

ARMY WATERCRAFT AND TERMINAL OPERATIONS FUNCTIONAL ALIGNMENT: REVISITING LOGISTICS MODULARITY

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**ARMY WATERCRAFT AND TERMINAL OPERATIONS FUNCTIONAL ALIGNMENT:
REVISITING LOGISTICS MODULARITY**

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ABSTRACT

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Expeditionary watercraft and marine terminal operating capability resides within the Table of Organization and Equipment (TOE) force structure of the U.S. Army's Transportation Corps. This capability includes multiple types of units organized and equipped within both the Active Army and the Reserve Component, with organic command and control (C2) up to the battalion level. As key early entry enablers supporting contingency theater port opening and Joint Reception, Staging, Onward Movement and Integration, these low density units are truly strategic in nature. Prior to the implementation of logistics modularity, the Army executed direct C2 of this force structure through functional transportation group headquarters. Post modularity, the functional group headquarters no longer exist, and alignment above battalion-level is to multifunctional sustainment brigades or higher. This project examines the impacts of the C2 shift post-modularity and, after further analysis, it proposes a functional realignment of watercraft and marine terminal operating units under the Surface Deployment and Distribution Command (SDDC) to improve operational effectiveness and support continued viability of the capability.

ARMY WATERCRAFT AND TERMINAL OPERATIONS FUNCTIONAL ALIGNMENT: REVISITING LOGISTICS MODULARITY

The existence within the United States Army of watercraft and marine terminal operating forces is not widely known outside of the Army's logistics community. In fact, even within that community, knowledge of the inherent capabilities these units provide and their employment considerations are not widespread. Watercraft and marine terminal operating units are low density force structure, comprising approximately 6,600 authorized manpower spaces combined, or just under 13%, of the approximately 52,600 spaces allotted to the Army's Transportation Corps for Fiscal Year 2010 (FY 10).¹ A true niche capability, the force structure's utility in enabling Army and Joint Force expeditionary warfare, coupled with its low density in both the current structure and in that of the foreseeable future, impart strategic relevance to it.

With the implementation of logistics transformation earlier this decade, watercraft and marine terminal operating units doctrinally aligned with modular logistics headquarters above the battalion-level in order to better meet geographical combatant commanders' (GCC) operational requirements.² This evolution in logistics command and control (C2) allowed more expedient formation of logistics task forces for contingency operations, utilizing modular logistics force structure while removing many of the functional logistics C2 "stovepipes" that required an increased theater logistics footprint in the past. As part of this transformation, transportation C2 elements above battalion-level were discontinued, and watercraft and marine terminal operating units were aligned above battalion-level with multifunctional theater sustainment commands (TSC) and sustainment brigades.

A number of consequences arising from the transition to multifunctional C2 alignment of watercraft and marine terminal operating capabilities deserve further review. After further analysis of the background, force structure, C2 evolution, and impacts involved in the transition, this paper proposes that the uniqueness and complexity of these capabilities require the re-establishment of a functional C2 alignment above the battalion-level to insure continued Army watercraft and marine terminal operations effectiveness and viability.

Background

The U.S. Army has a history of operating watercraft and marine terminals in support of deployment and sustainment operations during conflict. This history includes actions in the Spanish American War, both World Wars, Korea and Vietnam, the first Gulf War, as well as contingencies in Somalia and Haiti. Modern watercraft and marine terminal operating units continue to perform critical missions in support of Operation Iraqi Freedom (OIF) and other requirements worldwide, to include humanitarian efforts in Haiti in the aftermath of that country's 2010 earthquake.

Today, Army watercraft and marine terminal operating units support maneuver and sustainment requirements as codified in joint and Army doctrine. Under this doctrine, these units play a significant role in enabling expeditionary warfare and campaign operations through the execution of theater and port opening, Reception, Staging, and Onward Movement (RSO), maneuver support, distributed sustainment, austere port operations, and logistics-over-the-shore (LOTS).³

Army watercraft organizations are found within the Army's Table of Organization and Equipment (TOE) force structure. Watercraft units are in both the Active Component (AC) and the United States Army Reserve (USAR). They are stationed

within the continental United States (CONUS) as well as forward deployed and prepositioned outside of CONUS (OCONUS).

Army marine terminal operating capability is found within both TOE and Tables of Distribution and Allowance (TDA) organizations. The TOE force structure provides full-spectrum marine terminal operations with AC, Army National Guard (ARNG), and USAR units stationed mainly within CONUS and prepositioned equipment sets OCONUS. Within TDA force structure, the Surface Deployment and Distribution Command (SDDC) employs terminal operations groups and battalions stationed both CONUS and forward deployed OCONUS. These units function as both seaport management and operations elements, relying primarily on commercial contract stevedore, material handling, and ground transport to conduct terminal operations and clearance at theater seaports. Given their heavy dependence on commercial contracts for terminal operations, limited personnel, and organization under lightly-equipped TDAs, SDDC's terminal units typically operate in established commercial seaport facilities in more permissive versus austere operating environments.⁴ This project's analysis and discussion of full-spectrum marine terminal operations capabilities focuses on TOE force structure.

Watercraft and marine terminal operating capabilities compete within the Transportation Corps, the logistics community, and the Army as a whole for TOE force structure allocations based upon identified requirements. Since the end of the Cold War, the Army has transformed, force structure allocations have declined overall, and watercraft and marine terminal operating capabilities have also decreased over time. Recent reductions to these capabilities came about through iterations of Total Army Analysis (TAA), the process in which the Army reviews unit requirements, makes

resourcing decisions, and updates its force structure of record over a multi-year interval.⁵ A total of 16 AC watercraft and marine terminal operating units were eliminated in resourcing decisions made during the last two TAAs, including the inactivations of standing units and cancelled activations of units previously programmed to activate. Force structure reductions in TAA 12-17, the most recent TAA, were based in part on current rotational requirements supporting OIF and Operation Enduring Freedom (OEF).⁶ Watercraft and marine terminal operating force structure have consistently had lower rotational requirements for OIF and OEF due to the largely land-oriented nature of these conflicts, and were thus vulnerable during the force structure resourcing process. The current force structure is resourced to the minimum essential level to support a major contingency operation.

Considering the overall reductions in force structure, aging equipment and watercraft platforms, and doctrine in need of revision, the U.S. Army Combined Arms Support Command (CASCOM) recently began a thorough review of watercraft and terminal operating capabilities via the Capabilities Based Assessment (CBA) process. As part of the CBA, CASCOM conducted a Functional Needs Analysis (FNA) to assess the current force structure's ability to accomplish identified Army watercraft and terminal operations tasks.⁷ Gaps identified by the FNA included loss of functional transportation watercraft and marine terminal operating C2 expertise and mentorship with the shift in alignment of these capabilities due to logistics modularity. CASCOM continues to conduct the next step in the CBA process, a Functional Solutions Analysis (FSA), to provide recommended solutions within the areas of doctrine, organization, training, materiel, leadership and education, personnel, and facilities (DOTMLPF) for all of the

gaps identified, with an estimated completion date of 4th Quarter, FY 10. The FSA's recommendations will ultimately address the full range of gaps concerning watercraft and marine terminal operating capabilities, and help to further define any C2 modifications required to support the long-term effectiveness and viability of this key enabling force structure.

Defining the Force

There are fifteen different unit types, organized under separate TOEs, which form the Army's watercraft and marine terminal operating force structure. One can gain a better appreciation of the extent of these capabilities through a review of the basic doctrine and specific unit organizations associated with it.

Army watercraft provide "the means to rapidly move forces, support and sustainment to the right place, at the right time, and in the right quantities."⁸ Watercraft possess several core competencies enhancing their ability to support land maneuver requirements. They conduct intra-theater movement of combat power and sustainment and reduce the operational footprint ashore by moving cargo from ship to shore as part of a LOTS operation.⁹ In non-permissive environments, watercraft provide the ability to circumvent enemy anti-access strategies and deliver combat power across bare-beaches or through unimproved harbors when known seaport facilities are blocked or damaged.¹⁰ Finally, watercraft can function as secure operating platforms for various special operations activities.¹¹

Watercraft force structure is organized and positioned to facilitate a more rapid response to geographic contingency requirements. The majority of manned watercraft force structure is CONUS-based and supports U.S. Southern Command (SOUTHCOM) and U.S. Northern Command (NORTHCOM) requirements while reinforcing worldwide

contingencies as required.¹² Additionally, these units support CONUS-based unit training and institutional training as the institutional training base has no watercraft allocation.¹³

OCONUS-based watercraft force structure is divided between a small number of forward stationed units assigned to U.S. Central Command (CENTCOM) and U.S. Pacific Command (PACOM), including a USAR unit in Hawaii, and one pre-positioned watercraft equipment package located in each of these areas of responsibility supporting theater contingency plans. Forward stationing and pre-positioning of Army watercraft in theater “significantly reduces the response time to support combatant commanders...and represents a tremendous improvement in increased payload capability available to the combatant command.”¹⁴

Eight different TOE unit types provide the range of cargo carrying vessels, support craft, and maintenance capability required to conduct watercraft operations. All watercraft units are normally assigned to a sustainment brigade and further attached to TOE transportation terminal battalion headquarters unless otherwise noted. Additionally, Table 1 provides the number of units resourced between FY10 and FY17 by type and by component (i.e. AC, USAR, and Pre-Positioned).

Harbormaster Detachment (TOE 55587FA00). The detachment provides operational control for Army vessel and harbormaster operations within a marine terminal area, fixed port, or LOTS site.¹⁵ It is authorized 21 soldiers.

Joint High Speed Vessel (JHSV) Detachment (TOE 55888F000). When five Army JHSVs are fielded between FY11 and FY16, they will perform high speed transport of personnel, equipment and cargo, including fully operational combat teams,

during intra-theater lift, waterborne tactical and joint amphibious, coastal/inter-coastal and littoral operations.¹⁶ Each detachment, authorized a single JHSV and 31 soldiers, will normally be assigned to a TSC and further attached to a transportation terminal battalion.

Logistics Support Vessel (LSV) Detachment (TOE 55530LJ00). The LSV transports vehicles, containers, and general cargo to remote, underdeveloped areas along coastlines and along inland waterways, supporting unit deployment, relocation and coastal supply route operations.¹⁷ Each detachment is authorized one LSV and 31 soldiers.

Heavy Watercraft Company (TOE 55829L000). The company transports personnel, equipment and cargo during intra-theater lift, water terminal, waterborne tactical, and joint amphibious, riverine or LOTS operations.¹⁸ The unit is authorized up to ten Landing Craft Utility-2000 (LCU-2000) vessels and 157 soldiers, depending upon component.

Medium Boat Detachment (TOE 55588FA00). The detachment transports personnel, equipment and cargo during water terminal, waterborne tactical and joint amphibious, riverine or LOTS operations.¹⁹ Each detachment is authorized nine Landing Craft Mechanized 8 (LCM 8) vessels and 72 soldiers.

Floating Craft Company (TOE 55889F000). The company conducts harbor craft tasks, including heavy-lift and salvage, during intra-theater lift, water terminal, waterborne tactical and joint amphibious, riverine or LOTS operations.²⁰ Each company is authorized one large tugboat, two small tugboats, one 115 ton capacity barge derrick crane, one liquid cargo barge, and 85 soldiers.

Modular Causeway Company (TOE 55848F000). The company provides movement support for cargo and equipment from ship-to-ship or ship-to-shore during intra-theater lift, water terminal, waterborne tactical and joint amphibious, riverine and LOTS operations.²¹ The company is authorized 180 soldiers and is organized with two Roll-On/Roll-Off Discharge Facilities (RRDF), one powered causeway ferry and one floating causeway.

Watercraft Maintenance Company (TOE 55613L000). The company, authorized 181 soldiers, provides field maintenance support for Army watercraft, repairing all organic watercraft equipment excluding communications security items.²²

	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	PREPO
HARBORMSTR DET	4/4//8	4/4//8	3/4//7	3/4//7	3/4//7	3/4//7	3/4//7	3/4//7	0
JHSV DET	2/0//2	2/0//2	2/0//2	3/0//3	4/0//4	5/0//5	5/0//5	5/0//5	0
LSV DET	5/3//8	5/3//8	5/3//8	5/3//8	5/3//8	5/3//8	5/3//8	5/3//8	0
HVY WTRCRFT CO	1/2//3	1/2//3	1/2//3	1/2//3	1/2//3	1/2//3	1/2//3	1/2//3	2
MED BOAT DET	1/1//2	1/1//2	1/1//2	1/1//2	1/1//2	1/1//2	1/1//2	1/1//2	2
FLOAT CRFT CO	1/3//4	1/3//4	1/3//4	1/3//4	1/3//4	1/3//4	1/3//4	1/3//4	2
MOD CAUSEWAY CO	1/0//1	1/0//1	1/0//1	1/0//1	1/0//1	1/0//1	1/0//1	1/0//1	2
WTRCRFT MAINT CO	1/1//2	1/1//2	1/1//2	1/1//2	1/1//2	1/1//2	1/1//2	1/1//2	2

Table 1: Watercraft Force Structure Unit Strength (AC/USAR//Total & PREPO) by Fiscal Year

Marine terminals provide the interface between strategic surface transportation and a theater of operations, as well as a transfer point between land and water lines of communication used for theater sustainment. Historically surface transportation, specifically strategic sealift, moves the majority of U.S. military unit equipment and sustainment cargo from CONUS or forward bases to a theater in support of contingency requirements.²³ In a preponderance of contingency scenarios, GCCs depend upon the efficient and effective operation of marine terminals at seaports of debarkation (SPODs) to transfer unit equipment and sustainment cargo from ocean-going vessels to follow-on

modes of transportation that facilitate the integration of combat forces deploying into theater.

Based upon the validated Time Phased Force Deployment Data (TPFDD) requirements for a theater contingency plan, Army TOE marine terminal operating units deploy to designated SPODs and assume port operator roles and responsibilities. Normally task-organized under a transportation terminal battalion headquarters, these units perform a number of functions including terminal operations, cargo discharge, beach and port clearance, cargo documentation and intransit visibility (ITV) in support of RSO and theater sustainment.²⁴ As the evolving operational situation dictates, terminal operating units may deploy from fixed-port facilities to conduct operations at unimproved ports and/or bare-beach LOTS sites.

As a theater matures and the security environment permits, the GCC transitions SPODs from military to commercial terminal operations managed and executed by SDDC TDA elements. This transition frees TOE marine terminal capability to react to other requirements as they arise, either within or outside of the theater, an important aspect given the low density of this force structure.

Similar to the watercraft units discussed earlier, marine terminal units are assigned to the AC and Reserve Component (RC). Although manned TOE force structure is stationed mainly within CONUS, there is also a significant amount of terminal operations capability located within CENTCOM and PACOM prepositioned equipment sets.

Seven different TOE unit types provide C2 organization, material handling equipment and trained personnel to conduct marine terminal operations. All units are normally assigned to a TSC and further attached to a terminal battalion headquarters unless otherwise noted. Additionally, Table 2 provides the number of units resourced between FY10 and FY17 by type and by component (AC, ARNG, USAR, and Pre-positioned).

Terminal Battalion Headquarters (TOE 55816F000). The battalion headquarters is the basic C2 headquarters for theater marine terminal operations and is organized with up to seven transportation companies conducting fixed-port, unimproved port or bare-beach LOTS operations.²⁵ It is authorized 66 soldiers and normally assigned to a TSC and further attached to a sustainment brigade.

Theater Opening Element (TOE 55542GA00). The element augments the TSC, Expeditionary Sustainment Command (ESC), or sustainment brigade headquarters assigned a theater opening mission with the additional transportation expertise in movement control, transportation mode operations, and terminal operations to support planning, oversight and execution of related theater opening processes.²⁶ It is authorized 54 soldiers and normally assigned to a TSC and further attached to a sustainment brigade with a theater opening mission.

Automated Cargo Documentation Team (TOE 55560LD00). The team provides automated marine terminal cargo documentation services for breakbulk, container and roll-on/roll-off cargo discharged or loaded in fixed-port, unimproved port or bare-beach LOTS operations.²⁷ It is authorized 24 soldiers.

Seaport Operations Company (TOE 55838F000). The company performs marine terminal service operations to discharge and load containerized and non-containerized cargo and vehicles in fixed-ports, unimproved ports, and LOTS sites.²⁸ The unit's major organic equipment includes rough terrain container handlers, variable reach forklifts, yard tractors, heavy cargo trucks and trailers, and a bulldozer for beach preparation at LOTS sites. It is authorized 207 soldiers.

Terminal Supervision Team (TOE 55560FC00). The team provides cargo and personnel movement documentation and ITV services as well as contract supervision in support of contracted marine terminal operations.²⁹ It is authorized 21 soldiers and is normally augmented with a Port Management Team (see below) to provide complete documentation and contract supervision support at a SPOD.

Port Management Team (TOE 55560FG00). The team manages marine terminal operations performed by commercially contracted or other host nation labor forces.³⁰ It is authorized 24 soldiers and normally augments the Terminal Supervision Team to support full service marine terminal contract supervision and cargo documentation.

Rapid Port Opening Element (TOE 55507GA00). The element, authorized 55 soldiers, receives and clears unit equipment, personnel, and sustainment supplies from arriving military or commercial aircraft and ships at Aerial Ports of Debarkation (APODs) and/or SPODs as part of the U.S. Transportation Command (USTRANSCOM) orchestrated Joint Task Force – Port Opening (JTF-PO).³¹ It remains under USTRANSCOM's operational control when deployed as part of JTF-PO unless otherwise directed.

	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	PREPO
TERM BN HQ	3/0/6//9	2/0/6//8	2/0/6//8	2/0/6//8	2/0/6//8	2/0/6//8	2/0/6//8	2/0/6//8	2
THEATER OPNING ELE	1/1/5//7	1/1/5//7	1/1/5//7	1/1/5//7	1/1/5//7	1/1/5//7	1/1/5//7	1/1/5//7	2
AUTO CGO DOC TM	4/0/8//12	2/0/9//11	2/0/10//12	2/0/10//12	2/0/10//12	2/0/10//12	2/0/10//12	2/0/10//12	2
SEAPORT OPS CO	6/0/6//12	3/0/6//9	2/0/7//9	2/0/7//9	2/0/7//9	2/0/7//9	2/0/7//9	2/0/7//9	7
TERM SUPERVISION TM	2/0/17//19	1/0/18//19	1/0/18//19	1/0/18//19	1/0/18//19	1/0/18//19	1/0/18//19	1/0/18//19	0
PORT MGT TM	2/0/18//20	1/0/18//19	0/0/18//18	0/0/18//18	0/0/18//18	0/0/18//18	0/0/18//18	0/0/18//18	3
RAPID PORT OPN ELE	3/0/0//3	3/0/0//3	3/0/0//3	3/0/0//3	3/0/0//3	3/0/0//3	3/0/0//3	3/0/0//3	0

Table 2: Marine Terminal Operating Force Structure Unit Strength (AC/ARNG/USAR//Total & PREPO) by Fiscal Year

Doctrinally, the terminal battalion headquarters commands and controls a variety of units, including watercraft, marine terminal, and other supporting logistics units in order to conduct theater opening and sustainment operations. The battalion, along with the theater opening element, provides the functional expertise in watercraft and marine terminal operations below the TSC headquarters level within the region.

C2 Evolution

The Army transitioned to the modular force in response to the need for a more expeditionary, flexible, joint-operations capable fighting force. To effectively support and compliment this new modular force, the Modular Force Logistics Concept was developed “to provide commensurate increased operational flexibility and unity of command.”³² Logistics modularity streamlined the traditional systems for logistics C2, theater opening, and theater distribution within a theater. A key aspect of the modular logistics design is a flattened C2 structure, achieved through the reduction of functional logistics command elements above battalion-level that eliminated redundancy and allowed increased visibility of the distribution system to include its contents and associated infrastructure (i.e. lines of communication, port and terminal facilities, storage sites, etc.).³³ Clearer visibility of the distribution system and more direct C2 lines enable commanders to rapidly channel logistics support to the point of need,

providing increased flexibility and responsiveness throughout the operational environment. Transportation functional C2 organizations removed from the Army's TOE force structure included the Theater Transportation Command (TRANSCOM) and the Transportation Group (Composite).

Prior to modularity, Army watercraft and marine terminal operating units were functionally aligned with a TRANSCOM and composite transportation groups in a theater, depending upon the size of the contingency, number of SPODs required, water lines of communication established, etc. The TRANSCOM, assigned to a Theater Support Command, functioned as the principal Army transportation headquarters in theater, and thus was responsible for organizing and operating the theater transportation system, to include watercraft and terminal operations in support of theater warfighting requirements.³⁴ The composite transportation group was responsible for all watercraft and terminal operations conducted within a specified area, while also having the capability to C2 motor transport activities.³⁵ As such, the composite transportation group provided C2 for the terminal battalion headquarters and any additional transportation force structure required for theater opening and sustainment activities.

Both the TRANSCOM and composite transportation group headquarters provided senior transportation functional planning and execution expertise as well as advocacy within the Army and joint community for the maintenance and further development of watercraft and marine terminal operating capabilities. In particular, the presence of these functional higher-echelon headquarters greatly facilitated operational planning for and execution of theater joint logistics-over-the-shore (JLOTS) requirements. JLOTS operations enable theater logisticians to increase the throughput

of equipment and supplies into theater or to overcome destroyed or damaged port facilities by discharging ocean-going vessels off-shore, shuttling cargo to beach sites along the coastline and then discharging the cargo across the shore for further onward movement and integration with deploying forces. This operation, by its very nature, is complex, demanding, and dangerous, especially when conducted in rough seas.

Planning for its conduct requires an understanding of everything from ocean currents and beach gradients to heavy-lift operations and engineer beach preparation.

Functional transportation C2 headquarters consistently trained on JLOTS and regularly participated in Joint Chiefs of Staff-sponsored JLOTS exercises, generating continued knowledge and understanding organizationally as well as within joint and theater staffs.

Post-modularity, watercraft and marine terminal operating units remain aligned day-to-day with their respective Army Service Component Commands (ASCC) (i.e. Forces Command, Army Central, Army Pacific, Army Reserve Command, etc.) based upon unit stationing and further assigned to multifunctional sustainment headquarters within the area or region. When deployed, they are assigned to a TSC or sustainment brigade, depending upon the size of the operation, with theater opening and/or theater distribution responsibilities. While watercraft and marine terminal operations are critical components of theater opening, the process involves other specialties to include communications, civil-military operations, human resources, force health protection, and a host of others.³⁶ Monitoring this wide variety of components requires the multifunctional oversight capability provided by the sustainment brigade, which typically manages theater opening from the outset as one of the initial units deployed to a theater.

The sustainment brigade is task-organized with one or more terminal battalion headquarters and subordinate watercraft and marine terminal operating units in order to operate theater SPODs, conduct watercraft mode operations, and support theater JLOTS requirements. To effectively execute theater opening, the sustainment brigade relies on augmentation from a transportation theater opening element to provide transportation expertise supporting establishment of the initial distribution network, the conduct of minimal essential early-entry operations, and the C2 of employed watercraft and terminal operating units.³⁷ The theater opening element is a senior augmentation plug, commanded by a lieutenant colonel, developed and integrated into force structure to bridge the gap in functional transportation expertise between the functional C2 organizations of pre-modularity and the multi-functional logistics C2 organizations of post-modularity. Doctrinally, when expansion of the theater is completed, the theater opening element realigns from the sustainment brigade to augment the TSC in managing the overall theater movement program and transportation mission.³⁸

Impacts to Watercraft and Marine Terminal Operating Force Structure

Logistics transformation and the removal of functional transportation C2 above battalion level have impacted the Army's watercraft and marine terminal operating force structure in a variety of ways. Without a functional alignment, these capabilities lack unity of effort in planning for, maintaining, and globally employing existing as well as future force structure. TOE watercraft and marine terminal operating forces lack true operational senior-level oversight that understands their complex mission, unique enabling characteristics and specific employment considerations well enough to effectively advocate for the resourcing of force structure and funding of equipment requirements within the Department of the Army. Senior Army logistics leaders have

recently expressed concern over this lack of advocacy and unifying C2 structure.³⁹ With lack of advocacy comes continued vulnerability during current and future force structure resourcing deliberations.

The elimination of the TRANSCOM and transportation composite group headquarters removed the centralized responsibility for JLOTS from within the operational Army. The lack of consistent oversight by operational headquarters with the requisite knowledge and expertise in JLOTS effectively degrades the Army's ability to plan, train for, and ultimately execute its JLOTS responsibilities in support of GCC requirements.⁴⁰ Consequently, continuous organizational improvement in executing JLOTS tasks and the sharing of knowledge and expertise with joint and theater staffs is also lacking. Atrophy of Army JLOTS capabilities and the related ability to execute terminal operations in degraded or damaged ports significantly impacts the ability to project forces as envisioned in the U.S. Joint Forces Command's (USJFCOM) Joint Operating Environment (JOE) 2009. The JOE predicts that future adversaries will focus on access denial at major seaport and airfield locations in order to counter U.S. warfighting capabilities.⁴¹ Thus, the continued flexibility to insert combat power through austere beach heads or degraded seaports via JLOTS will remain paramount.

Lack of a functional command overseeing marine terminal operating capabilities perpetuates a confusing and inefficient relationship between organizations responsible in some capacity for marine terminal operations, to include SDDC TDA elements, TOE marine terminal operating units, and multifunctional logistics headquarters operating within a theater. Current doctrine does not clearly address organizational and command relationships between SDDC TDA port management and port operating

elements, TOE marine terminal operating units, and the TOE multifunctional sustainment headquarters that the GCC relies upon to orchestrate theater opening.⁴² There is a clear advantage in aligning marine terminal operating capabilities within the Army under a single functional command in order to develop a more seamless approach to training for and executing marine terminal operations across the full spectrum of contingencies utilizing both TOE and TDA force structure, from initial assessment and early entry, transitioning to port and theater opening, and then long term sustainment operations as the theater matures.

The upcoming introduction of the JHSV, a global-reach watercraft platform, will require intense management on the Army's part. Only five of the twelve Army vessels identified under the original requirements documentation currently will be procured. The JHSV is truly unique for Army watercraft in terms of its technological sophistication, inherent capabilities, and high acquisition cost. In order to provide substantive maneuver capacity with the JHSV, vessels will be required to mass at a designated contingency location, potentially operating in conjunction with Navy JHSVs depending upon the requirement. Expensive to procure (approximately \$160 million per vessel)⁴³, operate, and maintain, the JHSV will lend itself to a more centralized, functional management arrangement, beyond individual assignment to GCCs, which ensures these assets are utilized efficiently day-to-day and continuously ready for contingency use when needed.

While the current multifunctional alignment of watercraft and marine terminal operating units is viable, the benefits inherent in functional senior-level advocacy include increased operational JLOTS and austere access expertise, clarity of terminal

operations doctrine, and more efficient, effective management of both capabilities overall. This is compelling rationale for re-establishing functional C2 alignment of this force structure above the battalion-level. Finding an appropriate method to incorporate this functional alignment is the next step.

Functional Alignment

Having established that a renewed functional transportation alignment would significantly enhance the long-term viability and effectiveness of the Army's watercraft and marine terminal operating force structure, the follow-on question becomes how to re-establish this functional alignment in the most efficient, effective, and expedient manner. A potential option would be for the Army to add the desired functional group and transportation command headquarters back into TOE force structure, both within the AC and USAR, with refined numbers of units and unit locations based upon the changes that have occurred to watercraft and marine terminal operating force structure over the past several years. Though difficult to calculate at such a preliminary stage without further in-depth analysis beyond the scope of this study, one might speculate that it would require several hundred additional TOE force structure spaces (combined AC and RC) to generate these functional organizations roughly based upon the total number of soldiers previously authorized in them. Given the current end strength limits that the Army must abide by, additional TOE spaces to re-create functional transportation headquarters could only come from decrements to other force structure, either logistics capabilities or otherwise.

After operating five-plus years with the modular logistics C2 design, re-creating functional TOE transportation group and/or command force structure is infeasible due to a number of reasons. First, modular logistics C2 doctrine has continually progressed in

development and implementation over that time period, making it more difficult to justify significant change in organizational structure and command relationships for what is admittedly a limited portion of transportation force structure and logistics capability overall. Second, force structure resourcing constraints for the foreseeable future will not favor creating additional C2 headquarters for niche force structure that the Army does not rate exceptionally high in immediate priority. Third, the high operational deployment tempo currently experienced by multifunctional sustainment brigades precludes the Army from converting these organizations back into functional C2 force structure. Finally, the continued development and integration of the transportation theater opening element into multifunctional logistics doctrine beyond solely theater opening (i.e. mode operations, movement control, inland terminal operations, etc.) makes its conversion to reestablish other functional headquarters structure questionable.

An alternative to creating new or converting existing organizational C2 structure to gain functional oversight above the battalion level is to align watercraft and marine terminal operating capabilities with SDDC, the Army's senior functional transportation organization. SDDC's core competency as the Department of Defense's (DOD) surface transportation manager incorporates common-user ocean terminal and traffic management services to deploy, employ, sustain, and redeploy U.S. forces worldwide,⁴⁴ and thus, from a functional perspective, it aligns well with TOE marine terminal operating units and with watercraft to the extent that they support marine terminal operations.

SDDC was designated by the Secretary of the Army in 2006 as an Army Service Component Command (ASCC) of USTRANSCOM.⁴⁵ As an ASCC, SDDC exercises

“administrative control authority and responsibility over Army forces.”⁴⁶ USTRANSCOM delegates to SDDC port management responsibility under DOD’s Single Port Manager (SPM) concept for the operation of all common-user seaports ports of embarkation (SPOEs) and SPODs supporting global GCC requirements. The SPM is responsible for the strategic flow of deploying forces’ equipment and sustainment supplies through designated SPODs throughout “all phases of the theater port operational continuum from logistics-over-the-shore operations to a totally commercial contract-supported deployment.”⁴⁷ SDDC’s SPM responsibilities require direct interaction with TOE watercraft and marine terminal operating units when they function as mode and port operators in a theater of operations. The SPM is responsible for providing strategic deployment status information to the GCC as well as workloading the SPOD port operators based on the GCC’s priorities and guidance.

Besides being the ASCC of USTRANSCOM, within Army channels SDDC is under administrative control (ADCON) of the Army Materiel Command (AMC) for Title 10 service-specific requirements. Given the nature of SDDC’s command relationships with USTRANSCOM and AMC, positioning watercraft and marine terminal operating force structure within SDDC generates 4-star command interest and advocacy for these capabilities from both a functional combatant commander and the Army’s senior logistics commander. Advocacy supports higher prioritization of Army funding and other resources, helping to secure the continued maintenance and improvement of this force structure, ensuring that it remains relevant to DOD’s needs over the long term. Increased relevancy reduces vulnerability of the force structure over the course of time.

Realignment of watercraft and marine terminal operating capabilities under SDDC allows for simplification of theater opening and sustainment doctrine through the centralization of marine port management and marine port operations capabilities under a single organization. This enhances SPM functional responsiveness by providing a single point of contact within theater for port management and port operations across the continuum of marine terminal operations, including early entry, theater/port opening, theater sustainment, and JLOTS. SDDC supports the theater or Joint Force commander with common-user marine terminal and watercraft services in all situations, eliminating the complexity of having TOE units under the operational control of multifunctional sustainment headquarters but performing marine terminal operations under the management of SDDC elements.

Realignment of watercraft and marine terminal operating capabilities under SDDC provides unity of effort in planning for and employing these capabilities worldwide, particularly in the case of complex JLOTS requirements. Along with providing SPM for worldwide JLOTS operations, Commander USTRANSCOM maintains oversight responsibility for “all DOD JLOTS-related programs including research and development, acquisition, training, and doctrine.”⁴⁸ Thus, inclusion of the Army’s operational units supporting JLOTS under USTRANSCOM’s ASCC facilitates DOD’s overall management of JLOTS capability through an increased focus on acquiring the necessary equipment, producing trained and ready units, and incorporating new insights more quickly into both joint and Army doctrine.

Realignment of watercraft and marine terminal operating capabilities under SDDC enhances operational planning for contingencies requiring these capabilities by

integrating the prepositioned force structure and the TOE units required to deploy and operate that structure. This arrangement streamlines the management and utilization of prepositioned units and equipment by situating AMC, SDDC, and TOE unit personnel responsible for planning prepositioned equipment operations within a common organizational chain and thus more efficiently synchronizing exercise and contingency requirements prior to final coordination with the GCC operational planners. Ready access and input to equipment data for the prepositioned sets also improves TOE unit awareness and preparation to draw and operate the equipment in support of exercises or contingency operations.

What would some of the mechanics of C2 realignment of watercraft and marine terminal operating force structure look like? In order to provide day-to-day technical, training and readiness oversight (TTRO) for in excess of 6,600 TOE watercraft and marine terminal operating unit soldiers, SDDC would need to utilize TDA C2 capabilities found within its terminal group headquarters. SDDC has four AC terminal groups, three of which are forward deployed OCONUS. An in-depth plan to transition this force structure from the currently assigned ASCCs to SDDC is not feasible until TRADOC and the Headquarters, Department of the Army (HQDA) complete the on-going watercraft and terminal operations CBA and follow-on force management processes that will determine what the remaining force structure should look like and where it needs to be located or stationed in order to meet the Army's stated requirements. A requirement to forward position additional AC units, for instance, might alter how SDDC would modify its OCONUS groups to affect C2 of these elements. SDDC's AC terminal groups, which are TDA elements organized with a mix of civilian and military personnel, would also

need augmentation. That said, some of the basics of a transition plan might be as follows.

When not deployed and residing within the Army Force Generation (ARFORGEN) Reset/Train and Ready Pool phases, AC watercraft and marine terminal operating force structure would remain aligned with the SDDC terminal group that supports the area that it is geographically located in. For instance, watercraft units stationed in the CENTCOM AOR would fall under SDDC's 595th Terminal Group located in Kuwait, while watercraft units stationed within the PACOM AOR would fall under the 599th Terminal Group in Hawaii. CONUS AC watercraft and marine terminal operating units, all located on either Fort Eustis or Fort Story, Virginia, would fall under the 597th Terminal Group, also located at Fort Eustis, and support NORTHCOM and SOUTHCOM. The TOE terminal battalion headquarters organic to the force structure would continue to provide the necessary C2 capability down to the company and detachment level while reporting to the SDDC terminal groups as opposed to the multifunctional logistics or other C2 headquarters they currently report to.

USAR watercraft and marine terminal operating units would fall under the Deployment Support Command (DSC), a Reserve command recently established to provide C2 for SDDC-aligned USAR terminal, rail, and deployment/distribution support units. The DSC incorporates SDDC-aligned TDA transportation terminal and deployment support brigades due to convert in the near future to TDA terminal group organizations similar to their AC counterparts. TOE watercraft and marine terminal operating units would align with the evolving terminal groups. Upon deployment, these

units would align with either AC or USAR terminal groups forward deployed and fulfilling the theater SPM role.

Alignment of watercraft and marine terminal operating capabilities under SDDC affords the Army the ability to pre-organize contingency C2 relationships for these capabilities within the potential theaters of operation. For instance, if organized appropriately for and properly resourced, the 595th Terminal Group would function as CENTCOM's SPM while providing C2 oversight for TOE watercraft and marine terminal operating forces deployed to the area of responsibility (AOR) to conduct port and mode operations in support of a contingency. In a similar manner, the 597th Terminal Group would provide this oversight for operations occurring within the NORTHCOM and SOUTHCOM AORs, while the 598th Terminal Group, SDDC's European presence located in the Netherlands, would provide SPM functions and port operator C2 for the U.S. European Command (EUCOM) and U.S. Africa Command (AFRICOM) AORs. Finally, the 599th Terminal Group would handle SPM and port operator C2 requirements for the PACOM AOR.

Under this construct, the SDDC AC terminal group, or more likely a portion of the group organized as a deployable C2 capability, deploys to the designated operating area and SPOD or SPODs to provide the SPM function and command and control the marine terminal operations and watercraft capabilities that flow into theater and are task-organized depending upon the current requirements and operational environment. TOE rapid port opening elements will conduct initial SPOD assessments and limited initial seaport opening and operations as part of USTRANSCOM's JTF-PO concept. As theater opening gains momentum and the bulk of the TPFDD force structure begins to

arrive, TOE watercraft and marine terminal operations units will deploy to conduct initial entry, non-permissive, austere, and JLOTS operations as well as water line of communications (LOC) mode operations. As the theater continues to mature and marine terminal operations become more permissive and less austere, marine terminal operations will transition to SDDC TDA terminal operations units utilizing commercial-contract and/or host nation capabilities. Army watercraft may remain for water LOC mode operations and other contingency requirements. If need be and the situation permits, SDDC SPM C2 elements may oversee both TDA and TOE units conducting marine terminal operations simultaneously.

There would certainly be additional force structure needed within SDDC's AC terminal groups as well as within the headquarters itself, but the additional requirement is likely to be significantly less than that of new build functional C2 organizations. In particular, the 597th Terminal Group at Fort Eustis, Virginia, would require additional military personnel to oversee personnel actions, operational training requirements, and supply transactions for over 1,400 additional AC TOE spaces that would come with realignment of watercraft and marine terminal operating units on that installation as well as Fort Story. The terminal groups in Kuwait and Hawaii would need minor enhancements in administrative structure to account for the several additional AC watercraft units besides their organic SDDC battalions that they would oversee day-to-day.

Key in making this transition affordable and feasible in terms of additional force structure will be developing one or more deployable TOE C2 cells, scalable in nature, that can be assigned to terminal groups and deploy to an AOR with the terminal group

headquarters to provide the C2 interface between the TOE terminal battalion headquarters and the terminal group/SDDC element functioning as the theater SPM. This cell must be scalable in order to account for the varying amount of TOE structure required dependent upon the size of the contingency operation. The number of these cells, both AC and USAR, should be determined through the on-going TRADOC CBA and follow-on force management processes. Although fewer cells are certainly more economical in terms of personnel spaces and equipment, SDDC must work with TRADOC, ultimately for HQDA approval, to determine the number required based upon their projected capability and potential number of simultaneous requirements.

In addition to increasing force structure positions within the terminal groups, SDDC will need to look closely at its headquarters manning in order to support the addition of over 1,400 AC TOE watercraft and marine terminal operating spaces to its organization, and the TTRO of over 6,600 TOE spaces overall including RC units. C2 and management of this amount of TOE force structure requires expertise in a variety of areas that must be either integrated into the current SDDC staff or augmented to a certain extent if already existing. Attending to the annual operational funding requirements for these TOE units in the form of the Program Objective Memorandum process, supporting the tremendous increase in personnel services support for the added military positions, supporting supply requisition for unit equipment, and maintaining accurate property accountability oversight over the large amount of TOE equipment that comes with this transition are some of the areas of expansion required within the organization's headquarters. A number of these new positions may be best suited for soldiers to fill vice civilian personnel due to the training and experience

required to manage the requirements. AMC's ability to support SDDC with additional positions, SDDC's ability to transition positions from within, and the ability to fill some requirements, for the short term at least, with contract personnel must all be explored as a course of action is determined.

Finally, in transitioning this force structure to SDDC's control, the Army, in concert with DOD, will need to determine what impacts are created for Forces Command (FORSCOM) as the Army's force provider. FORSCOM will continue to have Army requirements for watercraft and marine terminal operating force structure imposed upon it as part of the Global Force Management process. Additionally, there continues to be a need to utilize some of this structure as in-lieu of sourcing for other transportation capabilities that are highly stressed and would have unacceptably short ARFORGEN dwell periods if substitute sourcing was not utilized. Consensus between DOD, the Army, USJFCOM, and USTRANSCOM (for which SDDC is the ASCC) in terms of the degree that Army watercraft and marine terminal operating units are considered committed or otherwise fenced from sourcing, and the process in which DOD will source them for validated requirements, must be refined and re-codified.

Conclusion

TOE watercraft and marine terminal operating force structure play a substantial role in the Army's ability to prosecute expeditionary warfare and campaign operations, providing capabilities that greatly enable theater and port opening, RSO, maneuver, distributed logistics, and LOTS operations. The unique units that provide these capabilities are found in low-density, within both the AC and RC, and have strategic relevance.

The Army, via its doctrine and force structure development subject matter experts within TRADOC and CASCOM, continues to identify and analyze the long-term requirements for watercraft and marine terminal operating forces. On-going TRADOC CBA efforts will, in time, provide recommendations that are likely to bring dramatic change in the organization and potentially the stationing of these units in order to better support GCCs in the future. As those changes occur over time, the Army is best served by senior-level functional transportation oversight of the soldiers and units that make up this force to ensure adequate resourcing of organizations, training of soldiers in complex operations, and efficient management of low-density capabilities to meet ever-expanding contingency and real-world requirements.

Alignment of TOE watercraft and marine terminal operating units with SDDC, and the subsequent TTRO provided by SDDC terminal groups to them, is the most expedient, efficient, and effective way to provide the level of functional oversight required to maintain a relevant capability. Due to the difficulty in growing force structure authorizations in what is essentially a no-growth environment, a thorough study of the organizational change required for this realignment to occur successfully must be accomplished. Some of that study is on-going now under CASCOM, while SDDC must endeavor to review its own staff requirements and develop a feasible plan to create the additional oversight capacity it will need to do the job correctly. With USTRANSCOM and AMC as advocates, it is hopeful that the additional force structure needed to make the terminal group and SDDC headquarters staffs viable can be delivered over time. While there are certainly many aspects of this transformation to be worked out, they are feasible over time and provide the appropriate functional realignment that can only

improve the operational effectiveness and ensure the continued viability of Army watercraft and marine terminal operating capabilities into the future.

Endnotes

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³⁵ Ibid., 1-5.

³⁶ U.S. Department of the Army, *The Sustainment Brigade*, Field Manual Interim 4-93.2, 2-4.

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