JOINT LOGISTICS AT THE OPERATIONAL LEVEL--WHERE ARE WE AT AND WHERE ARE WE GOING?

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ABSTRACT

Joint Logistics at the Operational Level--Where Are We At and Where Are We Going?
By Major Steven W. Pate, USA, 54 Pages

This paper analyzes operational logistics for land warfare to determine if there is a requirement for an echelon above corps joint logistics command. It will also determine if U.S. Army command and control support organizations such as the Corps Support Command, Theater Army Area Command, or the conceptual Theater Support Command are suitable to support this command and control function. Additionally, the paper argues that the centralized planning and control function provided by a Joint Logistic Command is a primary step to focusing logistics.

Operations since the enactment of the Goldwater-Nichols Act in 1986 have seen an increased use of a joint logistics command and control structure to focus the logistics effort of the theater and/or area of operation. The consolidation of Defense Logistics and Services agencies have increased the need for a consolidated logistics control node at the operational level to orchestrate strategic level support to the tactical level. This link creates a seamless logistics system. Historically, in all major conflicts the U.S. Military Services have operated as joint force; integration however, is usually only at the highest level. The current and future trend of joint operations is to integrate service capabilities to include logistics at the lower Joint Task Force (JTF) level. The paper concludes that the U.S. Military operates joint logistics for landbased operations primarily with the Army and in the future this trend should continue with increased service integration. However, joint logistics doctrine must be authoritative to drive the integration process.

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Introduction

Joint logistics at the operational level is not a new concept but one that is receiving greater emphasis during peacetime in order to achieve increased economy of effort and unification. During World War II a Joint Logistics Committee system was used extensively at the strategic and operational levels to determine requirements and to focus the industrial base to meet and set the conditions for war.[1] Since the emphasis of a more unified joint defense mechanism following the National Security Act of 1947 and the Goldwater-Nichols Department of Defense Reorganization Act (GNA) in 1986 the level of joint logistics cooperation and unification has improved greatly.[2] These laws supported the consolidation of many strategic level support systems into Department of Defense activities but does little to guide the development of operational logistics systems capable of integrating multi-service support systems. Additionally, it fails to clarify the responsibilities for various levels of support at the operational level that would enhance economy of effort and synergy of support. This monograph will explore, primarily from a land warfare perspective, the next logical step in the evolutionary process of Joint Logistics Doctrine which is to identify joint logistics responsibilities at the operational level. Clarity at this level will support the development and/or application of support structures that can integrate the capabilities of the various service components. The purpose of this analysis is to determine: if there is a need for an echelon above corps (EAC) to serve as a joint logistics command and control headquarters in an active component; how logistics become focused at the operational level, and; if current U.S. Army logistics commands structures, such as corps support

commands (COSCOMs) and theater army area commands (TAACOM) are suitable foundations to support a joint logistics command (JLC). The monograph will provide a background of joint logistics as well as describe and analyze current Joint, Army and Marine Corps logistical doctrine. Operations since the passage of the Goldwater-Nichols Act in 1986 will be examined to demonstrate the consolidation of joint logistics into a single joint logistics command. Additionally, this paper will highlight the latest theater logistics command and control concept from the Army called the Theater Support Command (TSC). This approved concept combines the current TAACOM structure and mission with the old theater army support command (TASCOM) structure and concept to address current and future operations logistics needs.

To support this analysis the most current versions of the following doctrine will be used:

Joint Publication 1.0 *Joint Warfare of the US Armed Forces*, November 1991.
Joint Publication 0.2 *Unified Action Armed Forces (UNAAF)*, February 1995.
Joint Publication 3.0 *Doctrine for Joint Operations*, February 1995
Joint Publication 4.0 *Doctrine for Logistics Support of Joint Operations*, January 1995
Joint Vision 2010 *Chairman's Vision for the Future.*
Fleet Marine Force Manual 4 *Combat Service Support*, U.S. Marine Corps, August 1988.
Field Manual 100-5 *Operations*, U.S. Army, June 1993.
Field Manual 100-7 *Decisive Force: The Army in Theater Operations*, U.S. Army May 1995.
Field Manual 100-10 *Combat Service Support*, U.S. Army, October 1995
Field Manual 100-16 *Army Operational Support*, U.S. Army, May 1995

A comparison of joint and service logistical doctrines will determine the different ways services "think" about logistics. Differences in the keystone doctrine inhibit the building of a shared vision which is essential for the development of a learning

organization capable of adapting to a changing environment.[3] This vision or mental model of how to operationally support military actions is essential for joint development of; doctrine, training, leaders, organizations, material and soldiers; air men; sailors; marines (DTLOMS). A consistent logistics doctrine is needed to guide all services to integrate their capabilities. This is the first step to achieving joint interoperability and increasing unity and economy of effort. Following the doctrinal analysis, operations since the enactment of the GNA are analyzed to determine if current joint doctrine effectively support application of operational logistics today and the immediate future. This analysis concentrates at operational logistics level. Operations Desert Shield and Storm in the Middle East, Restore Hope in Somalia, and Uphold Democracy in Haiti are analyzed because they are all joint and each consolidated command and control of operational logistics into a single command. These operations demonstrate many of the same lessons learned as well as a trend in the utilization of joint logistics commands. Following this analysis and an assessment of current and concept command and control organizations the author will conclude with an answer to the questions and provide some joint operational logistics recommendations.

Background

Beginning with the Civil War, World War I & II, Korea, and more recently the Gulf War the U.S. Military has fought as a joint team.[4] The quality of teamwork and the degree of unity of effort is the primary reason for Goldwater-Nichols Act (GNA) in 1986. Historically, each branch of service develops its own unique tactics, techniques, and

procedures, organizations, training, material and leaders to accommodate their own specific style of warfare. However, in times of war all service branches combine their efforts to win the nation's wars. Due to increased monetary, political, and national constraints placed on all services to increase efficiency and effectiveness there is increased pressure to improve the military's capability to conduct joint operations. Joint operations are expected to capitalize on the unique and complementary capabilities of each service to create a greater synergistic effect in the application of combat power.[5]

The U.S. Army normally operates in conjunction with a sister service. In the last few years the U.S. has been increasingly engaged in a number of limited operations that have utilized joint logistics command and control to achieve economy and unity of effort. During these joint operations the Geographic Commander in Chief (CINC), has organized forces in a variety of different methods to include using a Joint Task Force (JTF) configuration. Under this structure there is normally more than one service; and, in many cases, some representation from all. By law each service has Title 10 responsibilities to ensure its component of a JTF or any Joint Force Command (JFC) is manned, equipped, trained, and sustained. Specifically, each service has the authority and responsibility for "recruiting; organizing; supplying; equipping (including research and development); training; servicing; mobilizing; demobilizing; maintaining; the construction, outfitting, and repair of military equipment; the construction, maintenance, and repair of buildings, structures, and utilities, along with real property management.[6] Additionally, the Combatant Commanders (Geographical CINCs) have the responsibility to ensure each U. S. Military force assigned in the area of responsibility (AOR) receive

their Title 10 support. To accomplish this responsibility the CINC has directive authority for logistics that flows from Combatant Command (COCOM) authority. Therefore, the CINC can consolidate logistics and task a subordinate element to serve as an executive agent for a particular commodity or for all Title 10 support. Due to the complexity and mission scope of ensuring efficient logistics support, the CINC's J-4 is ill suited to orchestrate logistics operations. Therefore, a series of Joint Boards were formed to coordinate the logistics effort in a specific area. In large operations there are a large number of boards.

In recent JTFs, Logistics Support Commands (LSC) have consolidated the management, priority and execution of common user and shared logistics for the theater of operations. The formation of a LSC organization doctrinally and historically is an ad hoc collection of skills and capabilities pulled together for a specific operation. During Desert Shield and Storm the logistics commander pulled together a staff and capabilities from units within the theater and from uncommitted units in Europe and CONUS.[7] These ad hoc units often take time to become established and have little experience in coordinating and directing actions across service lines and with coalition partners. Current joint logistics doctrine described in Joint Publication 4.0 *Doctrine for Logistics Support of Joint Operations* supports this ad hoc approach. Joint doctrine does not identify tactics, techniques and procedure that could support development of improved interoperability, nor does it assign responsibilities for logistics that will support development of organizations designed to improve joint logistics. This approach supports maximum innovation in the development of solutions to each operation but does

little to improve overall systematic joint logistics problems and create integrated unity of effort. Further, joint logistics doctrine has contributed little to operational concept of "focused logistics" in *Joint Vision 2010*.[8] In order to drive adaptation, augmentation or development of interopererable logistics systems that will increase the focus of logistics; improved joint doctrine will have to serve as the engine for change.

Often ad hoc development of logistics support requires logisticians to react to an operations plan in progress. It is expected that each service component will deploy with its organic support and then consolidate functions once deployed. Without joint doctrinal guidelines and training there is little assurance that the best logistics capabilities of each service are deployed to efficiently focus logistics for the operation. Ad hoc logistics organizations are often reactive and rely on improvisation to meet all support requirements. This approach fails to achieve the anticipation needed to support efficient and effective logistics operations. As General William G. Tuttle, former Army Material Command Commander, has said, "we must increasingly shift the focus from improvisation to anticipation."[9] To overcome the inability to anticipate, mountains of supplies are accumulated to support all contingencies. In low intensity environments in which time is available to absorb inefficient operations and achieve operational efficiency, logistics risk is accepted. As General Gordon Sullivan (USA. ret.) might say this kind of ad hoc arrangement is a hope is not a method of action to prepare for and conduct military operations.[10]

At the CINC level, there is discussion on the viability of establishing a standing JTF Headquarters in ACOM. This concept seems to be getting some thought and

support. At the corps level, the Corps Headquarters of the XVIII Airborne Corps, and the III Corps have exercised as JTFs and established JTF SOPs following ACOM's guidance in order to serve as the framework for a JTF headquarters and staff. Under this plan augmentees from assigned services would fall in on the corps staff as required. Logistically, a similar concept has been exercised using the Corps Support Command as a centralized JTF Logistics Headquarters. Logistics at the strategic level is already driving to increased jointness in acquisition, transportation, fuel, medical and material management. At the operational or JTF level, many of these same commodities would continue to receive increased attention, build-up and distribution through centralized logistics support command. Consolidation ensures efficient and effective utilization of logistics support capabilities and limited resources. In Somalia water production, storage and distribution is one example where joint management interoperability and complementary capabilities created logistics synergy. The Marines and the Army have similar water production capabilities. With the Marines the Army was able to establish a compatible and complementary water storage and distribution system for water support with the deployment of a compatible Army Tactical Water Distribution System (TWDS) to Somalia. Additional support commonalties are available in each service's capabilities to provide common commodities such as subsistence, fuel, medical, and transportation.

Most, if not all, joint operations that require non-organic logistics base or operational support will require some U.S. Army ground force capability either in theater or at an intermediate staging base (ISB). Those operations that use a Marine/Navy and Air Force combination, such as the noncombatant evacuation operation (NEO) in Liberia,

should be able to fight from established bases or from service unique power projection platforms. However, most land based requirements that require a JTF will utilize Army forces. A major force provider to Geographic Combatant Commanders, ACOM is preparing the U.S. Army and all service components for joint operations. Therefore, a study on the need for an active duty joint logistics support capability is timely. The U.S. Army is often responsible for ground based logistics due to law and its preponderance of land based forces in the theater. Because of this requirement the Army has a large capability to support theater operations. However, most of the non-forward deployed echelons above corps (EAC) support capability is in the reserve component system and requires mobilization to activate. Current Army support organizations and procedures provide a proven baseline from which to develop joint logistics doctrine and capabilities. The Theater Support Command (TSC) demonstrates an innovative approach to the operational logistics command and control issue. The TSC has a organizational mix of active and reserve personnel allowing for an initial deployable capability not currently available as well as a modular organizational design that allows for tailoring to meet a variety of unique and different missions. This concept supports *Joint Vision 2010* and the Army's *Force XXI* initiatives and is a step in the right direction to focus logistics beginning with centralized management. The next step is to habitually augment the TSC with logistics functional management and control cells from other services or integrate the TSC with a joint staff. From this type orchestration the further development interoperable systems should evolve.

Current Logistics Doctrine

"The nature of modern warfare demands that we fight as a joint team. This was important yesterday, it is essential today, and it will be even more imperative tomorrow"

-- John M. Shalikashvili[11]

Throughout our history as a nation we have fought as a joint team. The Union Army's Vicksburg Campaign led by Major General U.S. Grant in the Civil War could not have been successful without the U.S. Navy's cooperation of Rear Admiral David Dixon Porter. As stated in Grant's memoirs "The Navy under Porter was all it could be during the entire campaign [which]....could not have been made at all without such assistance. The most perfect harmony reigned between the two arms of the service."[12] However, in the Civil War this type of cooperation was personality driven and not legislated into a command relationship. Since that time there have been multiple examples of joint warfare which highlighted the need to conduct more unified operations. The most influential examples to future joint operations occurred during World War II. The Normandy invasion and the European campaign unified the efforts of the Army, Navy and Air Force to secure a lodgment on the French coast from which the Allied powers defeated the German Army. This effort required the appointment of a Supreme Allied Commander to command and control not only U.S. and British forces but also to focus the efforts of the U. S. Army Air Corps, Army, and Navy.[13] Though the United States was ultimately successful there were many coordination difficulties among services. In the Pacific Theater there was a split in the chain of command between Admiral Nimitz

and General MacArthur that could have produced disaster in several battles such the Leyte Island operation. Following WWII the National Security Act of 1947 was passed, which created the National Military Establishment underneath the combined War and Navy Departments in a single Department of Defense.[14] Congress continued this unification process through amendments in 1949 and 1958. The watershed for joint military unification happened in 1986 with the Goldwater-Nichols Department of Defense Reorganization Act. Since the signing of that act the military community has increased its joint operating abilities and created a great deal of joint doctrine. However, this unification process is far from complete. There is and systematically will always be number of doctrinal manuals under development and or revision. As far as achieving complete integration and interoperability between forces the process is just beginning. An initial step in this integration process is the identification of redundancy and commonality to determine the best methods and systems or shortfalls in achieving unity of effort, synergy, and economy. To drive this process a Joint Doctrine that is authoritative of responsibilities but not prescriptive in methods is needed. An effective Joint Doctrine is the engine which will drive all military services to achieve the Joint Vision of focused logistics.

Doctrine forms the authoritative fundamental principles by which military forces guide their actions.[15] Or, as stated in Joint Pub 1 "military doctrine presents fundamental principles that guide the employment of force.[16] Currently all services embrace the concept of doctrine. The Army, more than the other services, has historically placed a greater emphasis on doctrine development. The U.S. Army's first

doctrinal publication was the *1779 Regulations for the Order and Discipline of the Troops of the United States* by Baron von Steuben.[17] Today's U.S. Army doctrine is developed through an extensive system of training and development centers headed by a four star general as the Commanding General of the U.S. Army Training and Doctrine Command headquartered in Fort Monroe, Virginia. However, not until 1993, did the Navy and Marine Corps establish the Naval Doctrine Command in Norfolk, Virginia, and the Air Force did not develop their Air Force Doctrine Center, also in Norfolk, until 1994.[18] This does not mean that the Navy and Air Force did not establish detailed tactics, techniques and procedures to conduct operations based on experience, theory, history and common sense. They just did not see the need to document a keystone doctrine such as the U.S. Army's Field Manual 100-5 *Operations*. With the increased possibility of joint operations at lower levels such as the joint operations experienced in Somalia, Haiti, Panama, Northern Iraq, and Bosnia there is an increasing need for greater interoperability among forces. A joint doctrine allows each service to strategically, operationally and tactically speak with the same joint focus among themselves and provides a method for sister services to educate themselves on each other.[19] The U.S. Army's experience in doctrine development has positively influenced the other services to establish their doctrine development procedures, and has contributed significantly to the development of joint doctrine for logistics support, as well as overall land warfare.

The U.S. Army's doctrine dates back to the first field manual in 1779 by Baron von Steuben to the War Department's Field Service Regulations-Operations FM 100-5, dated 22 May 1941, to the more recent 1986, 1993 and before long the 1998 versions of

FM 100-5 *Operations*. From this keystone document the Army has developed the subordinate doctrine, training, leader development, organizations, materials, soldiers (DTLOMS) to wage war when required as envisioned. Based on this history of doctrine development and the U.S. Army's obvious experience in ground warfare, it is the primary proponent for land warfare with exception of maritime operations for the joint force. The U.S. Navy and Marine Corps are proponent's for the sea and maritime warfare, and the U.S. Air Force is the proponent for air warfare. However, due to U.S. Code and laws, the individual military services have historically developed their forces in relative isolation from each other. Not until the National Security Act of 1947 did a unification trend within the Department of Defense begin.[20]

With the increased power bestowed on the CJCS and staff following the Goldwater-Nichols Act (GNA) of 1986 and the intent of law to increase the unification of service relationships, joint doctrine development has flourished.[21] Due to recent development of joint doctrine emphasis and the time consuming process of building consensus among all branches of service the full potential of building a more unified effort with increased economy is not fully realized. Additionally, in spite of the clear success GNA has achieved in the unification and reform of the Department of Defense and its military service departments, it may not have gone far enough in clearly assigning responsibilities and resources to meet intended results.[22] To support the rapid development of joint doctrine within the last ten years the Department of Defense, through the JCS J-7 Operational Plans and Interoperability Directorate, has frequently identified individual services to assume the lead in a particular area of joint doctrine.

Though a single service may draft a portion of joint doctrine, all services have an opportunity to provide input into the final product under the direction of a single directorate.[23] This method has had mixed results and has allowed Joint Doctrine to be both positively and negatively influenced by internal service doctrine. This type of parochial approach and the fight for limited resources based on roles and missions continues to hamper the intended unification process. Though Congress wants a more unified Defense Department it does not want to eliminate the individual services. Congress, since the birth of the nation has seen the separation of military departments and power under civilian control as a strength for internal national defense of the nation. Additionally, due to the inherent uniqueness of each services warfare environment of land, sea and air a separate system for each is needed to perform the twelve functions prescribed in the Tenth U.S. Code. Given this understanding, a closer look at logistics doctrine should highlight a number of critical areas where clarity and guidance is needed to develop better DTLOMS for joint logistics at the operational level.

First. it is necessary to establish the function of logistics in the operational level of war. As Lieutenant Colonel Christopher Paparone argues in "*Equivalent Theory of Logistics*" that logistics is not a subordinate operating system as described in the 1993 version of FM 100-5. In his article, several logistic historians and theoreticians; George C. Thorpe, Henry Eccles, and Martin Van Creveld, accord logistics as an equivalent element to strategy and tactics in the study of war.[24] As George C. Thorpe states, there are "three cardinal functions of war: Strategy and Tactics will indicate the extent of operations that are proposed, and Logistics will provide the means..."[25] Henry E. Eccles

said: "Logistics is merely a convenient term used to encompass the problem of controlling all the 'means of war' as appropriate at the various levels of command." In addition, Eccles states that strategy, tactics and logistics are integrating functional spheres influencing the operational employment of military forces; of which logistics forms the very basis for 'operations.'[26] From this logistics viewpoint it is evident that joint doctrine has partially adopted this approach to logistics. As stated in Joint Pub 4.0 *"Logistics provides the foundation of our combat power....The art of logistics is how to integrate the strategic, operational, and tactical sustainment efforts within the theater...."*[27] A closer look at joint and military logistics doctrine will determine if unity and economy of effort is best served in its current state, or given recent operations and *Joint Vision 2010,* a revised doctrine is in order.

A comparison of joint logistics doctrine with the Marine Corps and the U.S. Army indicates an immediate focus difference. Joint Logistics and Marine Corps Combat Service Support (CSS) doctrine describes logistics functions, principles, and considerations where as Army logistics doctrine describes functions and characteristics. Functionally, joint doctrine includes: Supply Systems, Maintenance, Transportation, General Engineering, and Health Services.[28] The Army logistics functions are: Manning, Arming, Fixing, Fueling, Moving and Sustaining the force.[29] Under these two sets of functions the differences are the management of personnel, a pure service responsibility, and general engineering. Both of these functions are critical at the operational level and should receive consideration in future doctrine development. A closer examination and comparison of joint logistics principles and Army logistics characteristics will

demonstrate the need for a clearer description of logistics and a consolidation of ideas to develop a shared vision of joint logistics warfare.

Joint Pub 4.0 Doctrine For Logistic Support of Joint Operations

Joint doctrine describes the general context and definition of logistics, establishes some responsibilities for logistics, outlines joint logistics principles and considerations, discusses logistics planning and gives guidance on logistics at the Theater Level. As defined: "Logistics is the science of planning and carrying out the movement and maintenance of forces."[30] The four areas of logistics responsibility are material, personnel, services, and facilities. The logistics support requirements involve six broad functional areas: supply systems, maintenance, transportation, general engineering, health services and other miscellaneous services. Joint logistics principles are responsiveness, simplicity, flexibility, economy, attainability, sustainability. Responsibility for logistics support rests primarily with each service but allows the Combatant Commander (CINC) command authority (COCOM) the authority to direct logistics within its area of responsibility. The CINC and subordinate commands operate across all three levels of war but are primarily responsible for the operational level. Here is exactly where joint logistics doctrine as well as United States Law has created an area of conflict among services with regards to joint logistics. Though all services are developing doctrine that incorporates joint warfare, there is little guidance from joint doctrine that will focus their joint logistics efforts. Additionally, there is little guidance for CINCs on how to exercise directive authority for logistics. Ad hoc arrangements allow for the ultimate levels of

flexibility and improvisation but do little to achieve a systematic economy of effort that will focus the operational logistics effort.

Joint doctrine states that logistics provides the foundation of combat power, and is a bridge that connects a nation's economy to a nation's warfighting forces.[31] It recognizes that logistic support applies to all three levels of war; the strategic, operational, and tactical. The Joint and Service Staffs concentrate on strategic logistics and have integrated strategic logistics systems that includes organizations, such as the Defense Logistics Agency with procedures to support common user supply and support through a variety of other subordinate activities such as the Defense Fuel Supply Center, Defense Personnel Support Center, and Defense Electronic Supply Center. Supported CINCs and supporting commanders such as Atlantic Command (ACOM) with its air, naval and land forces manage logistics at both strategic and operational level. Subordinate force commanders are responsible for operational and tactical logistics capabilities. Subordinate land force commanders such as Marine Air-Ground Task Force (MAGTF) and U.S. Army corps and divisions are well organized and prepared to provide tactical level support. Once again it is in the operational area of logistics that the key "Bridge"[32] is not clearly identified. The CINC has a variety of command and control options available to exercise directive authority for logistics (see Joint Publication 0-2). However, the application of command and control is limited by the types, quantity, and capabilities of the forces provided. For example, for contingency operations that are allocated one or less corps-size army units, a theater army area command (TAACOM) is not doctrinally required to orchestrate theater level logistical support. The corps support

command (COSCOM) is designed to be self-sufficient. In operations other than war, a COSCOM has served as a command and control node for joint logistics. However, in more direct combat type missions the requirements of the corps exceed the capability of the COSCOM to focus on theater support. Moreover, due to the increased numbers of services components, defense and service logistics agencies, contractors and federal law, the CINC of joint force commander frequently requires a single command and control node capable of concentrating on logistics support for the theater. To create this capability joint logistics doctrine must clearly assign responsibilities and task a joint cell or lead proponent to address the area of joint logistics at the operational level.

The principles of joint logistics are responsiveness, simplicity, flexibility economy, attainability, sustainability, survivability.[33] Understanding these principles is necessary to evaluate recent joint operations and determine the validity of joint doctrine and determine possible shortfalls. An analysis of these principles to logistics theory will also contribute to the understanding and character of joint doctrine.

"Responsiveness is the right support in the right place at the right time. In joint doctrine responsiveness is the keystone principle." Bottom line responsiveness is the ability to support the concept of operations of the supported commander.[34] Responsiveness is the quality criteria of a support system. A responsive system must provide the right materials and services to the right place at the right time. Often, time is limited and places the ultimate stress on a system to respond. A logistics system is a function of the command it supports; and at the operational level, logistics is the capability to create combat power at a stated place and time. As Henry E. Eccles stated,

"Command transforms war potential into combat power by its control and use of the logistics process."[35]

"Simplicity is avoidance of complexity and often fosters efficiency in both the planning and execution of national and theater logistics operations." Establishment of priorities and pre-allocation of supplies and services by supported unit can simplify logistics support operations.[36] Simplicity is a principle that is deeply supported by multiple military theorists, such as Carl Von Clausewitz and J.F.C Fuller as a principle of war. However, the example given in joint doctrine wishes away the operational logistics challenge of assigning, obtaining and allocating support resources through the preallocation or stockpiling of resources with a supported units to create simplicity. Joint doctrine should focus its guidance on the CINC and JTF staffs and subordinate units that require it. Ideally simplicity is obtained through centralized management into the minimum number of nodes necessary to obtain unity of effort.

"Flexibility is the ability to adapt logistic structure and procedures to changing situations, missions, and concept of operations."[37] Flexibility is considered essential to obtain both responsiveness and economy. To obtain this flexibility the commander must retain positive command and control over subordinate forces. Within the principle of flexibility are the concepts of alternative planning, anticipation, reserve assets, redundancy, forward support of phased logistics, and centralized control with decentralized execution. Flexibility, it appears, is a catch all principle that is difficult to identify, and measure while at the same time conflicts directly with the principle of economy.

"Economy is the provision of support at the least cost."[38] At some level and to some degree [all] resources are limited. The simple common sense adage of waste not, want not applies with this principle. However, to conserve resources, excesses and redundancies are targeted for elimination to increase economy. A balance between the support of unplanned events such as excessive consumption, losses, and success with economy must be obtained. Under the current climate in the government, precision, accurate and efficient systems are key. Flexibility must incorporated in the development of more capable systems that can contract and expand quickly to operational requirements. The old methods of duplication and mountains of supplies will not be accepted as a viable support solution. Economy must therefore incorporate the principle of flexibility.

"Attainability (or adequacy) is the ability to provide the minimum essential supplies and services required to begin combat operations."[39] This principle is designed to ensure logistics support plans and estimates are prepared to ensure the minimum support is available prior to the start of a operation. This principle presupposes a logistical operations prior to combat operations. At the operational level the logistics preparation of the theater and the reception, staging, onward movement and integration of forces are all part of the greater operation. Under this principle it is essential to plan or make some sort of feasibility assessment.

"Sustainability is a measure of the ability to maintain logistic support to all users throughout the theater for the duration of the operation."[40] Not only must the logisticians ensure the minimal material readiness levels to initiate combat operations but must also

sustain those resources over the entire length of the operation. Getting to the theater may be 90 percent of the operation but winning is everything. Often the difference between winning and losing is the ability of a force to sustain itself over the long term. To accomplish this the logistics capabilities must be protected.

"Survivability is the capacity of the organization to prevail in the face of potential destruction."[41] Logistics units are considered high-value targets to the enemy and therefore must be protected. To safeguard these assets active and passive defensive measures must be taken. One such measure is the dispersion of support capabilities and assets over space in order to maintain a lower target profile. The increased capabilities of communications supports this dispersed foot print while maintaining centralized control. However, often due to the infrastructure of the theater and area of operations, many logistics units are frequently located in close proximity to the major airports and sea ports of debarkation. Therefore, the overall theater defense plan must incorporate the protection of logistics capabilities throughput the theater.

In addition to principle and functions joint doctrine also discusses logistics considerations (See Appendix A). These considerations outline how the joint force should plan and conduct logistics operations. For example, the availability and capabilities of lodgments, ports and facilities will often place constraints and limitations on operations for the theater CINC and therefore is frequently the first objective of a campaign plan. These logistics factors thus influence the determination of the operational and possibly strategic objective. The establishment of bases and deployment of forces into theater set the initial conditions from which to conduct follow-on

operations to achieve strategic goals. This initial move is the first step of operational art and logistically supports the means for war. As Dr. James J. Schneider points out in his article *Theoretical Implications of Operational Art* the second characteristic of operational art is "a system of sustainment will provide logistical depth in proportion to the operational depth of the theater."[42] Therefore the strategic and operational logistics capabilities materially impact the geographic commanders' campaign plan.[43] Another consideration, Movement Control, is the consideration of managing and monitoring the movement of units and material into theater and the intratheater movement required to concentrate forces and logistics which additionally supports the operational maneuver of forces. Logistics Discipline is the efficient utilization of material, industrial resources, and supplies within a theater. Exercising logistics discipline in planning creates true economy of supply.[44] These considerations are helpful for joint logistics planning and provide additional reference to joint logistics doctrine but are not entirely descriptive of methods or responsibilities for obtaining a focused logistics endstate.

The logistics effort must be integrated with the operational plan. Parallel and concurrent planning is imperative to ensure continuity and unity of effort. A plan in isolation assumes the risk of not being supported. The logistics effort should be focused forward to the optimal production of combat power with the minimum support possible.[45] Efficient logistics is a function of command.

Centralized command and control is essential to coordinate national and theater logistics operations and ensure unity of effort. Joint doctrine recommends that for a given area and for a given mission, a single command authority should be responsible for

logistics. As described earlier this is not a new concept and one that has evolved through U.S. Military history. So much so, that at the strategic level Congress, the national command authority (NCA), and Department of Defense has directly assigned responsibility for a number logistics functions to a single service as the primary executive agent at peace and in war. Joint Logistics Doctrine does not address these directed responsibilities and remains unassertive in describing joint logistics warfare requirements. Without some division of responsibilities and an impetus for change; the joint community will not achieve effective integration of joint logistics capabilities. A non-prescriptive, somewhat un-authoritative approach to operational logistics doctrine provides little guidance and assistance to the operational logistics planner who must bridge the strategic and tactical gap. Additionally, this approach forces the joint logistics community to repeat the same lessons. Once lessons are learned they should be avoided. Therefore this suggests that if a single command authority is not available to support logistics operations then one should be developed.[46]

Joint logistics is concerned with the apportionment and allocation of logistics resources primarily through the establishment of priorities and utilizing the joint staff and the Joint Material Priorities and Allocations Board (JMPAB). For allocation of transportation assets to deploy forces and material, the Joint Transportation Board (JTB) is used. The joint consideration of movement control is designed to ensure the effective deployment of forces with limited common user transportation assets. To address this consideration the Joint Planning and Execution System (JOPES) is used. Logistics discipline is synonymous to economy. Efficient use of resources is mandatory. Cost

must be considered and resource utilization accurately planned. The availability and utilization of a logistics reserve must be incorporated into a plan. However, next to a increased allocation of resources from the strategic level most limited operations will receive substantial reserve support assets. To accommodate this consideration most logisticians are not willing to accept risk of failing to support rapidly changing operations and will choose to stock excess material. This approach is wasteful, contributes to loss of material, and ultimately increases the redeployment time line. The availability of supplies from the industrial base is always a consideration mainly as an initial limiting factor for limited operations and time to accelerate production for a more unlimited action. The peace and wartime availability and production of precision munitions is an example of an industrial base consideration.

Joint Logistics Doctrine states that logistics is a function of command and holds services responsible for the support of their forces while highlighting the directive authority for logistics available to a geographical combatant commander. Doctrine provides principles and considerations to support logistics planning and execution that attempts to identify a clear framework on how to think about joint logistics. Though the principles and considerations are starting point for logistics theory the doctrine provides little guidance on how to think of joint logistics in order to support development of a unified logistics plan. For support of land warfare a look at U.S. Army and Marine Corps doctrine provides additional clarity while adapting its old principles to a new joint way of fighting.

The U.S. Army and the U.S. Marine Corps are the two primary land type forces available in the joint defense arena whose doctrine is required to support joint operations. A closer look at their principles and a comparison with joint doctrine will highlight disconnects in overall logistics doctrine. From this analysis and background the positive and negative effects of doctrine can be assessed with the examination of logistical operations in support of recent joint operations.

FM 100-5 *Operations:* U.S. Army:

U.S. Army keystone doctrine is FM 100-5 *Operations*, Chapter 12, *Logistics* identifies the five characteristic logistics must have to facilitate effective and efficient logistics operations. Those characteristics are anticipation, integration, continuity, responsiveness, and improvisation.[47] Of these characteristics, anticipation is foremost, though there is a increasing reliance on improvisation as the key to success in ad hoc support of joint operations.

For the Army anticipation is the identification, accumulation and maintaining of assets and information necessary to support operations at the right times and places. Integration is the planning and successful orchestration of logistics capabilities with the operational plan that gives the commander the greatest possible freedom of action and enhances the agility and versatility of an operation. Continuity of support is the lifeblood of combat operations. Responsiveness is the ability of the logistics system react effectively to an unexpected requirement. The final characteristic is improvisation, which is the talent to make, invent, arrange, or fabricate what is needed out of what is at hand.[48]

FMFM 4 *Combat Service Support*: U.S. Marine Corps:

The U.S. Marine Corps logistics doctrine is found in FMFM 4, *Combat Service Support*. Like joint doctrine the U.S. Marine Corps has the same seven principles of responsiveness, simplicity, flexibility, economy, attainability, sustainability, survivability.[49] The Marine Corps definitions of their principles may provide a better understanding of the terms and the intent of joint doctrine.

Responsiveness: ensures the right support at the right place and at the right time. Like joint doctrine, the Marines view this principle as the keystone. There is a understanding in Marine doctrine that economy or another principle maybe violated to enhance responsiveness.[50] This, in fact, is becoming a paramount challenge for a logistician.

Simplicity: avoids complexity. Support units are task organized to permit "*one stop shopping*" for essential supplies and services. Additionally, well understood mission type orders are prescribed, and direct liaison between the supporting and supported unit is recommended.[51]

Flexibility: like joint doctrine is the ability to adapt the support structure to changes in the operation. For the Marines the principle of flexibility envisions the development and use of alternative organizations and procedures. This structure should be centrally controlled but allow for decentralized execution and flexibility to meet operational needs.[52] The degree of this type of flexibility is dependent on a well trained and functioning command and control element.

Economy: provides support at the least cost in terms of the resources available and the necessary amount to accomplish the mission. This principle is clearly tied to the principle of war known as economy of force.[53] Just enough and not too much. The problem is, correct estimates are based on probability and chance, which is often a major and unknown factor in war. This is an area where information dominance will enhance not only tactical but also operational support. There is never a substitute for enough!

Attainability: provides the minimum essential supplies and service required to begin combat operations. The inability to attain the necessary level of support in any functional area can jeopardize success. Optimally, operations should not begin until the conditions for success are set.[54] As a principle this is the major effort of logistics preparation of the theater. Often the attainability of materials, supplies and support at or in an operational area will greatly influence the options available to the combatant commander at a given location and time.

Sustainability: maintains support throughout the operation. Long-term support is the greatest challenge for the logistician.[55] Due to limitations in the Navy inland support capabilities in 1947, the U.S. Army was assigned the executive agent responsibility to provide long term inland logistics support to the Marine Corps.[56] Today the Marine Air Ground Task Force (MAGTF) can support itself for sixty days using supplies afloat. As a logistics principle the Marines do provide sustainment support to their units and are assured operational or general type sustainment support from the Army by law.

Survivability: capacity to prevail in the face of potential destruction. To survive, logistics units must incorporate the passive measures of dispersion, and the active

measures of establishment of a ground defense plan.[57] The logistics principle of survivability is parallel to the principle of "security" in war.

The U.S. Army's capstone manual for combat service support is FM 100-10. This manual describes the combat service support for all Army forces, sister services, and multinational forces.[58] In this manual the Army establishes a correlation between joint logistics principles and the Army's logistics characteristics. Due to the similarity of Marine logistics principles with joint logistics principles, evident from the previous definitions; they will be combined in the following comparison table. This table illustrates the differences and similarities between the Army and the Joint-Navy logistics doctrine. This tables format and contents are similar to the comparison table in FM 100-10 *Combat Service Support*.

Joint Logistics Principle	Army Logistics Characteristics	Comparison / Comments
Responsiveness	Responsiveness, *Anticipation*	Providing the right support at the right palace at the right time. To accomplish this goal the logistician must forecast and anticipate requirements based on planed operations, historical and scientific precedence, and experience.
Simplicity	Anticipation, Integration	Purpose to ensure efficiency of operations at all levels. Procedures must be clear, and integrated with the capabilities of the supported unit. Streamlining of operations and centralization into a single source of support for the commander at all level is desirable.

Joint Logistics Principle	Army Logistics Characteristics	Comparison / Comments
Flexibility	Improvisation, Continuity	Ability to adapt CSS structure and procedures to meet changing environment. The system must be flexible not necessarily an adhoc structure to meet a collection of systemic needs. When all plans and preparations fail or appear to be failing this principle ensures continuity of support.
Economy	Integration	Synergize support capabilities to achieve the greatest support at the least cost.
Attainability	Anticipation, Integration	Set the conditions for operations by logistically preparing for operations. Requires close coordination with operational planners to ensure the required support is available prior to operations. This means maintaining a proactive mind set with dedicated logistics effort BEFORE operations are conducted.
Sustainability	Continuity, Anticipation	Sustainability, is the heart of the operational and tactical logisticians mission. This effort requires a continuous work from everyone in the support structure. From providing support, receiving support, to planing for future support. This is the tenant that is the primary impetus for Management Centers to control the flow of supply and transportation support among the various sub-functional area command such as medical and engineer.
Survivability	Continuity	The support structure is an integral part of the fighting force and are combatants in ever since of the word and must be prepared to perform its mission in a hostile environment and win.

Considering principles or characteristics, the intent and vision of how U.S. Military supports its land warfare fighting units is not too different. However, to ensure clarity and joint interoperability the U.S. Army and Marine Corps specifically, if not all services, should embrace the same terms in their keystone logistics doctrine. Sharing the same mental model of joint operational logistics will drive the further integration of cross

service capabilities necessary for unity and economy of effort. Logistics is a realm of warfare not unlike the strategic, operational and tactical spectrums and therefore should embrace the same principles of war accepted by the rest of the fighting force. Tenets or characteristics is a better method to guide military logistical thought. The number of characteristics should be a small as necessary to support a thought model for logistics that will encourage positive innovation and not become dogma. Additionally, characteristics which rely on improvised solutions to problems does little to guide unified thought needed to innovate long term solutions to systemic problems. Therefore, joint doctrine should investigate the possibility of adopting four logistics tenets or characteristics such as: Anticipation (plan, prepare, look forward), Integration (create synergy through the efficient and effective utilization of all *cross service* capabilities available), Continuity, (ensure a continuous support structure or to all supported unit), and Responsiveness: (ensure the system is attentive and supportive to the supported units needs and capable of adjusting sufficiently in a dynamic changing environment.). Simplicity, survivability (security), and economy are already established principles of war and are accepted as guiding factors in the development of logistical plans. Improvisation is a nice catch-all term that is nothing more than a keen sense of the obvious when all else fails. There is value in training soldiers to think outside of normal parameters in order to adapt existing systems to meet unexpected or un-supportable needs. As a tenet improvisation supports inaction from all services to address the systemic joint force logistics problems and should be eliminated from U.S. Army doctrine.

In addition to doctrine, the NCA, DoD and Congress has assigned executive agent responsibilities for various logistics functions in peace and at war to individual services in order to centralize the management of a common use commodity or service. Based on these legal requirements and the recent successes of centralized land warfare logistics since 1986 the Army has recently developed a new logistics command and control concept to support the Army Service Component Commanders (ASCC) Title 10 Army and joint theater logistics responsibilities. Given the executive agent and Title 10 responsibilities the Army has historically developed land based logistics organizations to meet mission requirements. Therefore, the Army has Division Support Commands, Corps Support Commands and Theater Army Area Commands. To address the increased requirement to consolidate strategic and operational logistics in a single functional command the Army is primarily tasked to support this function. Due to the unavailability of an active duty TAACOM to support contingency and OOTW operations the Headquarters elements are selected to provide command and control to the logistics effort. The COSCOM has proven successful but is not optimally designed for a theater support mission and is diverted from its primary corps support mission. To address this issue the Army is developing a theater support command to orchestrate land warfare logistics and use lessons learned from operations since the passing of the GNA in 1986.

The following is a list of the U.S. Army's wartime executive agent requirements followed by its Title 10 functional responsibilities.[59]

Executive Agent For:	**TO:**
Inland Logistics Support	USMC
Inland Class I Support	All Services
Supply Support of UN Peacekeeping Forces	UN

Operation of Common User Ocean Terminals	All Services
Intermodal Container Management	All Services
Transportation Engineering for Highway Movement	All Services
Common User Land Transportation In-Theater	All Services
Logistics Application of Automated Marking & Symbols	All Services
Military Customs Inspection Program	All Services
Military Troop Construction	USAF Overseas
Airdrop Equipment and Systems	All Services
Power Generation Equipment and Systems	All Services
Land Based Water Resources	All Services
Overland POL Support	All Services
Military Postal Service	All Services
DOD Enemy POW and Detainee Program	All Services
Blood Support	USAF
Military Veterinary Support	All Services
Medical Evacuation on Battlefield	All Services
Mortuary Services/GR Operations	All Services
Chemical Munitions	All Services
Disposal of Waste Explosives & Munitions	All Services

TITLE 10 Functions:

Mobilization/Demobilization	Construction
Deploy/Redeploy	Finance
Doctrine & Requirements	Information
Organize (TOE)	Intelligence
Training and Leader Development	Security/Law Enforcement
Equipment/Science & Technology (R&D)	Criminal Investigation
Supply	Service Headquarters
Service	Umbrella TDA Redesign
Maintain	Base Operations
Recruit	Joint Defense
Personnel Management	

Given this extensive list of U.S. Army executive agent responsibilities along with the list of title 10 responsibilities, it is evident that logistics is sufficiently complex to require a centralized logistical command and control element. This element can coordinate to provide the operational logistics bridge from CONUS to the tactical units on the ground in the area of operation. The issue at hand is how does the CINC exercise

directive authority for logistics in order to achieve unity and economy of effort. Joint doctrine should do more than establish a variety of command and control options available in Joint Pub 0-2 *Unified Action Armed Forces (UNAAF).* Logistically it should assign or describe the legal responsibilities required of each service and task those services to integrate with each other to develop a centralized structure that is modular and adaptable to the spectrum of conflict environments expected today and envisioned for tomorrow in *Joint Vision 2010.*

The Atlantic Command (ACOM) is developing a joint training capability and has outlined an SOP for joint taskforces. Additionally ACOM as well as EUCOM has conducted training exercises which requires U.S. Army corps to function as a joint task force (JTF). ACOM's Joint Task Force Exercise 97 exercised the XVIII Airborne Corps, and EUCOM exercised the V Corps JTF abilities during the 1st Armor Division Warfighter in 1997. Additionally, ACOM has developed a Joint Task Force Mission Training Publication to support the development and training of a JTF. This effort will continue to require emphasis to support the development and achievement of joint interoperability. However, experiences from operations such as Desert Shield/Storm, Restore Hope, and Uphold Democracy have indicated weakness and problem areas in joint logistics command and control that require fixing in order to improve the joint logistics unity and economy of effort. As ACOM points out, the logistics focus must be towards a coherent joint force. The ability to integrate the support required for each service component and total force is the key to synergy of effort. This unified effort oriented on a single goal is the solution to focusing logistics. Modernization, automation

and information management are all elements that will support the precision of the logistics focus to increase economy of effort.[60] However, the primary method of orchestrating logistics activity is through the function of command. A look at several operations demonstrates that the concept of consolidated logistics command and control is not new, and due to these experiences the U.S. Army has re-engineered the concept of a Theater Support Command (TSC).

To develop a flexible and adaptable theater support structure for a force projection force, the Army developed the Theater Support Command. It was realized that regardless of the size of the force deployed the theater support functions are always required to some degree. Development of this deployable command and control headquarters eliminates a great deal of "ad hocery" that existed in the past. The TSC provides a trained organization fully capable of handling the early key functions of reception, staging, onward movement, and integration and contracting (to include the Logistics Civilian Augmentation, LOGCAP). Additionally, this concept would consolidate the command and control of many of the functional headquarters that traditionally report directly to the Army Service Component Commander (ASCC) Deputy Commanding General for Support(DCG). Under this concept the Commanding General of the TSC could also be dual hatted as the DCG for Support of the ASCC. This would allow a separate single staff to theater logistics support, and allow the ASCC to concentrate on other operational responsibilities. The Army would force structure much of this change through the reorganization of the reserve component Theater Army Area Commands (TAACOM) such as the 377th TAACOM in New Orleans. Under this plan

the 377th TAACOM would become the 77th TSC. The TSC is organized into three modules. The Early Entry Module (EEM) with approximately 93 active duty personnel capable of deploying at D+1 in support of an ASCC of a JTF. At approximately D+30 functional modules from Personnel Support Command (PERSCOM), Finance Command, (FINCOM), Engineer Command (ENCOM), Medical Command (MEDCOM), Transportation (TRANSCOM), and TSC deploy and plug into the first module. In the last module, the command and control elements from the functional commands deploy as required for use under the TSC or directly to the ASCC. The decision to deploy part or all of modules two and three are based on mission requirements. See TSC notional organization and joint force relationship in Appendix B.

Operations Since 1986

Since the implementation of the Goldwater-Nichols Defense Reorganization Act in 1986 the United States Military has conducted a number of joint operations that have been greatly influenced by the unification law and the application of joint doctrine. The military has exercised its joint operational capabilities in Panama, Iraq-Kuwait-Saudi Arabia, Northern-Iraq, Somalia, Rwanda, Haiti, Macedonia, and Bosnia-Herzegovina among others. In these operations the combatant commanders have developed joint force commands to create unity of command and effort. On several operations the application of joint doctrine has influenced the development of a joint logistics command to serve as a single command authority for logistics.[61] It is evident to recognize this consolidating trend in the strategic logistics structure. Since 1992 the Defense Logistics Agency (DLA), formerly the Defense Supply Agency established in 1962, has procured 93

percent of the consumable items used by the military forces.[62] The Defense Logistics Agency, along with its subordinate defense centers of fuel, electronic and personal supply, has created a more unified strategic supply support structure. In order to bridge the gap from the strategic to the tactical level joint force commanders have created joint logistics commands to consolidate management of support provided external to the command and to orchestrate internal support operation. The question remains is a joint logistics command required, and more importantly, how should it be organized and operated?

In order to accomplish the establishment of a joint logistics command the CINC has used the logistics command structures of subordinate service components, primarily utilizing the Army for land warfare to develop the necessary headquarters support structure. This consolidated system was developed for Desert Storm/Shield using a hybrid of the current Theater Army Area Command (TAACOM) and old Theater Army Support Command (TASCOM) organizational structures.[63] For smaller operations other than war, such as Restore Hope and Uphold Democracy, a downsized consolidated support structure using a Corps Support Command (COSCOM) and subordinate units was developed and tried with some success. Although many lessons in the application of joint logistics were learned from these operations and continue to be learned in joint training, the presence of a joint logistics command structure is a common theme. In fact, in coalition operations combined logistics is an increasing trend. From this experience the next step is to develop a system that can benefit from lessons learned and is more

responsive to the spectrum of conflict in the future. As Colonel Peter W. Lichtenberger stated, the question is:

> "What is the most suitable doctrine and force structure for the combined concepts of theater-level command and control and the theater-level logistics necessary to support a CONUS-based force when deployed. The success of the 22d SUPCOM *(in Desert Shield Storm)*, as a TASCOM (theater army support command) and not as the prescribed TAACOM (theater army area command), indicates that there is room for improvement in our future doctrine."

It is unlikely that all future conflicts will allow the time to develop and deploy ad hoc organizations or provide the modern ports and facilities to support operational maneuver as experienced in the past.

Desert Shield/Desert Storm: Iraq-Saudi Arabia-Kuwait

The Third US Army commanded by LTG John J. Yeosock, was the Army forces commander for Central Command (ARCENT) in operation Desert Shield/Storm. During the initial deployment LTG Yeosock requested and received BG(P) William Pagonis to fill the position of senior logistician for Third Army.[64] General Pagonis, upon notification of reassignment from Forces Command J-4 to Third Army, quickly recruited several experienced logisticians in whom he had personal confidence to accompany him to Saudi Arabia. This small group developed the core of what was eventually to become the headquarters of a Theater Army Support Command (TASCOM).[65] Due to the ad hoc nature of this initial theater logistics organization General Pagonis was delegated command of ARCENT forward and on 18 August 1990 he was made commanding

general of ARCENT Support Command (SUPCOM) (Provisional) later titled the 22d Support Command.[66] As a provisional command there were no initial units or personnel assigned or habitually associated to perform the theater support mission. Therefore, Third Army initially allocated the 7th Transportation Group, a military police brigade, and a POL (petroleum, oils, and lubricants) Group to address operational requirements. Though these units provided some initial functional capabilities the SUPCOM was in need of logisticians to plan and conduct the rapidly expanding theater support mission. General Pagonis found it necessary to borrow personnel from incoming units, thus building a Headquarters Staff during the initial stages of the operation. Two factors impacted on the lack of logisticians in theater; doctrine and the unclear intentions of Saddam Hussein.[67]

According to doctrine a Theater Army Area Command (TAACOM) as an echelon above corps support unit is not scheduled for deployment until a second corps arrived into theater.[68] However, during the initial phases of Operation Desert Storm only one corps was scheduled for deployment into theater. The Third Army Commander, LTG Yeosock, was the Theater Army Commander; now termed in FM 100-7 *Decisive Force: The Army in Theater Operations* the Army Service Component Commander (ASCC), and was responsible to monitor and support all forces in theater. The ASCC had wartime executive agency responsibilities as well as Title 10 responsibilities for forces within the theater operational area.[69] With the establishment of the 22d SUPCOM as a command and control headquarters in the communications zone (COMMZ), the ASCC (Third Army) was able to orchestrate its combat service support (CSS).[70] Though the ASCC

improvised its development of a Army Central Command Support Command using active and reserve component soldiers as well as Department of the Army Civilians, it was fully within doctrinal guidance to do so.[71] The lessons to learn from DS/DS are; that ad hoc type support commands developed during an operation require time to organize, man, and equip a luxury which may not be available in future operations. The current Theater Army Area Command (TAACOM) currently in the U.S. Army force structure did not support the required endstate for the 22d SUPCOM. Another lesson is that new or improved DTLOMS are required for joint logistics support. DTLOMS should be developed that respond faster with greater efficiency to the theater support missions without moving mountains of supplies in the future.

The Army currently has five Theater Army Area Commands (TAACOMs); three active and two reserve; the 9th in Japan, 19th in Korea, and 21st in Germany are active duty units. The 377th in Louisiana and the 310th in Virginia are reserve units earmarked to support multiple corps operations. With the deployment of the VII Corps to Desert Shield/Storm the 377th TAACOM, which is based in New Orleans, was expected to take over the echelon above corps logistical function that the 22d SUPCOM had performed up to that point. The 377th, a reserve unit, was trained and equipped to carry out the theater support functions, but it would require some time to mobilize, deploy and transition into its support responsibilities. Generals Schwarzkopf and Yeosock decided that by December 1990 the theater support capability was well in hand after three months of development and team building in the 22d SUPCOM. Together, the generals decided not to deploy the 377th TAACOM late in the operation. This demonstrated the need for an

EAC logistical command and control headquarters capable of early rapid deployment to establish minimum required theater support during force projection operations. A balance of active and reserve forces are needed. At its peak, over 75 percent of the soldiers in the 22d SUPCOM were reserve component soldiers demonstrating the reliance of the military on the total force concept for EAC support.

Adhering to doctrine at the time the 22d SUPCOM should have been organized as a TAACOM; and charged with the responsibilities for supply, maintenance, and field services to corps and theater army units. In reality, the 22d SUPCOM was the senior logistical headquarters for the theater and as such served functions similar to those of the old Theater Army Support Command (TASCOM).[72] A TASCOM exercises control over five functional subordinate commands (Engineer, Medical, Personnel, Supply and Maintenance, and Transportation) and a multifunctional direct support command, the Area Support Command.[73] This organization allows the Army commander to focus effort on operational control of subordinate corps and armies.[74] Even though the 22d SUPCOM did not always exercise command and control over the medical, personnel, and finance functions during combat operations; during redeployment it assumed control over an even larger number of subordinate units.[75] Even General Pagonis suggests there is room to improve doctrine for future operations.

General Pagonis states that some adjustments to doctrine should be made. Of most importance is the concept of a single logistical point of contract. If the ASCC (Third Army) had not established the 22d SUPCOM or deployed the 377th TAACOM early in the deployment sequence, there would have been multiple logistics centers

competing for the limited logistical resources available. To support the consolidated command and control function General Pagonis envisioned assignment of at least 100 active duty soldiers to a reserve TAACOM, like 377th in New Orleans, commanded by a brigadier general to deploy early for contingencies, in order to set up the theater logistics.[76] This would allow a modular approach to build-up in theater, create continuity of support in the overall structure as it expands as required, and create a seamless logistical profile from strategic logistics activities --DLA, General Services Administration (GSA), AMC--to functional logistics units. Doctrinally this is a primary logistics objective.[77] The lesson learned from Desert Storm is that a consolidated logistics command is needed to focus logistics for an operation, achieve unity and economy of effort, and create a seamlessly bridge from the strategic to the tactical levels of logistics. Since Desert Storm additional lessons have been learned that support the Joint Logistics Command concept.

Restore Hope: Somalia

Logistics support for Restore Hope in Somalia used an organization called the Joint Task Force Support Command (JTFSC). The Support Command was a separate JTF component, co-equal to the service components, and consisted entirely of Army combat service support units. During the initial phase of the operation logistics support was provided by the Marine's 1st Force Service Support Group (FSSG), drawing on Maritime Prepositioning Force (MPF) stocks and Navy stocks prepositioned in Kenya. In the next phase a JTFSC was established from echelon above division (EAD) units.

During the final phase of the operation, logistics support transitioned from the JTFSC to United Nations Operations Somalia II (UNOSOM II).[78]

The 13th Corps Support Command (COSCOM) was designated the headquarters of the JTFSC after Army units began arriving in theater. However, this responsibility was never put into writing, resulting in command and control confusion. Though the JTFSC had both joint and combined responsibilities for planning and operations it was never recognized for joint staffing and an all-Army command. The JTFSC mission was "to provide logistics and medical support for U.S. Forces, and as directed/required, coalition forces deployed in support of Operation Restore Hope."[79]

The 13th COSCOM Headquarters without any of its major subordinate commands served as the command and control headquarters for the logistics command. The remainder of the command was an ad hoc collection of support capabilities from units such as the 62d Medical Group and 593d Area Support Group from Fort Lewis, Washington; the 7th Transportation Group from Fort Eustis, Virginia; the 240th Quartermaster Battalion (POL) from Fort Lee, Virginia; and 548th Supply and Services Battalion from Fort Drum, New York. From this support structure the JTFSC provided logistical support to all U.S. Military Forces and some United Nations forces in Somalia. This was the first time in modern military history when a COSCOM was given the mission to provide theater-level support. The lessons learned with regards to the logistics support command during operation Restore Hope are inconclusive but demonstrate a trend in the desire to consolidate logistics operations into a single command for joint operations.

The JTFSC was considered a success due to the leadership of the command and its determination to make it work. From the Center for Army Lessons Learned (CALL) report from Operation Restore Hope, the issue of the joint logistics command was raised: Should the Army be the executive agent for joint theater logistics or should Army assets be provided to a joint/combined task force? In the CALL answer, the positive aspects of the JTFSC were highlighted as: 1.) The ability to balance priorities for the theater, 2.) Afforded economies of scale not attainable through single service support. 3.) Provided a transitional command for residual elements as main forces redeploy. The question of should the Army be the executive agent for joint logistics is a legal and directive issue given the current set of peace and war time executive agency responsibilities assigned by Congress and the NCA. Granted, if the requirements, tasks or missions go away the Army does not need to develop DTLOMS to support the consolidated logistics function. However, historically and currently this a primary responsibility of the Army. The more definitive question is, should there be a joint staff in a joint logistics command, and if so, what level of joint integration is required? It is evident given the Desert Shield/Storm and more recent Restore Hope examples, that the U.S. Army has a functional framework to conduct joint logistics operations. Early notification, planning, training and preparation for a joint logistics mission provides the obvious advantage of anticipating requirements and increased efficiency and coordination prior to deployment. Continued adjustment of organizations will only improve the capability of what is already viewed as "the finest theater level combat service support organization in the world: *and* it will be either sought after or modeled in any future peace operation.[80] Improvements in

organization and procedures are needed to improve speed of deployment, proficiency, interoperability, and economy of effort of joint logistics.

Uphold Democracy: Haiti

The concept of a joint logistics command was employed again for operation Uphold Democracy. This version of a Joint Logistics Support Command (JLSC) developed by the J-4 of ACOM was a outgrowth of the LSE concept during the Gulf War and the Logistic Support Command in Somalia. The goal was to deploy a headquarters element to provide command and control of the various Department of Defense and service support commands such as Army Material Command, and Defense Logistics Agencies. The JLSC was tasked with tying all support activities together to coordinate operations in support of the JTF commander. The JLSC mission was to provide "logistics support to the Multi-National Force and execute and monitor the transition of logistics support to the Logistics Civilian Augmentation Program contractor Brown and Root." As in Somalia, the JLSC was a Major Subordinate Command of the Multi-National Force and was commanded by a brigadier general.

Once again planners and logistics executors wrestled with the non-doctrinal question of forming and using a joint logistics command. Though there were growing pains, ACOM had learned the lesson of developing the joint logistics command concept of support during the planning process using lessons learned from Desert Shield and Storm as well as Somalia. Following the successful employment of the JLSC the lesson learned was that the joint logistics command concept is a viable consolidated support

element that can orchestrate the capabilities of multiple support activities. However, it concludes that a JLSC only has value in a operation other than war (OOTW) environment.[81] For corps sized and smaller operations a corps support command (COSCOM) headquarters with additional augmentation from external support elements does provide a framework to consolidate command and control of external and internal logistics operations. However, a fully committed corps would quickly overwhelm the command and control capabilities of a COSCOM to control and plan support for the corps in most mid and high intensity environments. If the COSCOM headquarters is the logistics command and control base, there is less flexibility to focus on purely the combat support mission and requires increased effort for the theater support mission which may only be possible during a limited operation, low conflict environment such as Haiti. Therefore a separate logistical command and control element is desirable.

The DTLOMS implications were; Doctrine: The concept of the JLSC needs to be addressed in doctrine; Training: If the LSC concept continues the staff must be exercised and units trained to integrate with it; Organization: The Army in coordination with the Joint community needs to develop a Table of Organization and Equipment (TOE) for a JLC headquarters. Material: The JLC must have the necessary equipment such as vehicles, office equipment, communication, and automation to support its mission.[82] Given these changes to the joint logistics command concept it is evident that a consolidated logistics command and control element is an effective method of synchronizing logistics efforts. A JCL creates a less complex and streamlined support structure with a single headquarters that is capable of anticipating requirements to ensure

continuous and integrated logistical support. The consolidation of support for U.S. and United Nations operations has been prevalent for operations with the North Atlantic Treaty Organization (NATO).

Conclusions

Historically and doctrinally the United States military fights as a joint force. Despite concerns over massing too much authority and power into one department, for example the Joint Chiefs of Staff, the fiscal constraints of the current downsizing trend in the nation are driving separate military services to combine functions as much as possible. Logistics is a primary focus of this unification effort and has been extremely successful at the industrial base level. The same types of consolidation and savings are expected at the operational level. Additionally, not only are joint force commanders in operations other than war judged by their mission performance but also by their monetary performance. This is where a consolidated support command can generate visibility of resources and monitor expenditures. Given this and the nature of operations either in combat where the theater support for combat forces are high or in OOTW where support is for peace keeping, enforcement, or humanitarian assistance missions is also logistically intense. A operational bridge from the strategic base to the tactical level is needed. A rapidly deployable theater support structure is even more important for a force projection type force.

Therefore, a logistics command and control organization like the proposed Theater Support Command is needed to function as a centralized joint logistics support

command. This support command can orchestrate all reception, staging, and onward movement; contracting; and other government agency support such as DLA, AMC, etc.; as well as monitor the Logistics Civilian Augmentation Program and manage all other common user logistics support for U.S. Forces in theater.

The U.S. Army has obtained a great deal of recent experience conducting joint logistics support operations for operations like Desert Shield/Storm with the establishment of the non-doctrinal hybrid 22d SUPCOM. This command was extremely successful but was given the luxury of four months to organize and learn its job with minimal pressure from enemy force. There is little expectation that these conditions will be repeated in the future, and if so, are a poor basis for contingency planning. In operations other than war (such as Restore Hope in Somalia and Uphold Democracy in Haiti) the Corps Support Command Headquarters has served the command and control for joint logistics command. The results of these operations have been positive but the units were slow to organize and operate efficiently. The lesson learned is there should be additional planning, training, and equipping of augmentations prior to deployment. These are frustrated operations that have produced lessons learned at a unknown cost in efficiency. Additionally, like most land based logistics, there is little if any multiservice staff or functional support unit involvement at the COSCOM level. If the COSCOM structure is going to be the norm, then the joint community needs to include it into joint logistics doctrine as a recognized joint logistics command and control node. Limitations can only be identified and eliminated through the addition of the necessary personnel, training, and equipment. Once again the TSC with a rapid deployment command and

control capability, is optimal. It also allows the COSCOM to remain focused on its corps support mission on which the divisions are increasing more dependent.

It is evident from Desert Shield/ Storm and the joint directives to unify the militaries capabilities and leverage the entire spectrum of support capabilities into seamless system the current theater support organizations (TAACOMs) do not fully meet the theater support requirements. There is a need for continuous theater level support in theaters with single corps or smaller sized forces deployed. Theater support may include some of the capabilities from all the functional commands such as engineers, medical, transportation, finance, and personnel that are doctrinally available only in multiple corps operations. This type of theater support allows for the rapid build-up of combat power using a smaller military infrastructure. With only ten active duty divisions many operations may initially be a single two or three division corps theater, as opposed to a larger or multiple corps theater.

Finally, the military as a whole will never achieve true unity of effort without a common shared vision of logistics. Joint logistics doctrine should adopt the same principles of war and same basic tenets or characteristics that support further development of logistics doctrine and planning. This author has suggested characteristics that require positive action and do not repeat the principles of war. The suggested tenets are *Anticipation, Responsiveness, Continuity, and Integration.* Therefore, joint doctrine needs to be more directive and authoritative in its approach and allocate responsibilities to individual services and require support systems that are capable of integration. Without a doctrinal push, the services will continue to march to their own drum, waiting

for everyone else to adapt to their system. Only through integration of requirements and capabilities will the joint force be able to increase the precision of support which will focus logistics effort.

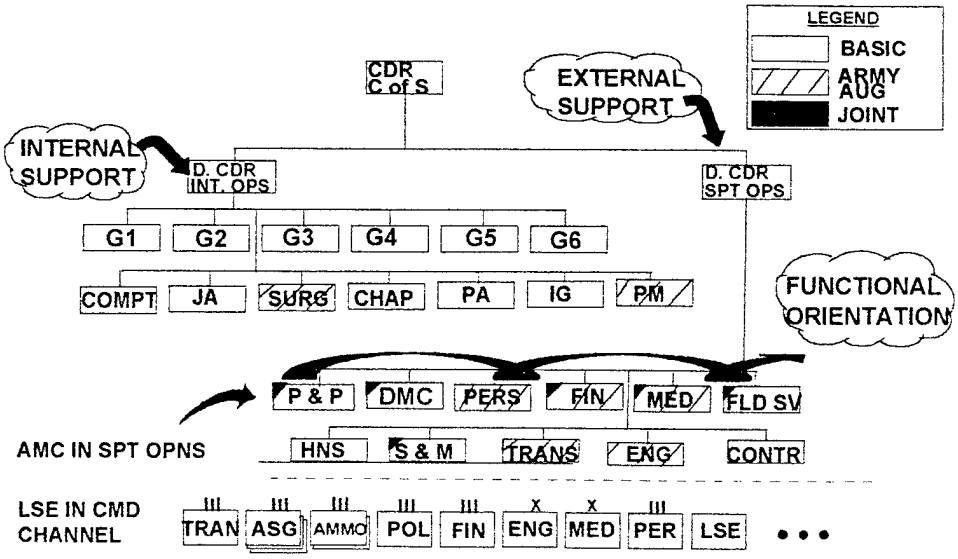
The Army has developed some useful and proven solutions to support theater problems, but could benefit from the input of the other services. Though the TSC concept is not currently recommended to be a joint command that possibility should not be overlooked. The joint duty and joint interoperability are still very much in infancy. The true potential to joint logistics synergy is only limited by our human prejudice, and lack of vision. Joint training and integration is not easy and requires the focused effort of everyone involved. Now is the time to make the adjustments and work through the tough interoperability issues.

Appendix A

a. Logistics as a Factor in Determining Objective.
b. Coordination of Logistics Planning With Operation Planning.
c. Forward Impetus.
d. Balance Between Combat Forces and Logistics Forces.
e. Command and Control of Logistics.
f. Apportionment and Allocations.
g. Accommodation for Wartime Requirements.
h. Logistics Disciple.
i. Movement Control.
j. Deployment Information Flow.
k. Logistics Reserve.
l. Industrial Base Requirements.

Appendix B

TSC HEADQUARTERS
(NOTIONAL ORGANIZATION)



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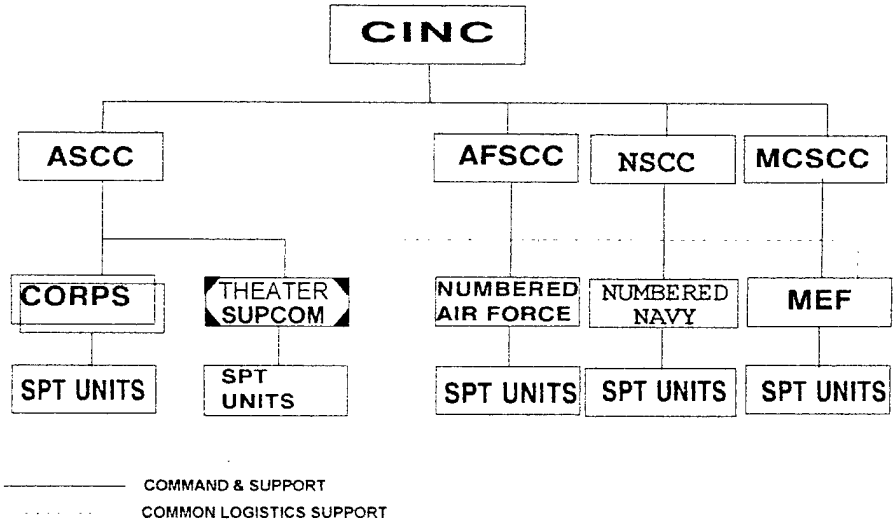

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