Special Feature

A historical review of US wars is replete with examples of a logistics system very capable of delivering strategic resources, but often failing in getting those resources from the port of debarkation to the actual point of consumption in a timely manner.

logistics Dimensions 2006

Air Force Deployments: Estimating the Requirement
Mending a Seam: Joint Theater Logistics

Structuring logistics to meet deployment and expeditionary requirements is one of the major dimensions of logistics today. Both of the featured articles examine ways to respond to the challenges associated with this dimension. The first article looks at what may be a better way to estimate Air Force deployment requirements. In this article, RAND proposes a parameterized rules-based approach for estimating deployment requirements. This method combines the speed at which planning can be done using force modules with the accuracy of the ad hoc approach.

There are many logistics seams between the *point of origin and the point of consumption*, but the largest seam is where strategic logistics meets theater logistics. The US military has done well at placing emphasis on strategic logistics. What it has not done is place that same emphasis and importance on theater logistics. Historically, the US military has a record of waiting until a contingency erupts to produce a theater logistics operation that gets the job done.

The second article examines a way to *mend this seam.* In it the article posits that by creating a Joint weapon system out of the Deployment and Distribution Operations Center (XDDOC) concept, the Department of Defense can mend the strategic-to-theater logistics seam and provide true Joint theater logistics. The XDDOC concept is not a panacea, but it appears to provide great promise towards improving theater logistics.

Introduction

Aptitude for war is aptitude for movement.

—Napoleon I

Special Feature

The United States is extremely capable of waging war, but its capability for moving, tracking, and controlling resources could be an Achilles heel during future conflicts if, as the military is transformed, the logistics system to create a seamless logistics capability that fully supports the warfighter is not also transformed.

In an effort to begin logistics transformation, the Secretary of Defense designated United States Transportation Command (USTRANSCOM) as the single distribution process owner for the Department of Defense (DoD), and charged USTRANSCOM with the overarching responsibility of ensuring the delivery of resources from point of origin to point of consumption with total-asset visibility (TAV). There are many logistics seams between the *factory and the foxhole*, but the largest seam is where strategic logistics meets theater (operational) logistics. This article posits that by creating a Joint weapon system out of the Deployment and Distribution Operations Center (XDDOC) concept, the DoD can mend the strategic-to-operational logistics seam and provide true Joint theater logistics.

Joint theater logistics is a complicated issue and involves many players, technology issues, and command relationships. This article will not address all the issues involved in mending the seam between strategic and theater logistics, but will concentrate on the United States Central Command (USCENTCOM) Deployment and Distribution Operations Center (CDDOC) Spiral 1 and what the report concerning the CDDOC describes as a way ahead.

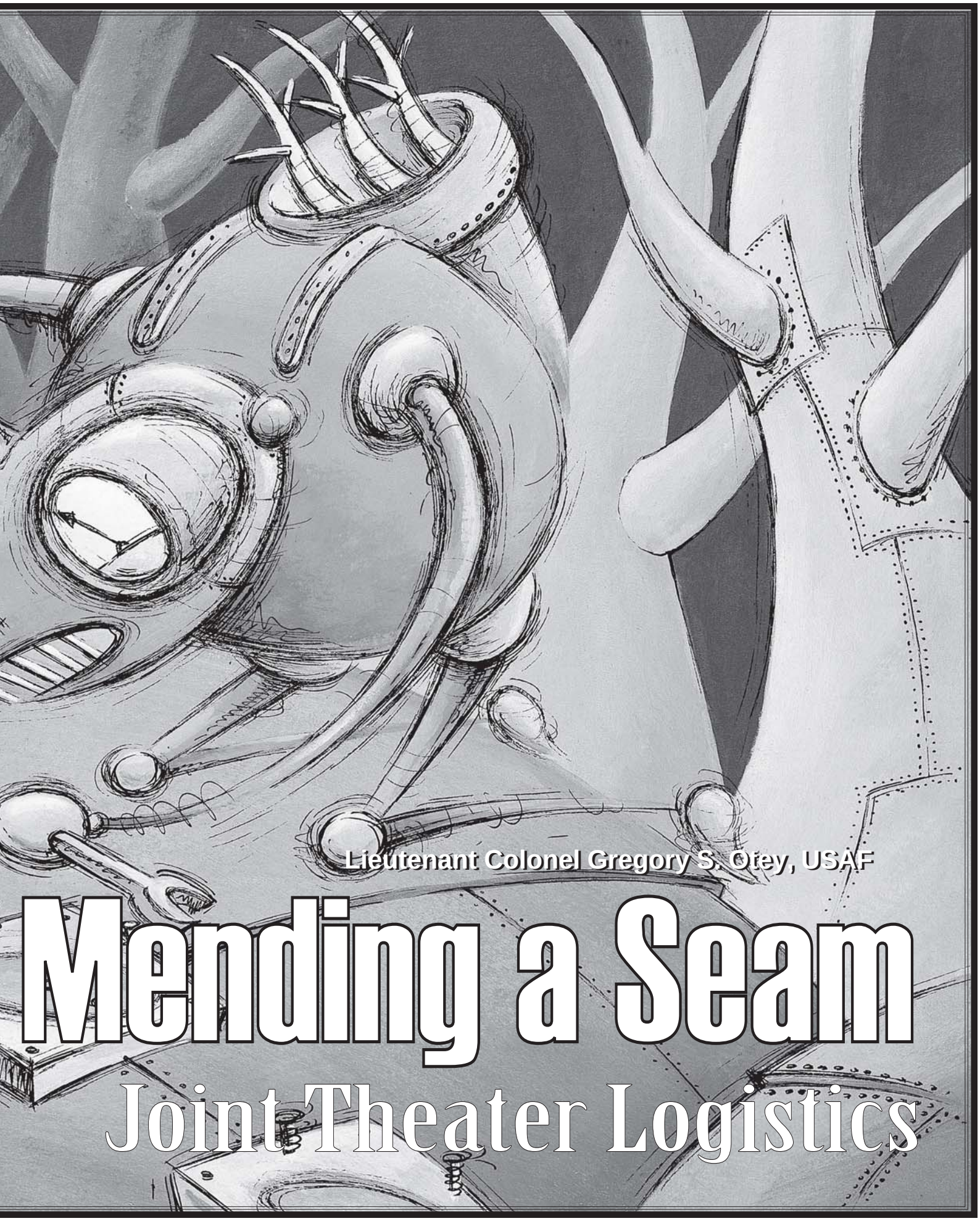
Historical Perspective Leading to the CDDOC

The current logistics apparatus was suited ideally to the battlefields of the Cold War, with more clearly defined front lines. It is not enough to ship supplies just to the nearest seaport or airfield. Nor can we solely depend on just-in-time concepts for fast-moving tactical forces. The current scenarios require a logistics infrastructure that can deliver supplies to the "last tactical mile…"

—Lt Gen Lawrence P. Farrell, Jr, USAF (Ret), President, National Defense Industrial Association

Logistics During World War II, Korea, Vietnam, and Desert Storm

A historical review of US wars is replete with examples of a logistics system very capable of delivering strategic resources,



Lieutenant Colonel Gregory S. Otey, USAF

Mending a Seam

Joint Theater Logistics

Article Highlights

There are many logistics seams between the *factory and the foxhole*, but the largest seam is where strategic logistics meets theater logistics.

This article provides a historical perspective of logistics during World War II, Korea, Vietnam, Desert Storm, and Operation Iraqi Freedom, including present day logistics and the creation of the CENTCOM Deployment and Distribution Operations Center (CDDOC). It examines the CDDOC by looking at what worked during Spiral 1, as well as problems which still persist and need attention. It also examines the Deployment and Distribution Operations Center (XDDOC) concept through the lenses of doctrine, organization, training, material, leadership, education, personnel, and facilities. The article posits that by creating a Joint weapon system out of the XDDOC concept, the DoD can mend the strategic-to-operational logistics seam and provide true Joint theater logistics. In the final section the author provides recommendations concerning how the XDDOC concept can be upgraded.

The XDDOC concept is not a panacea, but does provide great promise toward improving theater logistics. Although the CDDOC Spiral 1 was very successful, problems still persist due to the lack of total intransit visibility and a command and control structure that worked logistics hand-in-hand with the warfighter. Creating a Joint weapon system out of the XDDOC but often failing in getting those resources from the port of debarkation (POD) to the actual point of consumption in a timely manner. During World War II, Operation Overlord was ultimately a success, but the all important Normandy breakout came to a grinding halt because critically needed supplies could not reach lead echelons.

> …when the breakout from Normandy came and a tactical success was scored, full exploitation could not be achieved for lack of sufficient transportation…. In September, 1944 the allied armies halted their advance toward Germany because of lack of logistical support to the front, although there were ample supplies ashore in Normandy Base area, 300 miles away.[1]

Additionally, one can look at the Korean War for evidence of logistics struggles to get supplies to the *foxhole*. Joint Publication (JP) 4-01.3, *Joint Tactics, Techniques, and Procedures for Movement Control* cites the following example from the Korean War.

> Repeatedly [recalling the experiences of World War II], supplies were landed in such an excess of tonnage over the capabilities of the local logistic organization to cope with it, that pretty soon many things could not be found at all. The next thing, the Zone of the Interior had to rush out a special shipload of something which was right there in the theater—and always at a time when ships were worth their weight in gold. Soon the war moved on and supplies were left behind, which are still being gathered up and sorted out to this day [1953]. Two years after the Korean War started, I visited Pusan. They had been working hard, and by that time they had sorted out probably 75 percent of the supply tonnage there. Twenty-five percent of the tonnage on hand was not yet on stock record and locator cards; they did not know what it was or where it was.[2]

World War II and Korea provided numerous lessons observed but not learned as many of the same mistakes were made during the Vietnam War. Once again the logistics system did a good job of creating *iron mountains* of supplies. However, it eventually choked the PODs and was unable to get resources to the end user in a timely manner. The logistics system used in Vietnam was very stovepiped as "each Service requested and shipped its own equipment and supplies…" with no Joint oversight until the establishment of the Traffic Management Agency (TMA) in 1967.[3] General Heiser writes,

> …the zeal and energy and money that went into the effort to equip and supply US forces in Vietnam generated mountainous new procurements, choked supply lines, overburdened transportation systems, and for a time, caused complete loss of control at depots in Vietnam.[4]

Similarly, Desert Storm was an example of good strategic logistics capabilities and lack of the ability to properly execute operational logistics. Almost 25 years after Vietnam as the US military executed Operations Desert Shield and Desert Storm, *iron mountains* reappeared because of the requirement to have 60 days of supply for all combat forces prior to launching the attack.[5] Sustainment was also an issue for Desert Storm and was based on "…a push system that tried to push too much into Saudi Arabia too fast, and almost splintered it. Military Airlift Command went from 100 to 115 outloads at 35 locations in the US to 3 offload sites in Saudi Arabia."[6] It goes without saying, theater logistics hampered the warfighter.

Desert Storm also saw the first employment of the Joint Movement Center (JMC) where it was responsible to the combatant commander for theater logistics. According to

JP 4-01.3, *Joint Tactics, Techniques, and Procedures for Movement Control*, the JMC "should coordinate the employment of all means of theater transportation (including that provided by allies or the host nation) to support the concept of operations … and is the combatant commander's single coordinator with USTRANSCOM for intertheater movements."[7] The JMC was created to fix the seam between strategic and theater logistics, but was unable to do this during Desert Storm and is still today an organization created for the execution of Joint movement control, but not properly staffed and equipped to manage current theater logistics.

Present Day Logistics and the Creation of the CDDOC

In comparison to Desert Storm, when Operation Iraqi Freedom (OIF) was executed in March of 2003, the US military had made no major changes to doctrine, organization, personnel, and training relative to theater logistics support. It was better at strategic intransit visibility (ITV) and had prepositioned stocks, but still relied on the ad hoc-manned JMC to handle theater logistics. Logistically, it had not transformed. However, the way OIF was fought was transformational and unlike the previous Gulf War. To execute OIF and future wars, US forces would rely on speed, maneuver, and Joint or combined operations to mass effects versus massing forces. Instead of the 60 days of supplies on hand for Desert Storm, 5 to 7 days of supplies were on hand for OIF.[8]

The Secretary of Defense decision to cut the force structure for OIF by half, only 4 months prior to execution, caused the military to scrap the time-phased force deployment data used to identify the arrival schedule of forces required, with the support forces taking the brunt of that cut.[9] In the end, the US had a smaller theater logistics footprint providing support to a fast moving military force that covered two-thirds of the distance from the Iraq-Kuwait border to Baghdad (300 miles total) in only 36 hours, and eventually reached the capital 10.5 days later.[10] The Army's review of logistics during OIF summarizes logistics lessons learned. "The present supply system, while significantly more efficient than that which existed a decade earlier during the first Gulf War, lacks the flexibility, situational awareness, communications capacity and delivery means to fully meet the challenges of this new way of warfare with a reduced in-theater footprint."[11] After action studies pointed out that logistics during OIF and its play in the war's outcome "stemmed more from luck than design."[12]

Using logistical luck is not a strategy to "rapidly and decisively project power at great distances against all manner of adversary anywhere in the world."[13] The Secretary of Defense attacked the logistics problem head-on. On 16 September 2003, he designated the commander of USTRANSCOM as the distribution process owner and charged him with responsibility to "direct and supervise strategic distribution and synchronize all participants in the end-to-end supply, transportation, and distribution pipeline."[14] The USTRANSCOM Commander was given the overall responsibility to ensure that *stuff* made it from point of origin to point of consumption in order to support the theater warfighter.

Based on the historical analysis previously provided and a look at OIF logistics, it is not hard to realize the part not working in the US end-to-end logistics system was a part over which USTRANSCOM had very little control. USTRANSCOM's main task was to help the regional combatant commanders fix the theater

Article Highlights

concept, with doctrine to guide its employment, personnel properly trained and equipped, and leadership to direct and educate throughout the growth of this weapon system is a great start toward a Joint theater logistics capability.

Article Acronyms

AFSC - Army Field Services Command
AMC - Air Mobility Command
AOC - Air Operations Center
APOD - Aerial Port of Debarkation
AOR - Area of Responsibility
C2 - Command and Control
CDDOC - CENTCOM Deployment and Distribution Operations Center
CFLCC- Combined Force Land Component Command
CJTF - Combined Joint Task Force
XDDOC - Deployment and Distribution Operations Center
DDS - Defense Distribution System
DLA - Defense Logistics Agency
DoD - Department of Defense
ITV - Intransit Visibility
JFLCC - Joint Force Logistics Component Commander
JOPES - Joint Operations Planning and Execution System
JMC - Joint Movement Center
JP - Joint Publication
OIF - Operation Iraqi Freedom
POD - Port of Debarkation
SOW - Statement of Work
TAV - Total Asset Visibility
TMA - Traffic Management Agency
USCENTCOM - United States Central Command
USTRANSCOM - United States Transportation Command

logistics process by mending the seam between strategic and operational logistics.

To solve this problem, USTRANSCOM helped create the USCENTCOM Distribution and Deployment Operations Center (CDDOC). The CDDOC would be staffed with logistics professionals possessing the appropriate skill sets and would have reachback capability to the continental United States. The CDDOC gives USTRANSCOM an input to theater logistics and provides the theater commander with resources to help solve logistics at the operational level. On 12 December 2003, USCENTCOM approved USTRANSCOM's concept for a CDDOC, and the CDDOC was deployed in early 2004 for Spiral 1 of the new pilot program.[15]

What is the CDDOC?

The CDDOC was created to link strategic deployment and distribution processes to operational and tactical functions in support of the warfighter, with the ultimate goal of improving logistics from the point of origin to the point of consumption.[16] In order to do this, the CDDOC is staffed with members from USTRANSCOM, Joint Forces Command (Joint deployment process owner), Defense Logistics Agency (DLA), Army Material Command (ArmyMC), Air Mobility Command (AMC), Joint Munitions Command, Army Field Services Command (AFSC), and the individual Services. Discussions between USTRANSCOM J-3, USCENTCOM J-4, and DLA G-4 created a CDDOC mission statement.

> Confirm CENTCOM deployment and distribution priorities, validate and direct CFACC [Combined Force Air Component Commander] intratheater airlift requirement support to components and CJTFs [combined Joint task force], monitor/direct CFLCC [Combined Forces Land Component Command] intratheater surface distribution support to components/CJTF's, adjudicate identified CENTCOM distribution and intratheater shortfalls, coordinate for additional USTRANSCOM support, provide TAV and ITV for intertheater and intratheater forces and materiel, and set the conditions for effective theater retrograde.[17]

So, what is the difference between the CDDOC and the USCENTCOM JMC? The CDDOC is collocated with the CFLCC at Camp Arifjan, Kuwait and integrated into the JMC with tactical control provided by the USCENTCOM J-4. JP 4-01.3, *Joint Tactics, Techniques, and Procedures for Movement Control,* defines the mission of the JMC: "The JMC is in charge of movement control in the theater" and "must plan, apportion, allocate, coordinate, and deconflict transportation, as well as establish an ITV system to assist in tracking theater movements."[18] Based on the mission statements, the purpose of the CDDOC and JMC is essentially the same. The difference is that the CDDOC brings personnel with the correct skill sets and information technology to execute reachback to better perform strategic to operational synchronization in deployment, sustainment, and distribution of resources to the warfighters. In the author's opinion, the CDDOC properly staffs the JMC to perform its defined functions in a theater of war.

Evaluation of the CDDOC Spiral 1

US logistics systems can track all shipments and deliveries from the United States to overseas port of debarkation. But it lacks full "factory-to-foxhole" visibility of the supplies once they enter a theater of war. That visibility is essential in today's battlefields. The point of failure is at the seam between the strategic and operational level.

—Lt Gen Gary H. Hughey
Deputy Chief US Transportation Command

What Worked

The *CDDOC Spiral 1 After Action Report* provides insight into CDDOC initiatives that are working to improve end-to-end logistics for the warfighter. Prior to the CDDOC's standup in the USCENTCOM area of responsibility (AOR), the USCENTCOM commander and his component commanders were continuously frustrated by the lack of visibility and oversight of forces deploying to the theater. This was primarily a problem because the lack of visibility did not give enough lead time to proactively posture to accept forces, but required commanders to react after forces arrived. Once again, forces could be efficiently and effectively deployed from the aerial port of embarkation to the aerial port of debarkation (APOD), but the coordination for follow-on movement (a Joint movement request) did not occur until after arrival at the APOD. This created unnecessary delays at the APOD and forced a reactionary measure versus proper planning.

This problem was solved through a CDDOC initiative called *Single Ticket.* Single Ticket enforces a single Joint Operation Planning and Execution System process for all passenger movements, across strategic and theater action agencies, and eliminates redundant tasks."[19] Not all forces are able to move via Single Ticket, but those that do, "move directly through strategic into theater lift and to the final destination while providing total visibility of the forces and reducing loiter time at interim locations…" A measure of the improvement after Single Ticket was initiated is that loiter time at interim locations was reduced by over 200 percent.[20]

In addition to improved force deployment, CDDOC was responsible for two initiatives that aided delivery of cargo. The first centered on intermodal diversion of cargo pallets. In this case, when direct delivery via airlift to Balad was unavailable due to higher national priorities, cargo was diverted via commercial air to Kuwait and then moved via truck to the theater distribution center where it was processed for movement via convoy north to Balad. The CDDOC synchronized and metered cargo flow to accommodate ground movement constraints. Cargo movement from Kuwait to Balad averaged 2.6 days, ensuring timely delivery of priority cargo.[21] The second cargo initiative was *Pure Pallets.* This initiative centered on the realization that it was better to wait a couple of extra days to build pallets at the depot or aerial port of embarkation, instead of using break-bulk/sort/distribution operations in the field.[22] Once again the CDDOC assisted this process with oversight and synchronization.

In addition to helping provide more efficient and synchronized theater airlift, the CDDOC was responsible for helping save money throughout the theater distribution process. The biggest money saver came through helping USCENTCOM logistics better manage its vast number of commercial containers used to distribute and store supplies throughout the theater. "When the CDDOC arrived in theater, it identified 23 sources for container data, thousands of containers missing from the ITV system, and detention charges accruing at $15M per month."[23]

The carrier owned containers were being used, in locations that lacked permanent infrastructure, as storage facilities, protective barriers, brigs/stockades, and sometimes as temporary base exchanges. The CDDOC was able to help synchronize container reporting and merge the multiple sources of container data. After collecting the concerns of all theater container managers, the CDDOC helped develop a statement of work (SOW) and standard operating procedures for better contractor execution and monitoring of containers throughout the USCENTCOM AOR.[24]

Containers were not the only theater distribution resource needing better management. The backbone of airlift logistics, 463L pallets and nets, needed some *attention to detail* to improve theater logistics and the overall Defense Transportation System (DTS). Much like the containers, there was insufficient visibility, control, and maintenance of 463L pallets and nets throughout the USCENTCOM AOR.[25]

The CDDOC implemented a Web-based AOR tracker by modifying existing Air Mobility Command software that facilitates pallet and net asset tracking. The program "enables pallet and net monitors within the AOR to report assets on hand in relation to authorizations."[26] Because the system was Web-based, visibility for all concerned parties was increased, which led to more effective and responsive asset management—over 6,000 pallets and 11,000 nets were returned to the DTS.[27]

Along with better net and pallet management, the CDDOC also was responsible for helping to ensure better maintenance of these assets. Dirty pallets and nets will clog the logistics system much like dirt in a pipe can clog or slow the flow of water through that pipe. The CDDOC drafted a SOW to establish a contractor-operated pallet and net cleaning service. This was a first of its kind SOW and allowed pallets and nets to be consolidated at central locations and cleaned and prepared by local contractors for return to the DTS. This relieved the cleaning burden from the overworked and undermanned aerial ports staffs, allowing them to improve and provide better port service.[28]

Another first of its kind was the CDDOC's testing of the Talon Reach Iridium device. The Talon Reach Iridium device is a tracking device attached to surface logistics movements to provide real time location and cargo manifest data. The CDDOC was able to bring together all the required players to carry out this test, and during a 2-day test successfully tracked priority cargo, location, and content without any user intervention.[29] This kind of TAV and ITV is a key ingredient in creating a Joint theater logistics system.

By providing personnel with the correct skill sets and reachback capability, the CDDOC was better able to synchronize and direct theater logistics than had been the case with the JMC. Many of the CDDOC's Spiral 1 initiatives were successful, but there is still a long way to go to reach the goal of true Joint theater logistics.

Problems Still Persist

Based on all written accounts of Spiral 1, the CDDOC was successful at achieving its four primary goals of improving theater asset and intransit visibility for forces and supplies, synchronizing strategic and operational distribution systems, developing performance measures, and focusing on container and air pallet management and accountability.[30] The CDDOC was successful to the point that other geographic combatant commanders are establishing XDDOCs. Although CDDOC Spiral 1 achieved its goals, there are still problems that persist.

In the author's opinion, the number one overarching issue that still persists throughout the theater logistics system is customer confidence. When customers have problems acquiring needed supplies, they attempt workarounds that may do more harm than good in relation to the theater distribution system. The customer may order twice the quantity required, or resubmit an additional requisition. In addition, the customer's immediate theater supplier, in an attempt to *better* support a unit, may go into a *push* mode by sending more than required or items not requested. This type of logistics cannot support warfare that requires units to be light, lethal, and very mobile. For a unit to have confidence in the logistics system, the supplies they request must arrive in a timely manner or they must have accurate and up-to-date information on supply status, in order to continue, or alter operations accordingly.

The CENTCOM Deployment and Distribution Operations Center was created to link strategic deployment and distribution processes to operational and tactical functions in support of the warfighter, with the ultimate goal of improving logistics from the point of origin to the point of consumption.

In the author's opinion, to begin to improve customer confidence, one must begin by solving the problem of theater intransit visibility. JP 4-01.3, *Joint Tactics, Techniques, and Procedures for Movement Control* defines intransit visibility as: "The ability to track the identity, status, and location of Department of Defense units, and nonunit cargo, and passengers; medical patients; and personal property from origin to consignee or destination across the range of military operations."[31] ITV allows the customer to monitor requests and plan accordingly, but it also allows more efficient use of theater distribution assets. The capability for logisticians to locate and track, in real time, over two-thirds of strategic logistics destined to a theater such as USCENTCOM's exists, but once it arrives in theater much of this visibility is lost.[32] The CDDOC has helped improve ITV for the theater, but improvements are needed in order to create better customer confidence in the theater logistics system.

A Joint theater logistics system with complete theater ITV must have *one boss that speaks and enforces* for the good of all. The current logistics system, and something the CDDOC struggled with, is a logistics system too stovepiped for today's warfare. The Army's logistics chief, Lieutenant General Claude V. Christianson, accurately described this condition.

> When the Army, Navy, Air Force, and Marines work side-by-side in the same region, as they did in Iraq, the combined supply system is a clashing mismatch of different cultures, incompatible communications systems, different stock numbers for similar items, even different vocabularies. Keeping track of a spare Marine Corps tank transmission as it moves from a Marine Corps depot to an Air Force cargo plane to an Army truck, for instance, is one of our biggest challenges.[33]

In its statement on command relations and directive authority during its pilot test, the *CDDOC Spiral 1 After Action Report* shows how the Services remain very parochial and stovepiped in theater logistics.

> …although CDDOC had directive authority for intratheater airlift, it was never provided with official 'directive authority' over theater surface transportation resources and assets that would have helped to synchronize the inbound and outbound cargo and passengers. The directive authority over those transportation assets rested with the CFLCC C-4, and the 143d Transportation Command.[34]

XDDOC as a Joint Weapon System

The US military has done well at placing emphasis on strategic logistics. What it has not done is place that same emphasis and importance on theater logistics. Historically, the US military has a record of waiting until a contingency erupts to produce a theater logistics operation that gets the job done. It was not until 2 years into the Vietnam War that an attempt was made at Joint oversight of theater logistics with the TMA. Then it was not until Desert Storm that the JMC was employed to try to improve on the TMA. In the author's opinion, creation of the CDDOC is a result of inadequate performance by the JMC and theater logistics. If we fail to improve on the CDDOC initiative, the US military will continue to fight at less than its full potential.

When looking for models that could provide an example of how to upgrade the CDDOC and theater logistics, one only has to look to what the Air Force has done in making the air operations center (AOC) a weapon system in order to improve command and control of airpower. A spin-off of the CDDOC Spiral 1 was the creation of an XDDOC that could be used as an organizational concept for other theater areas of responsibility. The XDDOC is scalable, based on the requirement for each theater or contingency, and it is built around the *core* of a properly staffed JMC. The current problem is that geographic combatant commanders all have JMC Joint manning documents, but when they standup for a contingency, the JMC is never fully manned and many times the personnel deployed require additional training to be fully mission capable.[36] Originally the AOC had much the same problem when it would standup for a contingency, until the Air Force categorized it as a weapon system and placed the proper emphasis on the AOC being able to perform its wartime mission. As an Air Force weapon system, the AOC is much like an F-16 with standard training, equipment, and manning for all personnel qualified to employ or maintain it. Treating the XDDOC as a weapon system provides a scalable organization that can be properly resourced to provide required logistics and ensure customer confidence.

The two main publications for theater logistics are JP 4-01.3, *Joint Tactics, Techniques, and Procedures for Movement Control*, and JP 4-01.4, *Joint Tactics, Techniques, and Procedures for Joint Theater Distribution*. The primary change to these documents would be to incorporate the XDDOC concept and organization as a replacement for the JMC.

Not only are there stovepipe and compatibility issues within the logistics community, but the community also has compatibility issues with the warfighters it supports. Retired Vice Admiral Arthur K. Cebrowski, director of the Pentagon's Office of Force Transformation, described this dysfunction. "Supply problems in Iraq resulted, in part, because logisticians use separate information and command and control systems apart from those that the warfighters use."[35]

To successfully continue to transform the US military into an expeditionary Joint force, theater logistics capability must be simultaneously transformed. The CDDOC concept is a good start at improving theater logistics, but in order to provide the customer confidence required to fight today's wars, theater logistics must provide complete intransit visibility and speak coherently to the warfighters with one voice.

Upgrading Theater Logistics

Forget logistics and you lose.

—Gen F. M. Franks Jr, USA

DOTMLPF

It takes more than just calling something a weapon system in order to produce results. When creating a new weapon system, it is important to look at it across the full spectrum of all that goes into making it a working reality. One way to analyze possible upgrades to theater logistics through the XDDOC is to look at

doctrine, organization, training, material, leadership/education, personnel, and facilities (DOTMLPF) for the XDDOC, and what it requires to provide Joint theater logistics. Looking at the XDDOC through these lenses will allow one to see some of the associated problems, issues, technology, management, and implementation opportunities associated with successfully employing such an organization to manage and control Joint theater logistics.[37]

Doctrine

US Joint doctrine for logistics provides direction for creating and operating Joint theater logistics and would require only slight changes to include the XDDOC concept. The two main publications for theater logistics are JP 4-01.3, *Joint Tactics, Techniques, and Procedures for Movement Control*, and JP 4-01.4, *Joint Tactics, Techniques, and Procedures for Joint Theater Distribution.* The primary change to these documents would be to incorporate the XDDOC concept and organization as a replacement for the JMC.[38] Other logistics doctrine will need to be updated to integrate the XDDOC concept. Incorporating the XDDOC concept would have ripple effects throughout all publications that support the US military logistics system.

Organization

The XDDOC concept creates an organization properly staffed to perform the duties of a JMC. This new organization brings in personnel with the appropriate skill sets and reachback capabilities to properly manage theater logistics. The changes to the original JMC structure are minor, but the emphasis will be on the organizations that will be required to provide deployable personnel to the XDDOC as it is stood up and expands based on the contingency.[39] National partners required to provide personnel include USTRANSCOM, JFCOM, DLA, ArmyMC, AMC, JMC, AFSC and the individual Services. These national partners will require personnel trained and capable of deploying to multiple theaters that might standup an XDDOC. Organizational change will be more of a burden on the national partners than the combatant commanders.

Training

Training to support the XDDOC concept, much like the burden of organizational change, will reside with the national partners to ensure they have personnel trained to support an XDDOC throughout all possible theater AORs. An XDDOC weapon system would support that training effort. Much like learning to maintain or employ any weapon system, the XDDOC weapon system would have commonality that would allow anyone trained on the basic version to quickly adapt and operate an upgraded system. Looking at how personnel are trained to operate the AOC weapon system could provide insight into training XDDOC personnel.

Material

The three tenants of theater distribution are visibility, capacity, and control.[40] Until complete visibility and control exists, actual capacity is not known and there is a good chance the capacity available is not being used efficiently. Looking at the XDDOC's current ability to control theater logistics highlights the need to upgrade command and control (C2) systems. As previously discussed, the theater logistics C2 systems do not *speak* the same language as the warfighter's command and control system, making C2 less efficient. Along with C2 issues, problems exist with the information systems that provide ITV. JP 4-01.4, *Tactics, Techniques, and Procedures for Theater Distribution,* dated August 2000, discusses intransit visibility and states:

> "Technologies exist today that provide the capability to conduct continuous near-real-time tracking of logistic assets. This visibility is provided through the use and implementation of commercial off-the-shelf technology known, in commercial industry, as movement tracking system."[41]

If the technology existed in 2000, it begs the question, where was the robust capability to track theater logistics in 2005? To create the XDDOC weapon system, Joint logistics systems to command and control, distribute, and monitor theater logistics must be purchased or developed. This must include satellite allocation and enough bandwidth to provide C2 and ITV down to the unit level. It also is important to recognize that waging war often extends beyond pure Joint operations and must include the purchase of systems that can expand and grow to support allies and coalitions.

Leadership/Education

Leadership and ownership of XDDOC is essential in order to ensure it is properly staffed and equipped. This is key for it to grow to a level comparable to the AOC weapon system. Based on the Secretary of Defense designating USTRANSCOM as the distribution process owner, and charging it to ensure efficient and effective solutions for synchronizing the distribution of resources from point of origin to point of consumption, USTRANSCOM would be a logical choice to be the owner of the XDDOC weapon system. Education concerning the capabilities and requirements to support the XDDOC will be another important action for USTRANSCOM.

Personnel

The personnel issue is at the heart of the problem. Previously, the organization charged with oversight of theater logistics has been staffed ad hoc, *out of hide*, and with *warm bodies*.[42] It was only after USTRANSCOM was designated the distribution process owner and the CDDOC was created that an organization was staffed with personnel capable of providing theater logistics oversight. The personnel issue for the future is to ensure trained personnel are assigned to positions on the combatant commander's staff in order to make up the core of an XDDOC. In addition, the national partners who provide personnel to round out the XDDOC must maintain trained and deployable personnel to meet potential contingencies. It will be essential to create a Joint manning document to ensure everyone is on the same *play sheet* and knows who provides what when it comes time to expand the XDDOC for contingency operations.

Facilities

Because an XDDOC could standup in a variety of infrastructure environments (theaters range from immature to very mature), facilities need to be mobile and deployable to all geographic areas of responsibility. Much like the Air Force's AN/USQ-163 Falconer AOC weapon system, creating enough XDDOC weapon systems for every geographic combatant commander would provide the basic facilities to standup an XDDOC.

Conclusion

Strategy is to war what the plot is to the play; Tactics is represented by the role of the players; Logistics furnishes the stage management, accessories, and maintenance. The audience, thrilled by the action of the play and the art of the performers, overlooks all of the cleverly hidden details of stage management.

— Lt Col George C. Thorpe
Pure Logistics, 1917

Theater logistics from World War II to OIF is replete with examples of overlooking *all the cleverly hidden details of stage management* involved in theater logistics. In World War II, the breakout from Normandy, during Operation Overlord, was held back because of the inability to move resources through the theater logistics pipeline. Korea and Vietnam were examples of the capability to push supplies to theater APODS and sea ports of debarkation, but then an inability to move the *iron mountains* and get the *right stuff* to the *right place* at the *right time*. Iron mountains reappeared during Desert Storm and the JMC concept was employed to fix the theater logistics issue. Desert Storm was successful, and the inadequate results of JMC efforts to direct theater logistics were overlooked until post OIF analysis of the US military's ability to perform Joint theater logistics. This analysis showed a logistics system that was not the force enabler required for today's lean, lethal, and mobile military.

The US military is transforming, but the transformation to get resources the *last tactical mile* remains unsolved. High-level interest, with an eye on Joint theater logistics, occurred when Secretary of Defense Rumsfeld designated USTRANSCOM as the distribution process owner with overarching responsibility for ensuring delivery of supplies from point of origin to point of consumption—factory to foxhole. In order to carry out this responsibility, the commander of USTRANSCOM proposed the DDOC concept and, with the concurrence of USCENTCOM, deployed the CDDOC to Kuwait as a pilot program in January 2004.

The CDDOC was staffed with personnel armed with information technology and reachback capability that could link the strategic deployment and distribution process to theater logistics in support of the warfighter. The CDDOC merged with CENTCOM's JMC to create an effective team in support of theater logistics. Many of the CDDOC initiatives were very successful.

The XDDOC concept is not a panacea, but does provide great promise toward improving theater logistics. Although the CDDOC Spiral 1 was very successful, problems still persist due to the lack of total ITV and absence of a C2 structure that worked logistics hand-in-hand with the warfighter. Creating a Joint weapon system out of the XDDOC concept, with doctrine to guide its employment, personnel properly trained and equipped, and leadership to direct and educate throughout the growth of this weapon system is a great start toward a Joint theater logistics capability. The next step in a long-term vision might be to look at a Joint Force Logistics Component Commander (JFLCC). A JFLCC, with oversight and decision authority at the component level, could ensure that the XDDOC weapon system is properly employed and a warfighting enabler. The XDDOC weapon system with up to date ITV technology and an upgraded C2 system will mend the seam between strategic and operational logistics and help provide a way ahead to Joint theater logistics.

Notes

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22. USCENTCOM Deployment and Distribution Operations Center, 10.
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Logistics Stuff—Five Things to Consider

- **The operations/logistics partnership is a target for our enemy—protect it.** We must try always to think of an enemy's looking for the decisive points in the partnership. What we want to make strong, they will try to weaken. Where we want agility, they will want to paralyze us. What we can do to our enemy, we can do to ourselves by lack of attention. So all concerned with operations and logistics must protect and care for the partnership and the things it needs for success. This includes stuff and information and people. Also, we must not forget the corollary is just as important: the operations/logistics partnership of the enemy is a target for us; we must attack it.
- **Think about the physics.** Stuff is heavy, and it fills space. Anything we want to do needs to take account of the weight that will have to be moved, over what distance, with what effort. Usually this all comes down to time, a delay between the idea and the act. If we think about the physics, we can know the earliest time, we can finish any task and we can separate the possible from the impossible. It is crucial to determine the scope of the physical logistics task early in any planning process. Planners must know how long things take and why they take that long.
- **Think about what needs to be done and when—and tell everybody.** Once we have given instructions and the stuff is in the pipeline, it will fill that space until it emerges at the other end. The goal is to make sure that the stuff coming out of the pipe is exactly what is needed at that point in the operation. If it is not, then we have lost an opportunity—useless stuff is doubly useless, useless in itself and wasting space and effort and time. Moving useless stuff delays operations. Also, priority of order of arrival will change with conditions and with the nature of the force deploying. For example, the political need to show a presence quickly may lead a commander to take the risk of using the first air transport sorties to get aircraft *turn-round* crews and weapons into theatre before deploying all the force protection elements.
- **Think about defining useful packages of stuff.** Stuff is only useful when all the pieces to complete the jigsaw are assembled. Until the last piece arrives, there is nothing but something complicated with a hole in it. It is vital to know exactly what is needed to make a useful contribution to the operational goals and to manage effort to complete unfinished jigsaws, not simply to start more. Useful stuff often has a *sell-by* date. If it arrives too late, it has no value, and the effort expended has been wasted. The sell-by date must be clear to everyone who is helping build the jigsaw, and it is important to work on the right jigsaw first. In any operation, there is a need to relate stuff in the pipelines to joint operational goals, not to single-service or single-unit priorities. It is no good having all the tanks serviceable if the force cannot get enough aircraft armed and ready to provide air cover or ensuring that the bomber wing gets priority at the expense of its supporting aircraft.
- **Think about what has already been started.** The length of a pipeline is measured in time not distance. There will always be a lag in the system. It is important to remember what has already been set up to happen later. Constantly changing instructions can waste a lot of energy just moving stuff around to no real purpose. Poorly conceived interventions driven by narrow understanding of local and transitory pain can generate instability and failure in the system.

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