The Department of Defense (DoD) logistics management process is uncertain, redundant, and inefficient. As the United States enters into a financial and resource constrained environment with an ever evolving threat, her military requires a single central logistics management process that coordinates action across the entirety of the organization in order to rapidly facilitate the flow of logistics between all elements and levels of the DoD. This process will affect command relationships amongst the joint community and the supported and supporting commands with precision, confidence, and action. Mirroring the success of the Joint Tasking Cycle, the DoD should implement a Joint Logistics Tasking Cycle as the over-arching logistics management process.
FUTURE WAR PAPER

TITLE:

FEEDING THE FAT KID AT THE BUFFET TABLE: TOMORROW'S DEPARTMENT OF DEFENSE REQUIRES A SINGLE LOGISTICS PLANNING PROCESS

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF OPERATIONAL STUDIES

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EXECUTIVE SUMMARY

The Department of Defense (DoD) logistics management process is uncertain, redundant, and inefficient. As the United States enters into a financial and resource constrained environment with an ever evolving threat, her military requires a single central logistics management process that coordinates action across the entirety of the organization in order to rapidly facilitate the flow of logistics between all elements and levels of the DoD. This process will affect command relationships amongst the joint community and the supported and supporting commands with precision, confidence, and action. Mirroring the success of the Joint Tasking Cycle, the DoD should implement a Joint Logistics Tasking Cycle as the over-arching logistics management process. With nearly thirty billion dollars invested, and hundreds of thousands of man-hours exhausted, the DoD lacks a single centrally developed, used, and managed ERP logistics system across the force. As the military enters into a financial and resource constrained environment with an ever evolving threat this logistics tasking process and ERP logistics system must coordinate action across the entirety of the organization in order to rapidly facilitate the flow of logistics between the supported and supporting. The United States military needs effective logistics to overcome and accomplish the nation's challenges. The JLTO process will enhance, not inhibit, operational design. A single centralized ERP logistics system will assist in anticipating requirements. A single centralized ERP logistics system allows DoD flexibility, adaptability, and responsiveness. Finally, the combination of the JLTO process and the ERP logistics system will be effective and efficient.
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"When Marines go ashore, they start from zero. Pioneering logistics troops ... build sustainability ashore to support operations across the entire spectrum of combat with the entire range of logistics. Combat logistics is second nature to Marine logisticians ... All this translates to an innate responsiveness and relative ease of movement."

--C. E. Mundy, Jr.

Think for a moment about the current logistics planning processes used to sustain military forces both in combat and garrison. Now, imagine replacing the numerous logistics planning processes with a single central system and process that provides near real time information down to the individual soldier or a bolt on a forward deployed vehicle, without having to contact the end-user for input. That single central system and process would affect command relationships between the supported and supporting with precision, confidence, and action. A single central system and process exist today as a theorized logistics tasking process and off-the-shelf software developed for successful private companies in order to track functions of logistics. However, what if each service component of the Department of Defense (DoD) employs their own logistics tasking process and is attempting to develop their own version of an off-the-shelf software. With nearly thirty billion dollars invested and hundreds of thousands of man-hours exhausted, the DoD lacks a single centrally developed, used, and managed logistics management process across the force. As the military enters into a financial and resource constrained environment with an ever evolving threat this logistics tasking process must coordinate action across the entirety of the organization in order to rapidly facilitate the flow of logistics between the supported and supporting.

A need exists for a DoD standardized logistics tasking process and a single central Enterprise Resource Planning logistics system in lieu of multiple decentralized service based processes and systems. A possible future vision for a standardized process and system is outlined in MCDP-4 Logistics, Chapter 3 "Creating Effective Logistics." However, MCDP-4
does not address the problem of probable hurdles the logistics tasking process and a single central Enterprise Resource Planning logistics system will face from DoD components. In addition, threaded within the probable hurdles, a simple holistic planning process cannot exist within multiple systems and processes.

**Historical perspective**

Logistics is a challenge. In his book, *Moving Mountains: Lessons in Leadership and Logistics in the Gulf War*, retired Lieutenant General William G. Pagonis wrote, “Running Logistics for the Gulf War has been compared to transporting the entire population of Alaska, along with their personal belongings, to the other side of the world, on short notice. It has been likened to relocating the city of Richmond [Virginia]. Efforts to relocate the 'city of Richmond' require an effective logistics process and system. MCDP-4 outlines four key points for effective logistics to overcome and accomplish challenges. First, logistics must enhance, not inhibit, operational design. Second, logistics' systems must anticipate requirements. Third, logistics' systems must be flexible, adaptable, and responsive. Finally, logistics must be effective but efficient.

In the fall of 1990, during Operation DESERT STORM, Lieutenant General Walter E. Boomer, CG IMEF directed Brigadier General Charles C. Krulak, CG 2d FSSG to establish a logistics support area to support a division-sized breach of the Iraqi barriers and minefields along the Kuwait northern border. In 14 days, 2d FSSG established Al Khanjar Logistics Base which encompassed 11,280 acres with 780 acres for ammunition storage, 5,000,000 gallons of fuel, and 1,000,000 gallons of water. 2d FSSG’s logistics support area enhanced 1st Marine Division maneuver plan by preventing the need for a logistical operational pause.
The historical need for an efficient, accurate, and timely planning system is simply supporting the end-user when and where the entity needs the support. During Operation DESERT SHIELD and subsequent DESERT STORM, the DoD logistics’ footprint with regard to personnel, equipment, and cargo was greater than ever before. The United States Marine Corps used over 300 antiquated information technology (IT) systems to track, manage, and repair the warfighting requirement for Operation DESERT SHIELD/STORM. The numerous antiquated IT systems were a problem. In response to this large logistical problem, the USMC logisticians devised a mitigation strategy to mold over hundreds of antiquated IT systems into one stand-alone web based system.

In 2003, during the initial phases of Operation IRAQI FREEDOM, I MEF received their logistics support from two Force Service Support Groups; 1st FSSG in direct support and 2d FSSG in general support. I MEF forces accomplished their mission. However, logistics support won the battle by the hard work of small units and individuals, rather than the disorganized, redundant logistics management process. As an example, BSSG-1’s entire arsenal of over one-hundred MTVRs and LVSs filled with thousands of pallets of MREs stood poised on Highway-1 ready for the push North towards Baghdad in support of 1st Marine Division. Within hours of movement, a call came down from the MEF to offload every pallet of MREs and quickly place artillery ammunition on the vehicles. Immediately throughout the brigade, reverse stop-starts could be seen dumping mountains of MREs across the arid desert in order to load the requested artillery ammunition.

On March 20, 2003, the United States began Operation IRAQI Freedom. Between April 2003 and June 2003, the Military Traffic Management Command delivered 42.2 million meals to Iraq, loaded cargo covering 15 million square feet, transported 1.5 million tons of equipment and
cargo, and moved 9,980 containers. The logistics "pull" method worked through line of sight communications that often experienced difficulty due to lack of connectivity to the supported command. With a lack of connectivity, logistics forces relied on a "push" method without waiting for a request. While logistics forces were effective in ensuring the supported command was well-supplied, they were inefficient due to the additional manpower and equipment requirements for the constant "push" method.

**Current status**

DoD logisticians supervise an tremendously large and complex supply chain in order to support military operations around the world. As shown in figure 1, the DoD spent $210B dollars in fiscal year 2010 on its logistics enterprise, which is divided into maintenance, supply and transportation.

<table>
<thead>
<tr>
<th>Magnitude of DoD Logistics Operations (FY 10)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Logistics Costs: $210B</td>
</tr>
<tr>
<td>-$112B in maintenance</td>
</tr>
<tr>
<td>-$74B in supply</td>
</tr>
<tr>
<td>-$24B in transportation</td>
</tr>
<tr>
<td>Assets: $595B</td>
</tr>
<tr>
<td>-500 ships</td>
</tr>
<tr>
<td>-15,800 aircraft</td>
</tr>
<tr>
<td>-30,000 combat vehicles</td>
</tr>
<tr>
<td>-330,000 ground vehicles</td>
</tr>
<tr>
<td>Operational Resources</td>
</tr>
<tr>
<td>-100,000 suppliers</td>
</tr>
<tr>
<td>-1,000+ legacy logistics systems</td>
</tr>
<tr>
<td>-$95.6B inventory/4.6M items (SKUs)</td>
</tr>
<tr>
<td>Operating Location</td>
</tr>
<tr>
<td>-17 maintenance depots</td>
</tr>
<tr>
<td>-25 global distribution depots</td>
</tr>
<tr>
<td>-49,000 customer sites</td>
</tr>
<tr>
<td>-Worldwide air and seaports</td>
</tr>
</tbody>
</table>

*Figure 1: Defense Logistics Cost Baseline (FY 2010)*

Subsequently, significant movement of resources to support combat operations must exploit Information Technology (IT) systems to enhance accountability. The DoD set a goal decades ago to obtain total asset visibility data system to break the antiquated stovepipe systems with each of its service components. The desired outcome is a logistics process and system that
delivers, positions, and sustains forces from any point of origin to any point of employment, including retrograde, redeployment, and return material.\textsuperscript{17} Currently, delivering that process and system involves integrating processes and synchronizing activities across numerous defense organizations; there is not yet consensus on the appropriate governance structure to achieve that vision.

Enterprise Resource Planning is defined as systems that integrate internal and external management information across an entire organization with regards to finance, accounting, manufacturing, sales, service, and customer relationship. ERP systems automate this activity with an integrated software application. The logistics based information technology systems that were produced for major private institution or companies that capitalize on best practice logistics planning to support a monetary bottom line.\textsuperscript{18} All four Service Components have chosen off-the-shelf ERP logistics systems to employ within their organization. Each of these systems is supposed to have a joint output which will feed information to an over-arching system.

The DoD has selected two main suites of software for their logistics modernization ERP efforts. The Army and the Navy have selected SAP and the Air Force and Marine Corps have selected the Oracle E-Business Suite. However, each Service has internal requirements for what the software will support. Both ERP solutions allow the incremental development of capability within the software suite. In the case of Global Combat Service Support-Marine Corps (GCSS-MC), the Oracle product was best suited to satisfy both the functional and technical capabilities. The Marine Corps initial focus is only on the supply and maintenance management functionality. By first addressing this limited functionality, the Program Office increased potential success of meeting timelines and budget. However, since the inception of the GCSS-MC program, the development effort has been prone to cost and schedule overruns.
Each Service is experiencing a high level of implementation challenges with their separate ERP efforts. All of which serve as potential indicators supporting a recommendation of developing a single ERP System to be used by all Service Components. There are many commonalities between the four Service Components ERP development efforts. All have chosen an ERP solution to modernize their logistics IT systems. All have very similar functionality being developed and implemented in multiple, reduced, scope release. All have to convert data from legacy systems. All have to train users on how to use the new ERP and corresponding business processes. All four Services have experienced many similar challenges that have caused cost over-runs and schedule delays. These overruns and delays are due to program complexity in the area of data conversion and interface development along with unexpected requirements that are required within the financial community.

Why does each service operate different logistics processes? The common answer observed is that each service conducts sustainment of its forces differently; therefore, a holistic common logistics system with known allocation for service specific capability is unsupportable. The 2004 and 2011, USMC Concepts and Programs manuals present a varied profile on how GCSS-MC was to be incorporated within the USMC. Why? USMC used an "off-the-shelf" program choice presented by Oracle. USMC modified this program to look like and function like MIMMS/SASSY/ATLAS. In addition, since Oracle owns the programming rights to the software, USMC must request through acquisitions that ORACLE conduct maintenance or rewrite contractual agreements in order to fix/update the program.

Eight years and over a billion dollars have been spent on GCSS-MC; GCCS-MC will allow the commander to see "cradle-2-grave" life cycle, maintenance readiness, and supply sourcing status.\textsuperscript{19} Is the current system worth it? Intellectual property rights cost millions of
dollars in the Applies Information Science business. Access to those rights by third parties for maintenance and upgrade is allowed - at a great cost.

Future Vision

Two examples are provided in order to better understand the benefits of a future vision for a common scalable logistics management process. In the first example, a garrison based battalion commander is tasked with establishing his battalion in a new location. After review of higher headquarters guidance, the battalion commander gathers his staff and plans the logistical requirements.

With a common scalable ERP logistics system, the adjutant works the phased arrival dates of manpower at the new location in order to ensure appropriate personnel are on hand at the appropriate time. The intelligence officer coordinates the transfer of sensitive materials from multiple sources to the new location. The logistics officer registers his transportation, billeting, equipment, and maintenance requirements. The supply officer registers the requirement for garrison furniture, support equipment, and an anticipated fiscal budget. The communications officer notes the battalion’s requirement for garrison phone and data requirements as well as fielding tactical equipment.

A common scalable ERP logistics system allows all responsible entities within the DoD to review and note the holistic requirement in a single source system. After review of the ERP, the battalion staff officers gain oversight on action taken on their requirements and can visually confirm through the Joint Logistics Tasking Process (JLTP). Higher headquarters supports the forwarding of non-organic requests to Defense Logistics Agency (DLA) or sister services. Timelines, deadlines, and fiscal tracking are centrally managed in order to ensure the battalion
commander meets higher guidance. Friction points, shortfalls, and concerns are available for appropriate action and archival purposes.

In the second example, a maintenance recovery team reacts to a convoy immediately after enemy contact. The recovery team employ a hand-held device linked to the common scalable ERP logistics system submits a rapid resupply request for ammunition, maintenance, and wrecker support. The maintenance team attach pictures of the enemy contact site with regard to general survey, wounded, disabled weapons and vehicles; he attaches them to his request. After the corporal's request flows into the ERP, the medical facility and HHQ operations center are energized.

Concurrently, the quick reaction patrol and the explosive ordnance disposal team review the general survey photos. The medical evacuation team in-route reviews the wounded person photos in order to prioritize support. The maintenance officer reviews, obtains, and distributes required personnel with wrecker support. The watch officer contacts supporting aviation in order to employ JLTP/JTO emergency air for pre-planned ammunition resupply of critical DODICs.

While these actions are taking place, JFLCC headquarters is conducting a daily review of critical usage supply stocks and priority equipment pieces annotated in the ERP; they click to reorder the DODIC and wrecked equipment. Red Horse Arsenal, Albany Supply Depot, and TRANSCOM tracking JFLCC reorder request immediately plan to ship these critical requirements; confirmation and arrival dates are populated into the ERP logistics system using JLTP. That night at his turn-over brief, the HHQ watch officer gives his commander positive confirmation on critical logistics status including the critical ammunition and wrecked replacement vehicles.

**Enterprise Resource Planning**
Major changes should occur within the services of the DoD in order to achieve a single central ERP. Every service within the DoD competes for limited resources through stove-pipe antiquated logistics systems unique to each service component. Each service has taken major strides to consolidate these antiquated systems through the DoD mandate for consolidation. However, each service is working nearly independently with OTS software for its ERP IT solution. This lack of common system allows for each service to mold its respective OTS to reflect service specific anomalies.

In contrast, there is a common functional capability desired by all four service components as they all try to achieve the same goal of modernizing their logistics IT system. All four services have already determined and chosen the ERP logistics system product as their IT solution. An ERP logistics system product is desired because it uses best industry practices. However, due to cost overruns and schedule delays, the four services must use a single centralized ERP logistics system.

Operationally, a single centralized ERP logistics system will allow DoD forces to accurately capture data within a shared environment via a secure connection using a web based method. It will allow the use of Automated Identification Technology devices, such as hand held scanners and passive/active Radio Frequency Identification scanners, for a shared information environment. Users both in garrison and austere environments will be able to communicate back to a centralized shared information environment.

Developing a single centralized ERP solution for all four service components is reliable with and supports much of the intent of the DoD Information Enterprise Strategic Plan, 2010-2012. The DoD Information Enterprise Strategic Plan was produced in order to provide information and strategic guidance. Ultimately, this Strategic Plan in response to GAO
recommendation states, "...GAO is making eight recommendations to the Secretary of Defense aimed at improving cost practices and the development of performance measures to evaluate whether ERP's intended goals are being accomplished."\textsuperscript{21}

**Joint Logistics Tasking Order**

As outlined in Joint Publication 3-56.1, *Command and Control for Joint Air Operations*, the DoD uses the Joint Air Tasking Order as a process to manage available aircraft and pilots against requirements.\textsuperscript{22} The DoD does not have a Joint Logistics Tasking Order (JLTO) counterpart. The primary method of assigning logistical missions to subordinate commands/units should be the JLTO.

![Logistics Tasking Order Development Process](image-url)
As shown in figure 2, this order is produced in a planning cycle that takes rapid requests and mission tasks, consolidates and prioritizes requirements, allocates resources and develops subordinate unit tasks, and finally provides a tasking order that leads to mission accomplishment. The JLTO is made up of all the pre-planned and immediate missions for each day and is published daily. It is important to include the supported unit in the JLTO process. This can be accomplished by having a daily JLTO conference with the supported units. The JLTO conference is not required but is recommended so that the supported unit has the opportunity to prioritize and validate missions on the JLTO.

The JLTO planning cycle is divided into three processes: emergent, current, and future, operations. As depicted in the figure 2, the JLTO cycle is a continuous process that looks...
primarily at the next 72 hours at least. However, future operations may dictate additional JLTO planning efforts. The next 72 hours of operations is divided up into 24-hour periods, each addressed by a JLTO. The current JLTO in execution is referred to as LTO A. The JLTO in the completion phase that will be executed at 0001 is LTO B. Finally, the LTO that is currently in the initial development phase but will not be executed until up to 72-hours out is LTO C. During the execution of LTO A, all pre-planned missions will proceed according to the tasking order unless and emergent requirement is required. If an emergent requirement appears, pre-planned emergency air support is placed into the Air Tasking Order.  

Figure 4: Joint Logistics Tasking Order Cycle

Figure 4: Joint Logistics Tasking Order Cycle
The LTO phasing depicted in figure 1 through 3 are related to the logistics cycle. The approach is the same, a systematic process that matches available manpower and equipment with requirements. Prior to the JFC and component commander's meeting, the senior logistics commander meets with senior logistics liaisons and his staff in order to develop recommendations on joint logistics strategy and apportionment for future operations. The term meeting is theoretical and could be tied to a review and prioritization of a single centralized ERP logistics system.

Enterprise Resource Planning and the Joint Logistics Task Cycle, employed together, would greatly assist DoD logistics management process. ERP is the single system for the logistics management process. The Joint Logistics Tasking Cycle is the unified cycle for the logistics management process.

Conclusion

With nearly thirty billion dollars invested, and hundreds of thousands of man-hours exhausted, the DoD lacks a single centrally developed, used, and managed ERP logistics system across the force. As the military enters into a financial and resource constrained environment with an ever evolving threat this logistics tasking process and ERP logistics system must coordinate action across the entirety of the organization in order to rapidly facilitate the flow of logistics between the supported and supporting.

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4 MCDP 4, p. 81.
5 MCDP 4, p. 81.
6 MCDP 4, p. 81.
7 MCDP 4, p. 81.
9 BGen Charles Krulak, p. 159.
11 Col James Caley, personal account to author.
12 Col James Caley, personal account to author.
13 Col James Caley, personal account to author.
16 This table is the FY10 Magnitude of DoD Logistics Operations which was obtained from the Defense Business Board's Global Logistics Management Report, FY 11-07, p. 2.
17 In a FY11-07 report to the Secretary of Defense, the Defense Business Board recommends optimization of the Department's global logistics management.


23 This figure is derived from the Notional Joint Tasking Cycle shown in the Joint Publication 3-56.1, "Command and Control for Joint Air Operations."

24 This figure is derived from the Notional Joint Tasking Cycle shown in the Joint Publication 3-56.1, "Command and Control for Joint Air Operations."

25 Information presented in this section with regards to the LTO process was taken from BSSG-1 Tactical Logistics Operations which was written by Col James Caley. Later, the author was his battalion operations officer where he revised the LTO process. After email correspondence with HQMC Instillation and Logistics, USMC does not use a formal process to support its logistical functions.

26 This figure is derived from BSSG-1 SOP and further developed in CLB-13 Combat SOP.
Bibliography


