USAWC STRATEGY RESEARCH PROJECT

COMMON-USER LAND TRANSPORTATION MANAGEMENT IN THE LAYERED, NON-LINEAR, NON-CONTIGUOUS BATTLEFIELD

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ABSTRACT

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Common-user land Transportation proved to be a critical commodity during Operation Iraqi Freedom's rotational transitions. Transportation managers at the Theater and Corps could not effectively employ or redeploy forces during the Winter and Fall 2004 transition due to lack of visibility and positive control of critical Theater ground transportation assets. Doctrine for managing these assets must be improved to increase transportation efficiency. Current multinational counterinsurgency warfare occurs in a layered, non-linear, non-contiguous battle space, making management of ground transportation assets even more critical than in conventional warfare. This study will recommend doctrinal and procedural changes needed for more effective theater transportation management in this new, but likely to be persistent, military environment.

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COMMON-USER LAND TRANSPORTATION MANAGEMENT IN THE LAYERED, NON-LINEAR, NON-CONTIGUOUS BATTLEFIELD

> "Transportation…Spearhead of Logistics. Nothing happens until something moves."
>
> - Transportation Corps

Common-user logistics (CUL) is a means to develop significant efficiency in a Joint environment by eliminating duplication by multiple services participating in the same operation. The intent is to provide efficient and unified support that enhances the effectiveness to deploy and redeploy our forces. Joint Publication 4-07 defines CUL as:

> "Materiel or service support shared with or provided by two or more Services, Department of Defense (DOD) agencies, or multinational partners to another Service, DOD agency, non-DOD agency, and/or multinational partner in an operation. Common-user logistics is usually restricted to a particular type of supply and/ or service and may be further restricted to specific unit(s) or types of units, specific times, missions, and/or geographic areas.[1]

One function of CUL in the joint environment is transportation. CUL related transportation includes sealift, airlift, port operation, land transportation, movement control, logistics over-the-shore, and joint reception, staging, onward movement, and integration.[2] The Commander, Army Forces (COMARFOR) is responsible for numerous logistics functions including common-user land transportation.[3] Common-user land transportation (CULT) proved to be a critical commodity during Operation Iraqi Freedom's largest rotation of forces since World War II.

The 1st Infantry Division leadership observed that transportation managers at the Theater and Corps could not efficiently or effectively employ or redeploy forces during the Winter and Spring of 2004 transition nor could they maximize transportation assets due to lack of visibility and positive control of critical Theater ground transportation assets. Doctrine for managing these assets must be improved to increase transportation management efficiency and effectiveness through better management processes and situational awareness (SA). Two areas that could be improved are the inclusion of specific contract requirements within all civilian augmentation transportation contracts and consolidate all transportation units under one functional command.

The inclusion of contract negotiations for the management and visibility of commercial transportation is critical to the future of distribution operations in the future. Because current multinational operations to fight the counterinsurgency and terrorist warfare occur in a layered, non-linear, non-contiguous battle space, making improvements in the management of ground

transportation assets is even more critical than in standard conventionally linear and contiguous warfare. This study will discuss problems experienced by the theater in the transition phase of Operation Iraqi Freedom I and Operation Iraqi Freedom II. It will recommend doctrinal and procedural changes needed for more effective theater transportation management in this new, but likely to be persistent, military environment.

Consolidating all transportation units not already organized as a part of a Unit of Action will reduce the amount of coordination that has been required in the past. Lack of coordination between Theater and Corps level movement control authorities resulted in missed opportunities to maximize onward movement of supplies, equipment and units as well as the retrograde of supplies and equipment.

Improving these two areas of doctrine within the combatant commander's area of responsibility will make for a more efficient and effective transportation process within the Joint battlefield of the future. The result will be an improvement of integrated commercial transportation assets within a single command and control (C2) Headquarters responsible for the distribution management throughout the entire theater.

BACKGROUND

In preparation for the deployment of the 1st Infantry Division, as the G4, I attended several Coalition Forces Land Component Command (CFLCC) directed transportation planning conferences and rehearsals to ensure that I understood what was expected of the 1st Infantry Division as it moved through the ports of Kuwait to northern staging bases, then conducted its approach march across the berm between Kuwait and Iraq into our sector in the north central sector of Iraq. I also wanted to understand what I could expect from the support structure that was to enable this move north. It was important to ensure that both the units being employed and the units providing the capability to employ met agreed upon expectations.

During the planned deployment and subsequent employment of all the forces through Kuwait all involved realized it would be the largest exchange of forces since WW II. This force exchange would also occur through the extremely limited port infrastructure in Kuwait. The restriction of the limited available movement assets was also recognized by all planners and senior leadership involved in this historical endeavor.

Four months of deployment and employment preparation ensued. Plans were shared, visits and briefing were provided, and rehearsals were conducted between the Division and elements of CFLCC, in particular the 377th Theater Support Command (TSC). The CFLCC and TSC staffs were very cooperative in the development and coordination of plans and sharing

execution capabilities for planning. Issues began to arise once the deployment was in full swing as the Division began to clear the seaports. The ground transportation system was not consistent nor did it meet with the expectation of the Division, based on discussions during the prior months. The Division had developed its plan for employment of forces based on the expectations of onward movement derived from the earlier reconnaissance visits and confirmed during backbriefs. Planning factors for both military vehicle capabilities and commercial transportation capabilities were understood and used to develop a plan for a deliberate flow.

The Division structure for the reception, staging, and onward movement (RSO) of Task Force Danger was constructed to ensure key leaders, including commanders, were at key nodes of the RSO process. The Division Support Command (DISCOM) supported the deployment and prepared for early employment to ensure success of enabling follow-on combat forces in the Division sector. The Division Artillery headquarters was assigned the task of controlling the flow from both the air and sea ports of debarkation. To assist the Division Artillery staff with deployment coordination and provide technical expertise, the Division G4 staff was also dispersed throughout these nodes with key elements of the DISCOM.

The RSO command and control node was located in Camp Arifjan, collocated with CFLCC logistics staff support elements. The structure of this command post provided a single location for all logistics coordination. This structure provided seamless logistical support from unit through theater and strategic support agencies for both deployment and employment operations.

All major commands, whether deploying, employing, or redeploying, provided a liaison element to CFLCC to ensure that all unit information was available across all staff elements. These elements were incorporated into this command post. Movement updates were provided to the CFLCC and TSC leadership twice daily to identify issues, track issues, and provide solutions to current and unforeseen challenges. These battle update assessments (BUA) were briefed in the CFLCC command center by all unit representatives and CFLCC and TSC staff elements. These updates targeted senior CFLCC and TSC leadership and they had the ability and authority to solve deployment, employment, and redeployment problems.

Within the CFLCC command post, the TSC was responsible for the management of Common-user land transportation. Part of the command's responsibility was to ensure sufficient Common-user land transportation assets were available to receive, stage, and onward move the units through Kuwait. The 143d Transportation Command executed the plan through the management of both military units within the transportation command and the control of the commercial vehicles made available through a civilian contract.

During the Division's reception and staging process, the Division discovered that the military and commercial transportation assets projected for use were not available as planned. Significant shortfalls of available assets were experienced; measured shortfall, were 80-90% of the projected requirements. [4]

The command post conducted daily coordination meetings to ensure that the employing unit and the transportation units executing the move identified the requirement and matched them with available assets. This was discussed in detail to ensure specific types of vehicles were available. A decision, based on known requirements, was made about whether commercial trucks or military trucks would be used. Missions were assigned based on the destination of movement and type of equipment that required movement. The type of equipment requiring movement was then divided between heavy lift and line haul. Heavy lift equipment required heavy equipment transporters (HETS) capable of moving equipment like self-propelled artillery, tanks, and large pieces of engineer equipment. Line haul assets were capable of hauling all other equipment not carried by the owning unit. Additionally, in the planning another factor had to be considered as some commercial assets were not allowed to move north of the Kuwait border because of contracting restrictions and could only be used to move from the sea port to the Staging Bases.

The daily coordination meetings identified requirements and capabilities by mission and location. Known Theater and Corps assets were reviewed based on expected movement plans and schedules. Based on these movements, assets were allocated to accommodate unit movement plans.

PROBLEM

During the employment and onward movement of the 1st Infantry Division, its staff discovered that the process followed by the transportation command, within the TSC, did not provide accurate or timely visibility of the transportation assets that were available. The transportation allocation process and direct observation confirmed that many commercial and military transportation assets, both heavy equipment transporters and line haul equipment, were moving between Iraq and Kuwait in both directions without loads and some were just sitting for days waiting for loads. The movement control battalion required units to turn in transportation movement requests (TMRs) for movements, listing by bumper number and type of equipment that was to be moved.[5] However this quickly became overcome by events as the transportation assets that arrived each day varied from the plan and it became incumbent on the unit to load them the best they could, sometimes resulting in hauling containers on HETs.[6]

During the daily transportation allocation meetings, the number of truck assets was programmed against anticipated assets that would be available. These projected truck assets always fell well short of actual available assets, routinely only 10-20% of the projected numbers. Compounding the problem, the types of trucks available were different from the projected types. As a result, the Division was forced to reallocate the actual number of trucks available and to plan for critically short HETs to move light equipment. This resulted in a disagreement of priorities and was inconsistent with the theater policy. Because the theater was critically short HET assets, these assets eventually became reserved to move only heavy or oversized equipment.

During the Division's onward movement to Tikrit, 5-8% of the Division's assigned equipment was non-mission capable. Without the capability to move this equipment with its own assigned equipment, the Division left the non-mission capable equipment behind in the staging area for onward movement at a later date. This decision was inconsistent with theater policy as the movement of non-mission capable equipment was the responsibility of the unit. The Division left a team to consolidate its equipment and coordinate its forward movement. Coordination for movement of these assets became increasingly difficult as the Marines became the priority for movement north. "The Division was left with pulling much needed transportation assets out of Iraq to move south and haul its equipment north. While this may have been consistent with the Theater policies, it was not consistent with the Combatant Commander's needs at this point in the operation."[7]

After the Division's employment to Tikrit, the staff realized that it had no visibility of transportation assets above the Division level. The Division could not get visibility of the echelon above division (EAD) transportation assets operating in or around its area of operations through any transportation agency or through maneuver commands. As time passed, it also became evident that the Theater and COSCOM transportation managers did not provide the Division the visibility it required to protect the convoys passing through the Division's sector, or to provide the needed visibility of inbound supplies and equipment.[8]

As numerous convoys came under increasing attack and it was obvious that the insurgents in the Sunni Triangle were becoming more active during March and April 2004, the COSCOM and Division commanders developed communications and reporting procedures to ensure there was improved force protection. Even though this coordination occurred, there were still gaps in the communications between Theater and Corps, particularly about the commercial convoys that were transiting the Division sector from both Turkey and Kuwait.

The 1st Infantry Division G4, LTC Keith Sledd, wrote, “Theater and MNC (Multi-national Corps) have not improved the Common-user land transportation management. We track the number of non-direct support combat logistic patrols moving thru the Division area of operations versus what the movement control battalion projected. The numbers aren't even close.” [9] These statements suggest that after over a year of continuous operations, this type of transportation management is not a result of poor managers, but of managers that are properly using their outdated doctrine as guidelines. If the movement control battalion does not control transportation in the doctrinal sense, and does not perform highway regulation, convoys will move without coordination. The result will be that these convoys will move into a unit’s area of responsibility without the unit’s ability to provide security assistance along the route or, even worse, it will arrive in the middle of a combat operation. This lack of visibility 96-72 hours pr;ior to routine missions may cause a conflict between the moving convoy and the unit with route responsibility and local combat operations.

LTC Sledd also stated,

> *“*Theater *combat logistic patrols are not coordinated from Kuwait to destination. The escort* units take them to the next CSC (convoy support center) and turn around. The next escort team picks them up, but may not have the correct number of escorts so it only takes the number of trucks it can escort and leaves the rest at the convoy support center for the next turn. They end up creating a backlog of trucks. Theater Common-user land transportation assets are not reliable. We are working early retrograde of equipment home. Of the over 50 flatbeds and over 30 heavy equipment transporters allocated to us within the last week, only seven flatbeds have arrived.”*[10]*

This communiqué confirms that the early employment problem with transportation management in Iraq continues into the redeployment of the 1st Infantry. BG Mundt wrote, “It is important to note that at this late date, the system has improved because 1st Infantry Division built and resourced Task Force Vigilant Guardian to escort from Kuwait to the loading nodes in Iraq and back. We maintain C2 of the assets throughout the trip - thereby reducing the turn around time, avoiding the gap in escort between convoy support centers, and ensuring that what we send south arrives. We also kept firm control on these assets to ensure the 42nd Infantry Division that assumed our sector, was moved north as efficiently and effectively as possible.” [11]

This inability to adjust support operations after so many months is the primary issue of why a change in transportation management doctrine is needed and why the 1st Infantry Division had to create its own C2 architecture. Transportation managers continue to serve as experts in the field and to follow current doctrine. By adjusting current transportation management doctrine, the logistics community will ensure that the development of integrated

logistics, for a Joint Theater logistics system, will improve and provide better transportation management by incorporating both military and contracted commercial Common-user land transportation assets. This would include shaping their battle space with all transportation assets to provide seamless coverage. Current doctrine is based on a linear, contiguous battlefield where one level pushes to the rear area of the next level – this basis is no longer valid. Our doctrine must require support for a seamless battle space that provides real visibility of assets, their loads and their condition from the Platoon to the Theater.[12]

TRANSPORTATION DOCTRINE

The Directorate of Combat Developments for Transportation, Combined Arms Support Command, has begun to revise transportation doctrine for the Army. Transportation publications are transitioning from the twelve field manuals (FM) 55 series to six manuals in the FM 4-01 series shown in Table 1. Efficiently combining these manuals provides fewer documents with the same required reference materials. To develop a clear understanding of current transportation doctrine, on the issue of Common-user land transportation management, a review of the appropriate current transportation doctrine follows.

Transportation Doctrine Update			
Current manual		**New Manual**	
FM 55-1	Transportation Operations	FM 4.01.011	Unit Movement Operations
FM 55-9 FM55-65	Unit Air movement Planning Strategic Deployment	FM 4.01-30	Movement Control
FM 55-10	Movement Control	FM 4.01.40	Army Motor Transportation Units and Operations
FM 55-30	Motor Transport Operations	FM 4-01.50	Transportation Intermodal Units and Operations
FM 55-20	Army Rail Operations	FM 4-01.501	Army Watercraft Safety
FM 55-21	Railway Safety	FM 4-01.15	Transportation Reference Data
FM 55-50 FM 55-60 FM 55-80	Water Transport Operations Terminal Operations Container Operations		
FM 55-502	Watercraft Safety		
FM 55-15	Transportation Reference Data		

TABLE 1. TRANSPORTATION DOCTRINE UPDATE[13]

One of the most important elements of transportation management is movement control. Though the transportation system is composed of modal, terminal, and movement control operations, movement control is the most critical of these components.[14] Without the management and control of transportation assets, there is no means to ensure that the use of each asset is maximized in its hauling capacity, in both the delivery of supplies and the return of

any potential retrograde from the forward supply points. Movement control is required to ensure each asset is utilized to its fullest extent. Movement control is the planning, routing, scheduling, controlling, coordination, and in-transit visibility of personnel, units, equipment, and supplies moving over Line(s) of Communication (LOC) and the commitment of allocated transportation assets according to command planning directives. It is a continuum that involves synchronizing and integrating logistics efforts with other programs that span the spectrum of military operations. “Movement control is a tool used to help allocate resources based on the combatant commander’s priorities, and to balance requirements against capabilities.”[15] There are fives principles that govern movement control: forward support, regulated movements, fluid and flexible movements, effective use of carrying capacity, and centralized control and decentralized execution.[16]

A movement control battalion centrally manages movement control within its area of responsibility (AO) while transportation companies and contracted commercial assets execute these missions in a decentralized manner. Movement control battalions regulate the movements in order to prevent congestion at the terminals and scheduling conflicts between customers (Services) and the transportation units.[17] These authorities execute specific functions in order to eliminate confusion and to provide all their customer units visibility of what is actually moving and their location when in route. The functions of movement control consist of planning, allocating, routing, coordinating, and in-transit visibility. [18] The planning function involves the known and anticipated requirements, while the allocating function assigns the transportation assets against the requirements determined in the planning process against the Commander’s priorities for support. It is within this process that the transportation managers centrally manage the military transportation assets in Theater.

In order to augment and reduce the stress produced by the overuse of military assets, transportation managers assist in the development of contracts, within the host nation’s commercial sector, in order to distribute the workload between commercial and military assets. Key to the process in writing and executing these contracts is to determine what the government’s requirements are if it is not a permissive environment. This too was a major source of frustration throughout the planning and executing phases.[19] The missions can be regulated by geography, by any restrictions emplaced by the civilians contracted for the work, or by the combatant commander for force protection concerns. Emerging transportation doctrine, highlighted in FM 4-01.30, recognizes that contracted and host nation support provides operational advantage because of the increase in the non-linear, noncontiguous battlefield.[20] The commercial assets can also provide transportation managers flexibility by giving the local

contractor routine transportation missions in safe havens, or more permissive environments, in order to free military assets to support forward operating bases in the non-permissive environments. In some cases, and under certain conditions, commercial assets can be contracted for missions to forward operating bases, when not restricted by military regulations. This provides a more responsive, and sometimes more clandestine, means of moving supplies and equipment.

At echelon above Corps, movement control battalions (MCBs) provide command and control to as many movement control teams as needed in their AO. Factors that determine the number of teams are the number of customers, terminals, ports, and main supply routes. The MCB is responsible for the monitoring of transportation assets and providing assets and in-transit visibility of materiel located in their area of responsibility. They are also responsible for coordinating with host nation authorities for their contracted transportation support.[21] The echelon above Corps units found in the Theater transportation command normally provide transportation support to the operational level Corps units found in the Theater transportation command.

Transportation units use four methods to move cargo: 1) direct haul, where materiel is moved in one trip by the same vehicle; 2) shuttle, where a single mission is executed in repeated steps by the same vehicle; 3) relay, where a single mission is completed in one trip by multiple vehicles without transferring load, but only by changing drivers or prime movers or both for each segment; and 4) inter-modal operations. Inter-modal operations include the combination of several transportation modes including air, road, rail, and barge assets to reduce cargo handling.[22] An example of this method is the deployment of the 1 st Infantry Division from Europe where rail, barge, and road assets were used to move the Division from five locations in Germany to the sea port of embarkation at the port of Antwerp, Belgium.

Inter-zonal transport operations are line haul movements operated over long distances to serve the entire theater as shown in Figure 1. Both full and empty assets are moved across the theater to ensure that materiel moves to its destination and that the transportation assets are returned to the C2 system for reuse. These operations are commanded and controlled by a centralized headquarters provided by the transportation command, or Corps support command, depending on the size of the area of responsibility. These headquarters may operate a portion of the route or the entire route, depending on the size of the geographical area and the availability of transportation units.[23] Inter-zonal transport operations were used in Operation Iraq Freedom I and II to move supplies and equipment from Kuwait to the northern most points in

Iraq, including Mosul and Kirkuk. Key intermediate destinations included the operating base of Scania, Anaconda, and Speicher, as well as convoy support centers.

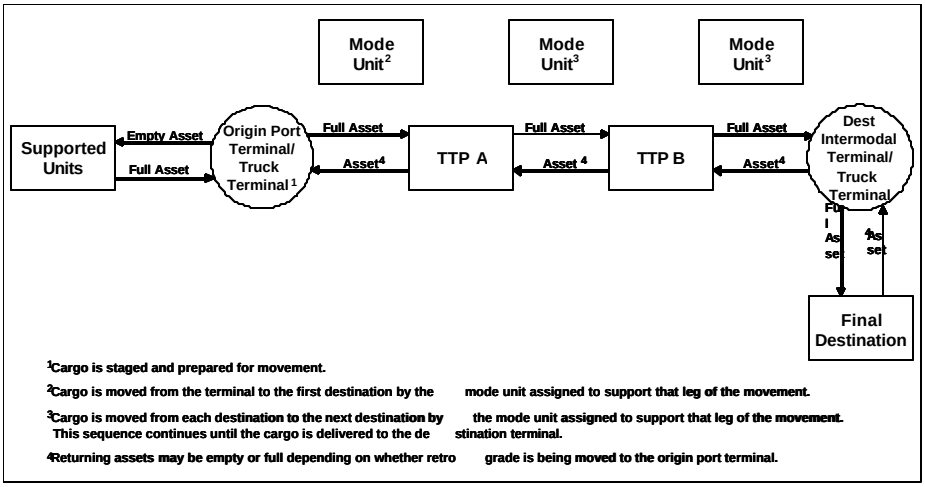

FIGURE 1. INTERZONAL MOTOR TRANSPORT OPERATIONS[24]

This type of relay system ensures that the materiel continues to move in both directions, with some transportation assets only moving supplies and equipment short distances. This saves time for the units by ensuring they can return to their origin quickly. New material is loaded near the originating terminals while retrograde materiel continues to return for removal from the theater, as needed. The retrograde is moved from operating bases throughout the sector and further consolidated at supply terminals until it was finally removed from theater. The doctrine stresses the passing of transportation movement requests from units to their movement control officer or transportation officer, then to area movement control teams (MCTs). The MCTs coordinate with the movement control battalion if the move goes out of their AO.

DISCUSSION

The use, organization, and management of the Common-user land transportation (CULT) process and the requirement for doctrinal change on how we manage transportation assets is the key issue for discussion. CULT is the means to develop efficiency in a Joint environment by eliminating duplication of ground transportation by multiple services. This requires each service to give up being parochial and join together under a common Joint Doctrine to manage and provide CULT to the combatant commander in a real-time manner. This is crucial when battlefields are layered, non-linear, and non-contiguous. Such battlefields require multiple routes

from various locations. For efficiency, all support elements must use Common-user land transportation. Users of the Common-user land transportation assets include major contractors, like Kellogg, Brown, and Root that presently have the Army's Logistics Civilian Augmentation Program contract and major Army support organizations like the Army and Air Force Exchange Service. In addition to all the military traffic that moves throughout the AOR, the theater commander must have major contractors moving to support the Theater as well. Each of these major contractors has numerous subcontractors that may also require other subcontractors to move supplies and equipment. This conundrum of transportation assets moving throughout the battle space must be visible to the movement control battalion. They must be predictable up to 96 hours in advance. Commanders must be aware of changes up to 48 hours prior to execution through the daily updates and changes within 24 hours must be approved by the ground commander through person-to-person communications. Email will not suffice as this may cause the ground commander to resynchronize his entire plan for the next day when they use the commercial contractors and move on the main and alternate supply routes.

Movement control doctrine has changed since World War II, but not enough to make the leap from the linear battlefield to the non-contiguous battle space. Changing the transportation management doctrine is critical and possibly overlooked (intentionally or subconsciously) because it is complex and extremely difficult to understand. The effort to modify existing doctrine is exacerbated by the need develop it for a battle space other than what it now is designed to support. The implementation of old and inappropriate doctrine caused significant dialog with senior leaders who were absolutely baffled at how transportation management could be so difficult and resulted in their natural desire to become personally involved in the attempt to fix it.

While actively engaged in the deployment and employment process, the Division's logistics leadership found it extremely difficult to provide the commanding general a true picture and timeline of his Division's movement. Neither military nor commercial land transportation assets were visible. The movement table changed by the hour, in some cases, as new information on transportation assets was made available. These frequent changes were caused by an inability to see beyond the most current hours of operation. It became evident that there was little effective coordination between the Theater transportation command and the COSCOM, at least not on a continual basis.

As mentioned, daily coordination meetings were held in order to determine requirements and to match those requirements with assets expected to be available for the next several days. Members that attended the meetings included representatives from Army and Marine units

preparing to employ forces into Iraq. Also participating in the coordination meetings were members of the transportation battalions that controlled the assets of the truck battalions. They were responsible for providing the number of trucks, by type, that would be available on succeeding days. These meetings allowed all units with transformation requirements to meet with those units that managed the assets to satisfy their requirements. Assets were assigned and compromises were negotiated in order to expedite the northward movement of all assets.

As the days continued to pass, the backlog of equipment requiring movement north continued to grow, compounding the backlog already established. As the backlog grew for the 1st Infantry Division, the Marines became the priority of movement to the north and west. This began to accentuate the already growing problem of employment for the Division.

Senior logisticians of the theater met daily to discuss the situation, as they understood it. This leadership included the deputy CFLCC commander, TSC commander, the transportation command commander, and assistant division commanders for support (ADC-S) for 1st Infantry, 1st Calvary, 4th Infantry Divisions and the MEU/MEF. These meetings produced the final assets' allocation decisions and after adjournment, no changes or adjustments were made for the next 24-48 hours unless the assets promised were for some reason not forthcoming. As the available assets were placed against requirements, a significant shortfall continued to arise. These meetings were held late in the day and often continued till late at night. Planning movements the night before execution does not provide the truck units enough time to react. These executive sessions were not able to solve the transportation management problem in spite of how hard they tried to effect change within a 24-hour lock in period. The TSC staff and other deploying and redeploying unit planners worked to develop the allocation plan in the allocation board to correct the system, only to have that plan re-worked by the senior officers later that night based on new information the TSC commander received directly from the supported units' senior leadership on show/no-show rates for the day. Despite the work of the daily coordination meeting and executive session, the number of transportation assets that arrived never matched the projected assets submitted by the transportation command for planning, thereby resulting in a sub-optimal transportation plan and poor execution.

There is no doctrine written specifically for the use and management of commercial transportation assets. Since there is no written doctrine, transportation managers must rely on their own experience and understanding of current transportation management doctrine on how to incorporate commercial transportation assets into standard military transportation operations. All truck assets, whether commercial or military, must be managed in a similar way under the same command and control architecture.[25]

As the host nation transportation infrastructure is developed, the contracting for commercial assets must be designed with standard transportation doctrine in mind. Management of these commercial assets must be accomplished as if these assets were military units, though they may not have the same attributes or capabilities. Though constructing the contract and managing these commercial assets as military units may be extremely difficult, particularly during a conflict, there must be clearly defined parameters that the contractor must be expected to follow or face legal ramifications. As stated above, "the movement control battalion is responsible for the … in-transit visibility of personnel, units, equipment, and supplies moving over line(s) of communication …."[26] Just as it must maintain this visibility with military units, it must also have this visibility of commercial assets. Without clear doctrinal guidance, those responsible for the contract development cannot ensure the proper wording exists within the contract for proper transportation management.

Transportation management must be seamless between the echelon above Corps movement control battalions and the COSCOM movement control battalions. Planning, routing, scheduling, controlling, coordination, and in-transit visibility of personnel, units, equipment, and supplies moving over the LOCs and the commitment of allocated transportation assets according to command planning directives between echelon above Corps and COSCOM movement control battalions must be managed from the same database or visibility of these assets will disappear. In one case, a transportation platoon of critical HETs was in Camp Arifjan over 48 hours before any managers discovered their location. It was not until the HET platoon was beginning its return trip to the COSCOM area of responsibility that they were identified at the Kuwait-Iraq border, halted, and turned around for loading. It is this confusion in managing assets that creates the inefficiencies within the layered command structure.

Movement control doctrine has either not kept up with technology or units do not make proper use of the tools that are available to them. This disconnect places a strain on the system by trying to make new technology fit into an old system, or by not providing guidance on the use of the technology. Poor communication guidance and use of the tools without proper direction hinder the ability of the movement control nodes. The doctrine stresses the transmission of transportation movement requests from customer units to the movement control battalion for sourcing.

During the planning and coordination process, the transportation command promised to provide a particular number of trucks per day based on their projected available assets. When the 1st Infantry Division arrived in Theater, the MCB required it to turn in Transportation movement requests for movements by bumper number and type of equipment to be moved.

Though this level of detailed data is important for movement, its completion should be secondary to the allocation of the transportation assets.[27] The Division Transportation Officer was required to submit several dozen transportation movement requests, but these requests were only partially filled. New requests needed to be submitted for the equipment that could not be loaded each day. The requesting unit never knew for sure when or if vehicles would show up, which meant that the individual filling out the movement request did not know exactly what would be loaded on the trucks; he could not list the equipment on the new transportation movement request since he had no idea until the end of the day what would really be loaded. This was a major point of friction. The number of transportation assets must be agreed upon in advance and then be delivered each day. This will ensure the accuracy of the movement requests. The other course of action is to send available transportation assets, allow the unit to load them, and afterwards submit the accurate movement request.[28]

CONCLUSION

Movement control throughout a Theater of operations is a critical logistics function that will determine the success of the Theater transportation management plan. Mismanagement of transportation assets can create critical shortages and a great deal of friction between the supported and supporting unit, thereby invoking senior leaders to spend an inordinate time trying to help manage the process. Coordination between multiple movement control authorities is essential for success. Consolidation under one command will simplify management, improve distribution visibility, and ultimately ensure success on the battlefield.

The transportation movement request system used in Operation Iraqi Freedom during the early months of 2004 did not support effective employment and redeployment of units, especially units of brigade size or larger. These movements should be controlled by emphasizing the priority of assets available and not the type of equipment moving. The employing and redeploying unit should be able to load available truck assets with whatever equipment matches their movement priority. If procedures continue to require specification of equipment type for requests prior to allocation, the results will be recurring cycles of unfilled and re-filled transportation movement requests. Subsequent movement planning and allocation will be ineffective and no one will know exactly what needs to be moved. The MCB tried to force the use of a system that did not match the scope of the mission and consequently hindered mission accomplishment rather than serving as an enabling or synchronizing headquarters.

Transportation control doctrine was developed for a linear battlefield and peacetime operations. Until recently, most logistic planners made the assumption that the Theater and

COSCOM transportation units operate within a secure AO and that echelon above Corps transportation would not be constrained. Forward divisional transportation units would secure movements in the “combat zone” where movement was most dangerous. Doctrine also assumed that if there were not enough transportation assets deployed that the answer was always to contract for more host nation support to offset the shortfall. Movement plans were built on the premise that host nation support was the answer. Movement control doctrine writers and planners never asked the question, “What if no one will drive there because of the security situation?” Transportation contractors refused to allow drivers into northern Iraq because of security reasons. As a result, synchronizing movements of commercial equipment with military equipment became a problem. There was no contractual ability to force the delivery to the right place at the right time and then return with retrograde items to the right place at the right time. MCBs must be allowed to expand to meet the required coverage through contracts with LOGCAP or by employing the Movement Control Specialists assigned to subordinate level commands to maintain a seamless C2 structure over the entire transportation structure.

RECOMMENDATION(S)

Transportation management is a difficult mission, particularly in combat support operations. Conducting movement control operations for purely military units must not only cross geographical and territorial boundaries, but must also cross strategic, operational, and tactical lines of communication. Movement control units must communicate with organizations having different communications capabilities. Some units have more modern equipment while others have legacy systems and the two cannot communicate with each other. Developing standard operating procedures between Divisional and Corps units will eliminate coordination difficulties that movement control authorities must contend with at every level.

Transportation management doctrine must change to incorporate commercial assets in significantly more detail. Acknowledging the value of host nation support and commercial contracting in the new doctrine is not enough. The new doctrine must provide guidance and direction to the emerging movement control managers of the future and provide key elements of contractual requirements that the contractor must fulfill. The means to control contracts, and thus the contractor, is critical to ensure that the transportation assets so crucial in supporting the war fighter are available and will perform missions as directed. If too much flexibility or too many loopholes are provided in the contract, then the contractor can impose his own limitations or be selective in the support provided. As a result, the contractor will not provide either the desired

support, which was the purpose of the contract, or the support provided to the customer will be inadequate and there will be no recourse with the contractor.

Transportation doctrine must also change to have a single transportation manager at either a UEx or UEy command level for the combatant commander. All the movement control battalions must report directly to this single transportation manager in order to provide the movement control authorities direct confirmation of all assets on hand, their location, and their mission. The noncontiguous, nonlinear battlefield makes it too complex for two movement control commands to manage separate assets that are already in short supply. A single movement control headquarters will simplify the command and control of all transportation assets in the combatant commander's area of operations and reduce the amount of coordination between two movement control commands. The functional Transportation command within the area of responsibility must be able to manage all movement coordination in order to ensure complete visibility of the transportation assets in support of the combatant commander. The two levels of transportation, echelon above Corps and Corps support command, must be consolidated at the highest level of command, either UEx or UEy, based on the structure of the Theater. We must identify their area of responsibility and the C2 they really exercise in the ground commander's battle space.

Trucks should be assigned support missions in accordance with theater movement priorities, much like the coalition force's air component command assigns close air support in an air tasking order. When moving large units, the assets must be allocated in accordance with priorities through a tasking order and let the moving unit provide the detailed load data through direct coordination with the mode operator.

As operations become more Joint in nature, the Army must reduce the overhead of transportation management. Transportation managers must incorporate civilian contracts and reduce the transportation footprint across the battlefield. This reduction in footprint will reduce the management levels and the amount of coordination required to maintain visibility of the transportation missions and planning for the future.

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ENDNOTES

[1] Joint Chiefs of Staff, *Joint Doctrine for Common User Logistics During Joint Operations,* Joint Publication 4-07 (Washington, D.C.: U.S. Joint Chiefs of Staff, 11 June 2001), GL-5.

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[3] Joint Chiefs of Staff, *Joint Tactics, Techniques and Procedures for Joint Theater Distribution*, Joint Publication 4-01.4 (Washington, D.C.: U.S. Joint Chiefs of Staff, 22 August 2000), II-8.

[4] Sean Herron, <sean.herron@us.army.mil>, "SRP Data Review," electronic mail message to Lawrence Strobel <lawrence.strobel@us.army.mil>, 20 December 2004.

[5] Ibid.

[6] Stephen Mundt, <Stephen.mundt@us.army.mil>, "Research Paper Review," electronic email message to Lawrence Strobel <Lawrence.strobel@us.army.mil>, 20 February 2005.

[7] Ibid.

[8] Sean Herron.

[9] Keith Sledd, <keith.sledd@us.army.mil>, "NSN for HEMTT/PLS Roof Rack Kit," electronic mail message to Lawrence Strobel <Lawrence.strobel@us.army.mil>, 15 November 2004.

[10] Ibid.

[11] Stephen Mundt.

[12] Ibid.

[13] Directorate of Combat Developments (DCD) for Transportation, "Transportation Doctrine," 24 November 2004; available from <http://www.cascom.lee.army.mil/transportation/Doctrine.htm>; Internet accessed 24 November 2004.

[14] Department of the Army, *Movement Control*, Field Manual 4-01.30, (Washington, D.C.: U.S. Department of the Army, 1 September 2003), 1-1.

[15] Ibid.

[16] Ibid., 1-2.

[17] Ibid.

[18] Ibid., 1-4.

[19] Stephen Mundt.

[20] Ibid., 1-9.

[21] Ibid., 4-10, 4-11.

[22] Department of the Army, *Army Motor Transportation Units and Operations, Coordinating Draft,* FM 4-01.40, (Washington, D.C.: U.S. Department of the Army, 10 January 2003), 4-4.

[23] Ibid., 4-9.

[24] Ibid, 4-10.

[25] Kevin Cale, <cale@us.army.mil>, "USAWC SRP Abstract," electronic email message to Lawrence Strobel <lawrence.strobel@us.army.mil>, 20 January 2005.

[26] Department of the Army, *Movement Control*, 1-1.

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