

Strategy Research Project

AN INTEGRATED SUPPLY CHAIN SOLUTION FOR THEATER DISTRIBUTION

BY

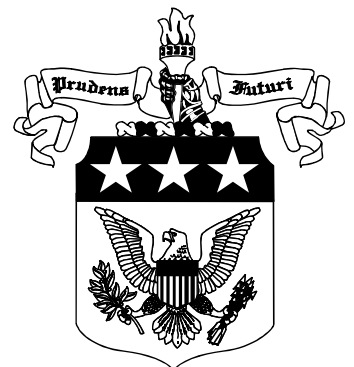
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by

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ABSTRACT

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In 2007, the Defense Logistics Agency (DLA), at the request of the USCENTCOM J4, led a multi-agency team to conduct an assessment of distribution operations in the CENTCOM Area of Responsibility. This research paper examines the recommendations developed by that team and the implementation of these recommendations. Using a supply chain management methodology, the team identified the customer base in relation to stock locations and requisition flows, identified efficiencies that could be introduced to the distribution system to eliminate redundant stocks and supply operations, and recommended items that should be stocked in the theater to reduce overall transportation costs and improve responsiveness to warfighter needs. This paper recommends how the findings of the DLA-led distribution assessment can be integrated into the training and career development of joint logisticians and into better automated planning tools in order to prevent the establishment of redundant, inefficient, service-specific distribution systems in future conflicts and operations.

AN INTEGRATED SUPPLY CHAIN SOLUTION FOR THEATER DISTRIBUTION

We are at a point where we have the opportunity to advance efforts to design and implement systems, processes, and organizational changes that will improve the support of tomorrow's joint warfighter.

—LTG Claude V. Christianson¹
Director for Logistics, Joint Staff

Following the end of the Cold War and the conclusion of Operation Desert Storm, the Services began transforming their logistics systems from supply-based, just-in-case methods to more cost-effective, distribution-based systems similar to those used in the commercial sector.² During Operations Enduring Freedom (OEF) and Iraqi Freedom (OIF), these changes resulted in vast improvements over the iron mountains of Desert Shield/Desert Storm. The logistics footprint in the theater was significantly smaller and there was some degree of visibility of supplies;³ however, these changes did not completely overcome many of the same problems that plagued logistics systems in the past. Numerous articles, studies and assessments document the logistics issues and shortfalls in the US Central Command (CENTCOM) area of responsibility (AOR) and all identify the root problem to be an ineffective and inefficient distribution system.⁴ Unfortunately, none provide a comprehensive solution or detailed plan on the implementation of its recommendations.

In late 2006, the CENTCOM J4 identified this dilemma noting that the distribution system still contained much inefficiency. He requested the Director of the Defense Logistics Agency (DLA) assemble a team of experts from various organizations to examine the findings of the previous studies, travel throughout the theater to confirm the currency and validity of such findings, and identify any new areas ripe for improvement.⁵ Most importantly, this team was to develop an implementation plan with an executable

timeline and tasks assigned to appropriate commands and agencies. This paper will examine the process used by the DLA-led team, the impacts of the team's recommendations, and offer recommendations as to how their supply chain management approach to optimize the logistics network in the CENTCOM AOR can be used to prevent repeating the same mistakes in future operations.

Background

The initial problems with the OIF distribution system resulted from decisions that were made in the planning stages of the operation, particularly with force sequencing. When the Time Phased Force Deployment Data (TPFDD) process was abandoned early on, the rapid buildup favored combat forces and ignored the importance of having logistics organizations and architecture on the ground at key points and nodes early on.⁶ The deployment of many logistics personnel and units were delayed until after combat troops arrived, many actually arrived after major combat operations were underway.⁷

Two significant shortfalls caused by the new force flow process were an inadequate number of transportation assets to move dry cargo and a lack of personnel, equipment and expertise to establish the general support (GS) base in Kuwait, especially for Class IX, repair parts.⁸ The lack of transportation for repair parts was further exacerbated by the reliance on bottled water which more than doubled the cargo truck requirement.⁹ Priority for these scarce transportation resources was given to rations, bottled water, and ammunition.¹⁰

The GS base was slow to develop because the existing Area Support Group (ASG) Class IX warehouse in Kuwait was only designed to support rotational units; there were no GS companies deployed to expand this capability. Eventually, the

Theater Distribution Center (TDC) was created at Camp Doha as an ad hoc solution to receive and sort the vast quantity of supplies arriving in the theater. But distributing the supplies to the proper units was further complicated by the rapidly changing task organization. This situation created problems within the Standard Army Retail Supply System (SARSS) and with the flow of requisitions to units whose task organization had been changed to a new headquarters.¹¹

Hundreds of pallets and containers were backlogged at various distribution points because of transportation constraints and inadequate asset visibility. The U.S. Government Accountability Office (GAO) found the Department of Defense (DoD) did not have adequate visibility over materiel transported to, within, and from the OIF theater of operations for many reasons, to include:

- Radio Frequency Identification (RFID) technology was not effectively used to track all materiel
- Asset visibility and other logistics systems were not fully interoperable
- Bandwidth and communications infrastructure were not adequate to allow access to asset visibility and other logistics information systems
- Data was not entered into asset visibility and other logistics systems in a uniform and consistent manner
- Containers and pallets lacked content descriptions and proper shipping documentation
- Units did not properly close out receipts of materiel in automated logistics systems
- DoD personnel were not adequately trained on the use of asset-tracking tools¹²

As the theater developed and matured, many of the initial Class IX distribution problems were overcome as logistics units arrived and the distribution network matured. By OIF rotation 05-07, Requisition Wait Time (RWT) for most Class IX orders was

approaching the theater's 20-day standard; however, performance was inconsistent and continually fluctuated in and out of standard. Contributing factors to this fluctuation included unit transitions, strategic transportation demands outside the theater, competing demands for intra-theater transportation, supply support activity (SSA) personnel turnover, and periods of limited movements caused by critical military or political events and operations.¹³

When faced with these difficulties and a loss of faith in the supply system, logisticians, regardless of service, often resort to alternative measures to obtain supplies.¹⁴ For a unit to have confidence in the logistics system the supplies requested must arrive in a timely manner or they must have accurate up-to-date information on the supply status.¹⁵ Because of occasional lack of supply visibility, some support units resorted to accumulating mountains of supplies for their combat units.¹⁶ Increasing visibility and reliability greatly reduces the counterproductive cycle of reordering which further burdens an already constrained distribution system and taxes the supply nodes.¹⁷

The distribution of Class III(B), bulk fuel, however, was not plagued by these same problems in the initial stages of OIF and provides an example of the results that can be achieved through careful planning. There were several reasons for this success, but it can be primarily attributed to the unity of command and unity of effort that existed for this commodity. All fuel operations fell under a single command, the 49th Quartermaster Group (Petroleum and Water), who owned the product, the distribution assets, and the distribution process.¹⁸ Intense command emphasis was placed on the development of fuel capabilities. LTG Wallace, the V Corps commander, stated,

We may have spent more time and energy on fuel at the expense of other commodities in hindsight that we might have anticipated being problems, but we just didn't have the same energy applied to it... We knew we were going to have fuel problems, and thus we spent a lot of time and energy trying to solve those problems...¹⁹

This emphasis on fuel operations led to the deployment of sufficient fuel storage and transportation assets dedicated to fuel distribution. Additionally, distribution was simplified by the use of a single fuel type, JP8, and a bountiful source of supply was located in the theater. The final factor that contributed to the success of Class III (B) operations is that refuel operations were well planned and rehearsed from the tactical through the operational levels.²⁰ Had logisticians applied this same rigor to developing the distribution system for other commodities, perhaps the resulting inefficiencies could have been avoided.

DLA-led Assessment Team Formed

Upon receipt of the CENTCOM J4's request for an assessment in the fall of 2006, DLA assigned the task to the commanding general of its field activity charged with managing distribution, the Defense Distribution Center (DDC). The DDC commander and staff immediately began planning to identify the scope of the study and determine which organizations throughout the DoD should be represented on the assessment team. The initial timeline set by the CENTCOM J4 directed the study be completed by the end of December 2006; however, this timeline slipped to late March 2007 due to the rapidly changing situation in Iraq. During the pre-surge period and initial months of the surge, Multi-National Force Iraq (MNF-I) and U.S. Army Central (USARCENT) severely limited visits to the theater. Additionally, leaders in the theater were skeptical over the utility of yet another assessment.²¹

Team Composition. The core of the assessment team was comprised of planners from DDC Strategic Plans and CENTCOM J4. The core members immediately began reviewing the existing studies and assessments and recognized the assessment would require the backing of the Joint Staff J4 to add legitimacy to the study and garner the participation of key players throughout the DoD.

In short order, the team expanded to include experts on specific logistics processes and representatives from other agencies and commands to gain their buy in. Representatives from the Deputy Under Secretary of Defense, Logistics and Materiel Readiness (DUSD (L&MR)) and U.S. Transportation Command (USTRANSCOM) were added for their expertise and abilities to influence changes to national logistics policies and procedures. The Army portion of the team included representatives from Headquarters, Department of the Army G4 (HQDA G4), Army Materiel Command (AMC), and an analyst from RAND. The General Services Administration (GSA) also participated as a part-time member of the team and captured several ideas for improvements to the storage and distribution of GSA supplies. The Joint Staff J4 did not participate in the theater portion of the assessment, but monitored the preparations and progress through a series of updates.

Guidance and Focus of Study. The team received specific guidance from the Joint Staff J4 and the CENTCOM J4 that defined the mission of the assessment team. The Joint Staff J4's guidance narrowed the focus of the study to logistics operations in the theater. He stated the team was to "define and improve the operational supply chain – Port of Debarkation (POD) to Supply Activity."²² The CENTCOM J4's guidance focused the team on specific areas that would have immediate and wide reaching

impacts by directing “actionable recommendations with an Action Plan based on MNF-I/Combined Forces Land Component Command (CFLCC) top concerns.”²³ The Joint Staff J4 also told the team that recommendations must address speed, reliability, visibility, and efficiency. Though broadly covered in earlier versions of joint logistics doctrine, these terms were later codified in Joint Publication 4-0, Joint Logistics (18 July 2008) under the Joint Logistics Imperatives of Joint Logistics Enterprise (JLE)-Wide Visibility and Rapid and Precise Response. For the assessment, the J4 described these terms as follows:

- Speed. The most important items go the fastest based on theater priorities.
- Reliability. Reliability reduces variability and meets customer defined expectations.
- Visibility. The goal is to approach 100% visibility of everything moving.
- Efficiency. Eliminate redundancy and pass the savings to the customer.²⁴

From this guidance, the team developed two goals for the study. The first was to optimize theater distribution processes and the second was to improve sustainment operations performance and efficiency. The first goal focused on improving the processes used to requisition and distribute supplies. It included objectives to integrate Information Technology (IT) processes, improve visibility of all en route items, and better consolidate cargo originating at multiple sources destined to a single customer. These objectives focused on improving order accuracy, improving the utilization of ground and air transportation assets and reducing the amount of handling required at tactical supply activities at the destination. The second goal aimed to reduce the logistics footprint by consolidating operations and inventories where unnecessary

overlap and redundancy did not add value. It also aimed to improve the identification and classification of items being retrograded out of the theater in order to reenter serviceable items that were still needed into theater inventory and dispose of unserviceable items in theater rather than shipping these items back to the Continental United States (CONUS) and incurring unnecessary transportation costs.²⁵

Based on the guidance and the initial review of previous studies, the team concluded that the assessment would be focused at the operational level and oriented on supply requisitioning processes and theater inventories for classes of supply II, III (package), IV, and IX. The CENTCOM J4 and the DDC commander believed improvements in these processes at the operational level would result in much greater efficiencies at the tactical level. The transportation network was also examined as a factor affecting distribution, but was not a primary focus of the assessment. By the time the assessment team arrived in theater in March 2007, the transportation system had already been expanded to handle the surge of forces and the resulting increase in sustainment flow. Therefore, the assessment focused on consolidation of inventory and cargo streams at major theater nodes to improve utilization of the existing transportation networks to free additional capacity for the movement of surge forces and sustainment rather than improvements to the transportation network.²⁶

Study Locations. The major nodes selected for the assessment included key logistics headquarters and operations throughout the theater. The assessment team spent the majority of its time in Kuwait since it serves as the primary entry point and central distribution hub for supplies less those delivered directly from CONUS to Aerial Ports of Debarkation (APODs) throughout the theater. However, elements of the team

branched out to Iraq, Afghanistan, Bahrain, and Qatar and to interview logistics staffs at the Navy and Air Force components and to observe key storage and distribution operations.²⁷

Methodology. The assessment team used a supply chain optimization strategy to develop its recommendations. In the commercial sector, supply chain management is a set of approaches utilized to efficiently integrate suppliers, manufacturers, warehouses and stores so that items are produced and distributed at the right quantities, to the right locations, and at the right time, in order to minimize system wide costs while satisfying service level requirements.²⁸ Supply chain optimization includes the optimal placement of inventory within the supply chain and minimizing operating costs (including manufacturing costs, transportation costs and distribution costs) while maximizing responsiveness to customer demands.²⁹

First, the team identified the customer base and which units were being supported by various supply activities. This identified the volume of demand throughout the system. In conjunction with demand, the sourcing logic and requisition flow used by various IT systems generated a picture of existing lines of communication as well as potential improvements to those flows. Based on demands, requisitioning logic, and stock availability, the team developed recommendations as to which items should be considered for forward stocking to reduce overall transportation costs and improve responsiveness to customers' needs. Finally, redundant inventories and work processes were identified for consolidation or elimination thereby further reducing costs and logistics footprint.³⁰

Assessment Team Findings and Recommendations

Using the above methodology, the team developed six specific recommendations that incorporated supply chain management principles and could be implemented in the near-term.

Recommendation 1 - Expand DLA Distribution Depot (DDKS) Support Beyond Iraq and Kuwait. Prior to the assessment, DDKS was primarily supporting customers in Iraq and Kuwait. With the exception of Army customers in Afghanistan, customers in other countries in the AOR were receiving their support from various locations around the world. For example, the Navy's 5th Fleet was receiving the majority of its materiel from Norfolk, Virginia and Yokosuka, Japan and the Air Force was flying its supplies from CONUS. In Afghanistan, the Army was filling requisitions for Army Managed Items (AMI) from Army-owned stocks in Kuwait, but requisitions for Non-Army Managed Items (NAMI), primarily supplied by DLA, were being filled exclusively from CONUS. For many items, the capability to fill an order from a location inside the theater would reduce transportation costs and greatly reduce the wait time. The team examined the distribution channels that existed between Kuwait and other countries in the AOR and determined this recommendation could be implemented with only minor modifications to the surface and air transportation systems; therefore, the team recommended customers in Afghanistan, Bahrain, Qatar, Djibouti be added immediately and customers in Sinai, Saudi Arabia, Oman, and United Arab Emirates be examined further and considered for inclusion.³¹

Recommendation 2 - Adjust Sourcing Logic to Leverage DDKS Platform. In order to benefit from the inventory at DDKS, the team recommended the Services adjust the sourcing logic of their IT systems to check for an item at DDKS prior to looking to

locations outside of the theater. DLA's and GSA's wholesale IT systems also had to be adjusted to check for availability at DDKS before sourcing requisitions from other locations in their world-wide inventories. In the year prior to the assessment, the Navy placed items at DDKS, but their retail system was passing requisitions for Pacific Fleet ships operating in the CENTCOM AOR to Japan and Guam. Eventually, those parts were eliminated from DDKS's inventory because there was no demand. Similarly, the Army was passing requisitions to Germany when requisition priority and required delivery date allowed before passing the request to DDKS thereby increasing transportation costs and the wait time for low priority items.³²

Recommendation 3 - Refine and Implement Forward Stock Positioning Policies.

In order to achieve the maximum benefit of DDKS's capabilities, the right mix of items had to be stocked there. The Services, DLA and GSA each had unique criteria for determining what they would stock. DLA utilized the same system at DDKS that it utilized at its CONUS locations. It was purely demand based and required five requisitions in a 12-month period to retain an item in inventory. The Army, however, utilized a more analytical approach developed by RAND that took into account the weight, volume and cost of each item. This analysis, still in use today, compares the inventory and materiel handling cost to forward stock an item against the transportation cost to ship the item via air from CONUS or other inventory location to the point of need. In general, items with low price-to-weight ratios and large items with relatively steady demand rates produce the greatest return on investment and are the best candidates for forward stocking. The inventory cost of very expensive items whether they are large, such as aircraft and turbine engines, or small, such as electronic components, far

exceed the transportation costs; therefore, DLA or the Service should only maintain sufficient inventory levels to meet world-wide demand and utilize military air or commercial overnight shipping services to deliver these parts. There are also items that fall very close to the break-even point between inventory and transportation costs. These items are generally large and dense and have a low or moderate price per pound. Examples include many engineered automotive products, diesel engines, and transmissions.³³ The team recommended that DLA work closely with the Army to adjust the DDKS inventory to incorporate the items RAND identified as good candidates for forward stocking. They also recommended a similar process be used with the other Services when they begin utilizing DDKS's capabilities.

Recommendation 4 - Ensure Supply Availability to Optimize the Overall Supply Chain. In order to forward stock the optimal mix of items, there must be an adequate quantity of each in the overall supply chain. This quantity of stock must be sufficiently robust to maintain a steady flow of replenishment items in the surface pipeline to the forward stock location. The assessment team found the inventory mix at DDKS was less than optimal and that items on backorder or in short supply were driving up air transportation costs. Far too few of the key airlift drivers (large, heavy items) were being stocked. The team recommended that Inventory Control Points (ICPs) set national stock levels so as to reduce overall supply chain costs and aggressively pursue items that were on backorder or in short supply to reduce air transportation costs. The team also recommended that ICPs be provided sufficient funding to make this possible.³⁴

Recommendation 5 - Consolidate Kuwait-based Sustainment Air Line of Communication (ALOC) Pallet and Container Building at DDKS. The two largest volume

container and ALOC pallet building operations were the Theater Consolidation and Shipping Point (TCSP) and DDKS's shipping section, both of which were contracted operations under the control of DDC. The TCSP was located at Camp Arifjan and DDKS is located in the Mena Abdulla industrial complex 15 kilometers north of Camp Arifjan. DDC considered combining these operations when they established the TCSP to replace the Army's Theater Distribution Center, but that option was ruled out at the time due to contractual issues and ARCENT's refusal to allow the operation to be conducted at a location off Camp Arifjan.³⁵

The team recommended combining ALOC pallet and container building operations at DDKS's location to reduce footprint, allow for better cargo consolidation and to move the operation into a modern indoor facility. The team also proposed the Surface Distribution and Deployment Command (SDDC) mission at the commercial container port of Shuwaik to transload the contents of commercial containers into government-owned containers be transferred to DDKS to eliminate this contract and potentially provide additional cargo for consolidation thereby further increasing container and pallet cube and weight utilization.³⁶

Recommendation 6 - Draw Down Army General Support Inventory. To fully leverage the capabilities of DDKS and eliminate another redundant operation, the team recommended the discontinuation of operations at the Army's GS warehouse in Kuwait. Appropriate inventory levels for items meeting the criteria described in recommendations 1 through 5 above would be established at DDKS. AMI and NAMI items the Army already purchased would be stored at DDKS under an Army ownership code and issued for small handling fee. Rather than incur a cost to actually move the

inventory, the team recommended it be depleted by ceasing replenishment shipments and issuing the remainder of the on-hand stock prior to closing the operation.³⁷

Impacts and Implications of the Team's Recommendations

Since the team concluded the assessment in 2007, many of its recommendations have been successfully implemented. Much of this success can be attributed to the cooperation the team received from the organizations studied during the assessment, the leaders outbriefed prior to departing the theater, and the senior logistics forums briefed upon their return to CONUS.³⁸

The team's first recommendation, to expand DDKS support to locations beyond Iraq and Kuwait, applies the joint logistics imperative of Unity of Effort. By consolidating inventories and forward stocking items at DDKS, all Services are benefitting from the joint demand. This recommendation yielded immediate results for the Army. The Army and DLA quickly adjusted support to units in Afghanistan and realized a reduction in RWT and potential savings of \$20 million in air transportation costs per year.³⁹ The other Services continue to work with DLA to stock service specific items at DDKS and also draw a larger percentage of their common item support from DDKS.

Additionally, the Navy is currently working with DDC to establish a DDKS satellite operation in Bahrain that will replace their existing retail supply operation.⁴⁰ This operation will allow the Navy to reduce the number of logistics personnel in Bahrain and reduce the amount of materiel shipped from CONUS, Europe, and the Pacific region to South West Asia.

The team's second recommendation, adjusting the sourcing logic of the Services' IT systems to check for items at DDKS before looking outside the theater, applies the

joint logistics imperative of JLE-Wide Visibility. When the Services IT systems can look into DLA inventories, as well as their own, to identify an item already located in the theater, the Services can utilize lower cost transportation and RWT should undoubtedly be faster.

The Army acted immediately and implemented the necessary changes to SARSS within six months, made possible through HQDA G4 and Army Materiel Command weekly teleconferences with DLA to monitor and track the efforts. The Army estimated the potential transportation savings from this recommendation to be \$3 million per year.⁴¹ The Marine Corps is currently working with DLA to position items at DDKS and change the sourcing logic of their IT system; the Navy's sourcing logic will be adjusted when DLA takes over the retail supply operation in Bahrain.⁴²

Current funding policies drive the Services to source requisitions from their retail stocks, regardless of location, rather than pass the requirement to the wholesale system.⁴³ This can be especially true in the early stages of an operation when the joint logistics system has not fully matured. If these financial policies are changed or appropriate procedures developed, perhaps the Services could look into each other's inventories achieving true JLE-wide visibility. Joint logistics planners must be knowledgeable of the current system biases and policy constraints during planning to better establish an integrated theater logistics network from the beginning of each operation.

The results of the third and fourth recommendations, refining forward stock positioning policies and ensuring supply availability to optimize the overall supply chain, demonstrate the joint logistics imperative of Rapid and Precise Response. By stocking

the optimal mix and quantity of items at DDKS, weight and volume are removed from the air channel as surface transportation is used to replenish DDKS's inventory. Additionally, RWT for all items is improved because large, heavy items are already positioned in the theater ready for immediate ground or intra-theater air movement to the point of need and space is freed on strategic airlift for other high priority items. The Army estimated the resultant savings to the DoD supply chain from the combination of these two recommendations is potentially \$150 to \$200 million per year.⁴⁴

Many times, an organization will focus on optimizing its portion of the supply chain with an adverse affect on the overall system. Funding policies and obligation authorities regarding inventory investments can drive such undesirable behavior. Prior to the assessment, item managers at the ICPs focused heavily on the funding available to maintain their inventories and focused less on the tradeoffs between inventory and transportation costs. When DLA purchases inventory and stores it in a stateside location, the Services pay the transportation cost to ship the item to the end user; however, when DLA forward stocks the item, the Agency pays the transportation cost to move the item to the theater. The DLA item manager may not be aware that the surface transportation cost incurred by DLA to replenish the forward depot actually results in a significant savings in the overall DoD supply chain.⁴⁵

Sometimes a larger inventory is needed to be responsive to customers' needs or to achieve savings elsewhere in the supply chain. In the recent past, commercial and military efforts focused on reducing inventory levels to the absolute minimum; however, this can sub-optimize the overall supply chain. The commercial sector is realizing this and there is a trend toward increased inventory.⁴⁶ Joint force logistics planners need to

determine the optimal quantity of inventory that should be forward stocked throughout the theater while weighing the tradeoffs between inventory costs, transportation costs, and responsiveness to warfighters' needs.

The team's fifth recommendation, to consolidate Kuwait-based sustainment ALOC pallet and container building at DDKS, was implemented by DLA and the Army and resulted in the elimination of a \$4 million contract.⁴⁷ By combining all the cargo originating at multiple sources in Kuwait destined to a single supply activity, the cube utilization for ALOC pallets and containers increased, thereby reducing the number of pallets and containers moving in the system and increasing throughput speed.

Additional savings in the strategic portion of the supply chain were realized when DDC was able to reduce hold time at their CONUS strategic distribution platform and ship a larger percentage of mixed consignee containers to DDKS where the shipments could be easily sorted into supply activity pure loads. Surface transportation costs were reduced by almost 50% as DDKS could handle 40 foot containers as opposed to the 20 foot containers normally required at other locations in the theater.⁴⁸

The team's recommendation of DDKS assuming SDDC's mission to transfer the contents of commercial containers into government-owned containers has not been implemented. SDDC maintains this mission should remain at the port as they are currently expediting the movement of pure-to-location containers into Iraq by cross loading the containers at the port in Kuwait and moving them by barge to the port of Umm Qasr. This recommendation should be reassessed periodically to determine whether moving the operation to DDKS would provide greater benefit than the current arrangement.

The team's final recommendation, to draw down the inventory at the Army's general support warehouse, was implemented and the appropriate inventory lines were established at DDKS; however, the Army decided not to completely close this operation. Instead the Army remissioned the GS warehouse to receive and sort retrograde items coming out of Iraq. Needed items are sent to DDKS and reintegrated back into the inventory under Army ownership; unneeded and unserviceable items are disposed of in Kuwait. The Army found this operation reduced the RWT for reused items by 3 to 14 days.⁴⁹

Recommendations for the Future

The DLA-led assessment in 2007 identified areas where the distribution system could be optimized to eliminate unnecessary redundancies, forward position the optimal mix of stocks, and improve responsiveness to warfighters' needs by utilizing basic supply chain management principles to apply the joint logistics imperatives. Had joint logistics planners employed these principles, been more assertive in the use of directive authority for logistics, and leveraged the capabilities that each Service and the combat support agencies had to offer, perhaps a more integrated and effective distribution network could have been established four years earlier. If DoD continues to rely on the same systems and processes used in the past, it will continue to make the same mistakes and design inefficient, Service-centric, logistics systems in future operations. The methodology used by the DLA-led assessment team and the distribution network that resulted should be considered as a model.

In order to equip planners with the necessary skills and knowledge to design more effective distribution networks, supply chain management principles should be

integrated into the training and career development of joint logisticians at all levels. At the junior levels, logistics officers and civilians must gain broad experience and detailed knowledge on the specific components of their Service's logistics system in order to fully understand the capabilities it can provide. As logisticians progress in rank and begin operating at field grade levels on Combatant Commander and Service-level staffs or in combat development organizations, they must become strategically and operationally focused and understand how to design logistics networks that integrate all the functions of logistics, including those from other Services.⁵⁰

Distribution problems in Iraq resulted, in part, because logisticians use information and command and control systems that are separate from those of the warfighter.⁵¹ More importantly, current logistics systems are lacking. A November 2008 survey by USTRANSCOM, the Distribution Process Owner, revealed joint logisticians believe they do not have sufficient access to distribution data and that distribution technology is the biggest obstacle that exists in the distribution pipeline today.⁵² Joint logisticians must be enabled with better automated planning tools and command and control systems. An automated planning system must be developed that analyzes all the logistical capabilities available to the Joint Force Commander (JFC) and provides recommended solutions to logistics planners that optimize the distribution network. Commercial capabilities should be considered in the development of such a system. Commercial companies could provide input on system development based on best business practices and offer advice on their experiences with various automated solutions for logistics planning.

Once such a system is developed and in use, it must consider combat support agency and commercial capabilities in the design of a distribution system. These capabilities can include equipment, services and information. As described in this paper, DLA in particular, provides tremendous capability that can reduce logistics costs and, more importantly, improve responsiveness to the JFC. Private companies may have unique knowledge that can enhance military planning. At times, they may have more logistics information regarding a potential operating location than government sources based on their experience working in many countries around the world.⁵³

Conclusion

Overall, OIF logistics were very successful and operations were never considerably hindered by a lack of logistical support. There were, however, several areas that could be significantly improved. The Army had executive agent responsibilities for many logistics functions that support all military forces in Iraq, but each service continued to maintain its own stovepiped systems, which were often redundant and competed for the same resources.⁵⁴ The DLA-led assessment identified several ways the distribution system could be optimized to reduce costs and provide more responsive support to the warfighter. Even though the Services are primarily responsible for their own logistics under Title X of the United States Code, future theater campaign plans must incorporate the strengths each Service, the combat support agencies, and, when appropriate, private industry can contribute to create an integrated logistics network. In order for this to occur, joint logisticians must have the right tools and must be knowledgeable of the principles of supply chain management.

Endnotes

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