, worldwide. Chaplains also advise their commanders on unit morale, the impact of local religions on the military mission, and ethics.

c. *Human resources support* (HRS) to the future Modular Force consists of manning, human resources (HR) services, personnel support, and HR planning and staff operations. HRS to the future Modular Force will remain centered on the core competencies presented in FM 1-0, *Human Resource*. These core competencies are: personnel readiness management (PRM), personnel accounting and strength reporting (PASR), personnel information management (PIM), reception, replacement, return to duty, rest/relaxation, redeployment (R5), operations, casualty management operations, essential personnel services (EPS), postal operations, morale, welfare, recreation, and band operations. These core competencies are provided by HR organizations for Soldiers, deployed DA civilians, and some contractors. HR support for family members, non-deployed DA civilians, and retirees is provided by Installation Management Agency resourced garrison support. The priority for HRS to the deployed future Modular Forces will remain PASR, casualty management operations, and R5 operations. A capability is required for a network-centric information system for all future Modular Force HR providers.

d. The emergence of a single joint enabled human resource system database represents access to a joint HR database and will increase efficiencies of the PRM, PASR, PIM and EPS core functions, allowing all components of the Army to operate on the same HR system. HRS will be part of the network-enabled JF, providing timely and accurate support to commanders.

e. *Financial management operations* sustain Army, joint, allied, and coalition forces. The two core processes are finance operations and resource management operations. Table of organization and equipment financial management units conducting finance operations provide timely commercial vendor and contractual payments, provide various pay and disbursing services, maintain battle flexibility for combat units to engage enemy forces and follow policies and guidelines established by the national financial management providers. Resource management operations analyze the commander's tasks and priorities, and identify the resource requirements to enable the commander to accomplish the mission.

f. The future joint financial system enables and integrates the financial capabilities of both the DOD and commercial sector. It enables the distribution and redistribution of scarce common-user commodities between allied and coalition partners to maximize existing acquisition and cross-Service agreements. Additionally, a national inventory policy will allow the redirection of orders and changes in accounting classifications, and will facilitate attaining unprecedented flexibility. The future financial system will provide a single billing capability for end-to-end movement of personnel and material with up front pricing by multiple carriers. These changes will require extensive national policy changes and have broad implications to many organizations.

g. Finance required capabilities include the development of a fully joint financial system and a human resource database system, which allows all Army components and JFs to have common access to a composite HR database.

h. The Judge Advocate General's Corps provides *legal support* to operations. The mission of judge advocates and supporting legal personnel is to provide professional legal services at all echelons of command throughout the ROMO.

i. Legal support to the future Modular Force will incorporate an expeditionary mindset that is focused on delivering accurate and responsive legal support to the deployed commander. Future force legal support will rely heavily on embedded legal personnel at each future force echelon with dedicated information management technology and home station legal expertise and supervision reachback capability.

5-8. Aviation Sustainment Support

a. Army Aviation is a key enabler for the future Modular Force and brings unique capabilities that contribute to the Army's ability to fulfill mission requirements across the ROMO. Army aviation is strategically responsive by either self-deployment or strategic lift and when employed is agile, versatile, lethal, and survivable. Aviation platforms provide the commander with the capability to rapidly move and sustain combat power on multiple targets, throughout the JOA.

b. Aviation support organizations for the future Modular Force will be tailorable, modular in design, rapidly deployable, highly mobile, and fully integrated into the network-enabled system to provide the logistics common operational picture and real-time operational status of aviation systems. These platforms will be linked horizontally across the aviation community and vertically throughout the logistics community.

c. Component modularization will decrease maintenance manpower requirements and repair times, while increasing aircraft readiness. Innovations in aviation technology will produce aircraft with greater functionality and reliability using integrated, diagnostic test equipment, and automated information technology.

d. Army Aviation will possess improved platforms that will be crucial to support both the maneuver and sustainment of the future Modular Force. There will be a greater reliance on aerial distribution as a means of providing responsive and agile support from and to multiple locations within the theater. This, coupled with increased air assault support requirements, to include preparedness for quick repositioning of inserted units and their sustainment, will result in increased aviation lift requirements, as well as, reconnaissance and attack assets for lines of communication security.

e. The two-level maintenance support concept mentioned in paragraph 5-3 will also be utilized by aviation in the future Modular Force. It will be implemented as the aviation fleet is modernized with aircraft designed for two-level, maintenance support and as the supply system is tailored to support two-level maintenance.

f. Integrating emerging enablers and commercial business practices greatly increases the potential benefits of aerial delivery. The future Modular Force will leverage all aerial delivery platforms and techniques available in the most advantageous combination to provide both inter and intratheater sustainment, and is a key enabler for theater distribution for the future Modular Force. The total effect of an integrated logistics aerial resupply system will be to enhance operational responsiveness and agility, improve load survivability, optimize the logistics footprint, and significantly improve force protection.

g. Aviation support capability requirements include, but are not limited to-

(1) *Doctrine*. The future Modular Force requires the capability to capture changes in aviation support in relevant doctrine that articulates how aviation resources may be employed to improve distribution operations within the context of the JOE, to provide distributed sustainment for FSO.

(2) *Organizations*. The future Modular Force requires improved collaborative planning and task execution supervision for all aerial operations in the context of the JOE, to provide distributed sustainment for FSO.

(3) *Training*. The future Modular Force requires the capability to design and institute improved training practices and opportunities within the context of the JOE, to provide distributed sustainment for FSO.

(4) *Materiel*

(a) The future Modular Force requires the capability to develop a suite of aircraft to provide rapid inter and intratheater movement into well established and austere locations from strategic distance in the context of the JOE, to provide distributed sustainment for FSO. The future Modular Force requires precision airdrop systems that can be used to provide agile and responsive support to disbursed forces in the context of the JOE, to provide distributed sustainment in FSO. The future Modular Force requires the capability to develop modular, deployable, mobile, reliable, maintainable, interoperable, and affordable aviation ground support components and systems in the context of the JOE, to provide distributed sustainment for FSO.

(b) The future Modular Force requires the capability for ultra-reliable, intelligent, embedded electronics, diagnostics, and prognostics to detect system and platform problems prior to failure in the context of the JOE, to provide distributed sustainment for FSO.

Chapter 6

Conclusion

a. Future Modular Force sustainment will contribute to a coherent joint system that provides continuous, precise, assured sustainment to forces in any operational environment. It will provide for a joint-capable interdependent C2 organization to address highly distributed noncontiguous operations occurring in multiple JOAs simultaneously. It will support a distribution system that provides goods and services at the right place, at the right time, and in the right amount, in both routine and emergency situations. Future force sustainment will reduce demand and redundancy through improvements in reliability, maintainability, and innovations in air and sea based delivery platforms to augment land-based platforms.

b. Army logisticians will continue to be joint logisticians. The Army, while inherently joint, is the future force of choice for combatant commanders to sustain the Soldiers. Army

organizations, units, and capabilities are designed for sustained land combat. Army capabilities, combined with those of other components, may generate joint sustainment. As concepts mature and operational ideas crystallize, Army logisticians will continue to lead joint sustainment efforts for the future Modular Force.

**Appendix A
References**

**Section I
Required Publications**

Capstone Concept for Joint Operations.

Focused Logistics Joint Functional Concept.

JP 3-0
Joint Operations.

The Joint Operational Environment-The world Through 2030 and Beyond.

TRADOC Pam 525-3-0
The Army in Joint Operations: The Army's Future Force Capstone Concept 2015-2024.

TRADOC Pam 525-3-1
The Army Operating Concept for Operating Maneuver 2015-2024.

TRADOC Pam 525-3-2
The Army Concept for Tactical Maneuver 2015-2024.

TRADOC Pam 525-3-3
The United States Army Functional Concept for Battle Command 2015-2024.

TRADOC Pam 525-96
Future Modular Force Distribution Operations.

**Section II
Related Publications**

DA Army Transformation Roadmap.

DOD Transformation Planning Guidance.

FM 3-0
Operations.

FM 3-34
Engineer Operations.

FM 3-34.400
Marine Corps Warfighting Publication (MCWP) 3-17.8, General Engineering.

Joint Logistics (Distribution) Joint Integrating Concept.

“If You Work with Friends, Bring It Along,” LTC Malcolm D. Grimes, USAF, MAJ Donald R. Ferguson, USAF, Air and Space Power Journal, Winter 2004.

JP 3-34

Engineer Doctrine for Joint Operations.

JP 4-0

Doctrine for Logistic Support of Joint Operations.

Joint Vision 2020.

Protection Joint Functional Concept.

Seabasing Joint Integrating Concept.

TRADOC White Paper on Joint Seabasing, the Army Perspective.

TRADOC Pam 525-2-1

The United States Army Functional Concept for See 2015-2024.

TRADOC Pam 525-3-4

The United States Army Functional Concept for Strike 2015-2024.

TRADOC Pam 525-3-5

The United States Army Functional Concept for Protect 2015-2024.

TRADOC Pam 525-3-6

The United States Army Functional Concept for Move 2015-2024.

TRADOC Pam 525-4-0

Maneuver Sustainment Operations for the Future Force.

TRADOC Pam 525-7-2

Distribution Operations for the Future Modular Force Concept Capability Plan 2015-2024.

Appendix B

a. The purpose of the assumptions listed below is to define the strategic and operational context for the *Sustain* concept. These assumptions describe relevant future conditions that are likely, but not certain. Invalidity of the key assumptions, as determined through continuous experimentation, wargaming, and assessment, will cause a fundamental revision of this concept.

b. Assumptions

- The JOE accurately describes the most likely security environment during the 2015-2024 timeframe.
- The Army force development process and transformation campaign objectives will be achieved.
- The U.S. will continue to pursue its national interests through proactive global engagement.
- The use of weapons of mass destruction will not be routine, frequent, or large-scale.
- U.S. forces will maintain the capability to achieve air and maritime superiority in any theater.
- Joint transformation will continue and achieve its stated objectives for JF development.
- Advanced airlift and sealift capabilities will be fielded.
- Operations will be conducted within a joint interagency, multi-national framework.
- Proliferation of precision munitions will occur throughout the force.
- The network envisioned as the backbone for network-enabled operations will exist and work as estimated.
- Non-platform specific systems will already be funded, in place, and working.
- The network that will serve as the backbone for network-enabled operations will exist and work as envisioned.
- The Army will remain a hybrid force of light, medium, heavy, and special purpose forces in 2015 and beyond.
- Advances in information systems capabilities will enable higher levels of situational understanding.
- Modularization of Army forces will provide projected benefits with respect to force agility, tailorability, and mobility.
- The war on terrorism will continue to impose operational requirements on the force to 2015 and beyond, with effects on both force availability and strategic lift requirements.

Glossary
Section I
Abbreviations

BCT	brigade combat team
BSB	base support battalion
C2	command and control
CCJO	Capstone Concept for Joint Operations
COP	common operational picture
CRO	combat replenishment operations
DA	Department of the Army
DOD	Department of Defense
DOTMLPF	doctrine, organization, training, materiel, leadership and education, personnel and facilities
EPS	essential personnel services
FSD	full spectrum dominance
FSO	full spectrum operations
GLOC	ground line(s) of communication
HRS	human resources support
JFC	joint force commander
JOA	joint operations area
JOC	joint operating concept
JOE	joint operational environment
JOpsC	Joint Operations Concept
MACP	mortuary affairs collection point
METT-TC	mission, enemy, terrain and weather, troops available, time and civil considerations
MOM	military operational medicine
PASR	personnel accounting and strength reporting
PIM	personnel information management
PRM	personnel readiness management
R5	reception, replacement, return to duty, rest/relaxation, and redeployment
ROMO	range of military operations
SC	spectrum of conflict
SRO	sustainment replenishment operations
TRADOC	Training and Doctrine Command
UAS	unmanned aircraft systems
U.S.	United States
USTRANSCOM	United States Transportation Command

Section II

Terms

Acquisition and Cross-Servicing Agreement

Agreements negotiated on a bilateral basis with U.S. allies or coalition partners to allow U.S. forces to exchange most common types of support, including food, fuel, transportation, ammunition, and equipment. Authority to negotiate these agreements is usually delegated to the combatant commander by the Secretary of Defense. Authority to execute these agreements lies with the Secretary of Defense, and may or may not be delegated. Governed by legal guidelines, these agreements are used for contingencies, peacekeeping operations, unforeseen emergencies, or exercises to correct logistic deficiencies that cannot be adequately corrected by national means. The support received or given is reimbursed under the conditions of the acquisition and cross-servicing agreement. (JP 4-07).

adversary

A party acknowledged as potentially hostile to a friendly party and against which the use of force may be envisaged. (JP 3-0).

aerial port

An airfield that has been designated for the sustained air movement of personnel and materiel as well as an authorized port for entrance into or departure from the country where located. (JP 1-02).

airdrop

The unloading of personnel or materiel from aircraft in flight. (JP 1-02).

airdrop platform

A base upon which vehicles, cargo, or equipment are loaded for airdrop. (JP 1-02).

antiterrorism

Defensive measures used to reduce the vulnerability of individuals and property to terrorist acts, to include limited response and containment by local military and civilian forces. (JP 3-07.2).

area of operations

An operational area defined by the JFC for land and maritime forces. Areas of operation do not typically encompass the entire operational area of the JFC, but should be large enough for component commanders to accomplish their missions and protect their forces. (JP 3-0).

Army corps

A tactical unit larger than a division and smaller than a field Army. A corps usually consists of two or more divisions together with auxiliary arms and services. (JP 1-02).

battle command

Battle command applies the leadership element of combat power. It is principally an art that employs skills developed by professional study, training, and judgment. It is the exercise of

leadership through visualization, description, and direction. The science of battle command relates to the conduct of operations within a battlefield operating system.

chemical, biological, radiological, nuclear, and high-yield explosive hazards

Those chemical, biological, radiological, nuclear, and high-yield explosive elements that pose or could pose a hazard to individuals. Chemical, biological, radiological, nuclear, and high-yield explosive hazards include those created from accidental releases, toxic industrial materials (especially air and water poisons), biological pathogens, radioactive matter, and high-yield explosives. Also included are any hazards resulting from the deliberate employment of weapons of mass destruction during military operations. (JP 3-07.2).

civil augmentation program

Standing, long-term contacts designed to augment Service logistic capabilities with contract support in both preplanned and short notice contingencies. Examples include U.S. Army Logistics Civilian Augmentation Program, U.S. Air Force Contract Augmentation Program, and U.S. Navy Construction Capabilities Contract. (JP 4-07).

coalition

An ad hoc arrangement between two or more nations for common action. (JP 5-0).

combatant command

A unified or specified command with a broad continuing mission under a single commander established and so designated by the President, through the Secretary of Defense and with the advice and assistance of the Chairman of the Joint Chiefs of Staff. Combatant commands typically have geographic or functional responsibilities. (JP 5-0).

combat engineering

Those engineering tasks that assist the tactical and operational commander to "shape" the battlespace by enhancing mobility, creating the space or time necessary to generate mass and speed while protecting the force, and denying mobility and key terrain to the enemy; these tasks include breaching, bridging, and emplacement of obstacles to deny mobility to the enemy.

combat replenishment operations (CRO)

CRO provides rapid resupply using the maneuver battalion's internal capabilities and assets. Conducted within the battalion commander's battle rhythm, the objective of conducting a CRO is to enable follow-on engagements within the same battle without risk of unplanned operational pauses.

command and control (C2)

The exercise of authority and direction by a properly designated commander over assigned and attached forces in the accomplishment of the mission. Command and control functions are performed through an arrangement of personnel, equipment, communications, facilities, and procedures employed by a commander in planning, directing, coordinating, and controlling forces and operations in the accomplishment of the mission. (DOD).

command and control system

The facilities, equipment, communications, procedures, and personnel essential to a commander for planning, directing, and controlling operations of assigned and attached forces pursuant to the missions assigned. (JP 6-0).

commander's intent

A concise expression of the purpose of the operation and the desired end state. It may also include the commander's assessment of the adversary commander's intent and an assessment of where and how much risk is acceptable during the operation. (JP 3-0).

common operational picture (COP)

A single identical display of relevant information shared by more than one command. A common operational picture facilitates collaborative planning and assists all echelons to achieve situational awareness. (JP 3-0).

distribution

The operational process of synchronizing all elements of the logistics system to deliver the 'right things' to the 'right place' at the 'right time,' to support the geographic combatant commander. Further to this definition, distribution employs a partnership of Army, joint, multi-national, interagency, and commercial capabilities, to provide personnel, equipment and materiel from a source of supply to a point of use or consumption, which includes the last tactical mile, redistribution, redirection, and retrograde activities. Distribution is fully synchronized with the force deployment process and the battle plan, and includes the multidirectional flow of personnel, equipment and materiel, mode and node operations, container and materiel handling, and protective packaging. (JP 4-0).

end state

The set of required conditions that defines achievement of the commander's objectives. (DOD).

external replenishment operations (ERO)

ERO is an external replenishment operation that is planned, deliberate, and conducted by organizations located at echelons above brigade. The purpose of an ERO is to provide intensive, time sensitive resupply, which may include the requirement to support a change in mission and incorporates those elements of the SRO, but with the added requirement to provide trained and ready personnel replacements. The ERO is primarily focused on resupply of the BSB with loads built to battalion and separate company level; the ERO normally requires as much as 8 to 36 hours to complete.

footprint

The amount of personnel, spares, resources, and capabilities physically present and occupying space at a deployed location. (JP 1-02).

force projection

The ability to project the military element of national power from continental U.S. or another theater, in response to requirements for military operations. Force projection operations extend

from mobilization and deployment of forces to redeployment to continental U.S. or home theater. (DOD).

force protection

Preventive measures taken to mitigate hostile actions against DOD personnel (to include family members), resources, facilities, and critical information. Force protection does not include actions to defeat the enemy or protect against accidents, weather, or disease. (JP 3-0).

geospatial engineering

Provides commanders with terrain visualization, operational and tactical terrain analysis, digitized terrain products, nonstandard map products, and baseline survey data; one of the engineer battlespace functions.

general engineering

Encompasses the construction and repair of LOCs, main supply routes, airfields, and logistic facilities to support joint military operations and may be performed in direct support of combat operations, such as battle damage repair; these operations include both horizontal and vertical construction, and may include use of both expedient repair methods and more deliberate construction methods characterized by the application of design criteria, advanced planning, and preparation, depending on the mission requirements.

global distribution

The process that synchronizes and integrates fulfillment of JF requirements with employment of the JF. It provides national resources (personnel and materiel) to support execution of joint operations. The ultimate objective of this process is the effective and efficient accomplishment of the JF mission. (DOD).

intermediate staging base (ISB)

A temporary location used to stage forces prior to inserting the forces into the host nation. (JP 3-07.5).

in-transit visibility

The ability to track the identity, status, and location of DOD units, and non-unit cargo (excluding bulk petroleum, oils, and lubricants) and passengers; patients; and personal property from origin to consignee or destination across the range of military operations. (JP 4-01.2).

joint

Connotes activities, operations, organizations, etc., in which elements of two or more military departments participate. (DOD).

joint force (JF)

A general term applied to a force composed of significant elements, assigned or attached, of two or more military departments operating under a single JFC. (DOD).

joint operations

A general term to describe military actions conducted by JFs or by Service forces in relationships (such as, support, coordinating authority) which, of themselves, do not create JFs. (DOD).

joint operations area (JOA)

An area of land, sea, and airspace, defined by a geographic combatant commander or subordinate unified commander, in which a JFC conducts military operations to accomplish a specific mission. (JP 3-0).

liaison

That contact or intercommunication maintained between elements of military forces or other agencies to ensure mutual understanding and unity of purpose and action. (JP 3-08).

line of communication

A route, either land, water, and/or air, that connects an operating military force with a base of operations and along which supplies and military forces move. (DOD).

logistics

The science of planning and carrying out the movement and maintenance of forces. In its most comprehensive sense, those aspects of military operations that deal with: design and development, acquisition, storage, movement, distribution, maintenance, evacuation, and disposition of materiel; movement, evacuation, and hospitalization of personnel; acquisition or construction, maintenance, operation, and disposition of facilities; and acquisition or furnishing of services. (JP 1-02).

nodes

Nodes are the points along the distribution network connected by lines of communication, and generally are of four different types: Aerial ports and sea ports, which are in-transit nodes; maintenance, rebuild and assembly facilities, which are in-process nodes; storage and pre-positioning sites, which are in-storage nodes; and, use or consumption point, which is the customer node.

non-governmental organizations

Transnational organizations of private citizens that maintain a consultative status with the Economic and Social Council of the United Nations. Nongovernmental organizations may be professional associations, foundations, multi-national businesses, or simply groups with a common interest in humanitarian assistance activities (development and relief).

Nongovernmental organizations is a term normally used by non-U.S. organizations. (DOD).

operational environment

A composite of the conditions, circumstances, and influences that affect the employment of military forces and bear on the decisions of the unit commander. Some examples are: permissive environment, an operational environment in which host country military and law enforcement agencies have control, as well as, the intent and capability to assist operations that a unit intends to conduct; uncertain environment, an operational environment in which host government forces, whether opposed to or receptive to operations that a unit intends to conduct, do not have totally

effective control of the territory and population in the intended operational area; hostile environment, an operational environment in which hostile forces have control, as well as, the intent and capability to effectively oppose or react to the operations a unit intends to conduct. (DOD).

operational level of war

The level of war at which campaigns and major operations are planned, conducted, and sustained to accomplish strategic objectives within theaters or other operational areas. Activities at this level link tactics and strategy by establishing operational objectives needed to accomplish the strategic objectives, sequencing events to achieve the operational objectives, initiating actions, and applying resources to bring about and sustain these events. These activities imply a broader dimension of time or space than do tactics; they ensure the logistic and administrative support of tactical forces, and provide the means by which tactical successes are exploited to achieve strategic objectives. See also strategic level of war; tactical level of war. (DOD).

pit stop engineering concept

The ability of highly trained operator technicians to quickly remove and replace, fix and service systems and equipment in a well choreographed, highly efficient brief pause, or pit stop. The pit stop is characterized by easy efficient maintenance and minimized dependence on maintenance tools. Plug and play components and commonality of parts increase the efficiency of the pit stop and reduces the footprint by reducing the number of personnel, tools, and parts needed to maintain the system.

pulsed sustainment

In a theater of operations, at the tactical level, the intermittent multi-modal flow of goods and services (to include personnel services) integrated into the maneuver commander's battle rhythm to sustain or rebuild combat power. It obviates the requirement to maintain secure LOCs at all times and in all places within a noncontiguous area of operations; and may be used in conjunction with either sustainment replenishment or mission staging events. Force protection assets are required to temporarily secure LOCs and event sites as determined by METT-TC.

seabasing

Seabasing is the rapid deployment, assembly, command, projection, reconstitution, and re-employment of joint combat power from the sea, while providing continuous support, sustainment, and force protection to select expeditionary JFs without reliance on land bases within the JOA. These capabilities expand operational maneuver options, and facilitate assured access and entry from the sea.

seaport

A land facility designated for reception of personnel or materiel moved by sea, and that serves as an authorized port of entrance into or departure from the country in which located. (JP 4-01.2).

situational understanding

The product of applying analysis and judgment to the common operational picture to determine the relationships among the factors of METT-TC.

smart distribution

A system of systems that will enable future sustainers to provide timely support and to operate more efficiently. It consists of three subsystems: the modular platform system, the intelligent load handling system, and the future tactical truck system. The modular platform system will be designed to interface directly with the logistics rails in Air Force aircraft, to be handled by a load handling system on current and future truck systems, and to have airdrop and sling load capability. Modular packaging and smart tie downs will allow transportation of mixed loads on the modular platform. The Intelligent Load Handling System combines an articulated load handling arm and configured load building software. The articulating arm will be able to unload modular platforms aircraft and have a materiel handling capability. The future tactical truck system will be a single common chassis family of vehicles that will meet the ground transportation requirements for distribution in the future.

strategic level of war

The level of war at which a nation, often as a member of a group of nations, determines national or multi-national (alliance or coalition) security objectives and guidance, and develops and uses national resources to accomplish these objectives. Activities at this level establish national and multi-national military objectives; sequence initiatives; define limits and assess risks for the use of military and other instruments of national power; develop global plans or theater war plans to achieve these objectives; and provide military forces and other capabilities in accordance with strategic plans. (DOD).

supplies

In logistics, all materiel and items used in the equipment, support, and maintenance of military forces. (JP 1-02).

supply

The procurement, distribution, maintenance while in storage, and salvage of supplies, including the determination of kind and quantity of supplies. Producer phase, the phase of military supply that extends from determination of procurement schedules to acceptance of finished supplies by the Military Services. Consumer phase, the phase of military supply which extends from receipt of finished supplies by the Military Services through issue for use or consumption. (JP 1-02).

supply chain

The linked activities associated with providing materiel from a raw materiel stage to an end user as a finished product. See also supply; supply chain management. (JP 4-09).

sustain

For the purposes of this concept, sustain is defined as that which is necessary to sustain the force or prolong operations until completion or revision of a mission. It includes the supplies and services needed to support the initial execution of approved operational plans, intermediate levels of supplies to support the force until resupply is available, and the replenishment stocks necessary to maintain and conclude operations.

sustainment

The provision of logistics and personnel services necessary to maintain and prolong operations until mission accomplishment. (JP 4-01)

sustainment replenishment operations (SRO) (exchange or direct)

SRO provides rapid resupply to elements of the BCT within the capability of the BSB. Similar to the smaller scale CRO, the SRO is conducted within the maneuver commander's battle rhythm and is normally executed as a rapid exchange of supplies from the BSB to the support platoons and sections. The BSB, as an exception, may provide resupply directly to the platform or Soldier-level when METT-TC allows. An SRO consists of rearm, refuel, fix, and medical support activities as required to meet the needs of the BCT during ongoing operations.

- **exchange.** Conducted by the BSB, an exchange SRO or SRO-E rapidly provides supplies from existing BSB stocks to BCT support platoons and sections. The SRO-E is normally accomplished as a simple flat rack exchange that should require 1-2 hours or less.
- **direct.** Conducted by the BSB, a Direct SRO or SRO-D provides supplies from existing BB stocks directly to the platform or Soldier level; and SRO-D could involve re-arming, re-fueling, fixing, and medical support. An SRO-D normally occurs when required support exceeds the capability of the SRO-E requiring the BB to support, assist, or facilitate the operation which normally requires as much as 8 to 18 hours to complete.

tactical level of war

The level of war at which battles and engagements are planned and executed to accomplish military objectives assigned to tactical units or task forces. Activities at this level focus on the ordered arrangement and maneuver of combat elements in relation to each other and to the enemy to achieve combat objectives. (DOD).

terrorism

The calculated use of unlawful violence or threat of unlawful violence to inculcate fear; intended to coerce or to intimidate governments or societies in the pursuit of goals that are generally political, religious, or ideological. (DOD).

theater distribution

The flow of personnel, equipment, and materiel within theater to meet the geographic combatant commander's missions. (JP 4-01.4).

weapons of mass destruction

Weapons capable of a high order of destruction and of being used in such a manner as to destroy large numbers of people and infrastructure. Weapons of mass destruction can be high explosives or nuclear, biological, chemical, and radiological weapons, but exclude the means of transporting or propelling the weapon, where such means is a separable and divisible part of the weapon. Weapons of mass effects are often used to include weapons, such as chemical and biological types. (DOD).

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