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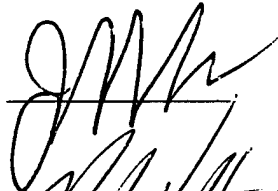
**SEA-BASED LOGISTICS: DOES IT SATISFY THE OPERATIONAL  
COMMANDER'S NEED?**

By


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A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Department of Joint Maritime Operations.

The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

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*Abstract*

The Naval logistics leaders of today have proposed sea-based logistics as the operational concept for supporting the future commanders in the battlespace environment. This concept eliminates the traditional need for Ground Combat Support Service (GCSS) element and bases all logistical operations at sea. This new concept espouses the same precepts as put forth in JV2010 within its focused logistics premise. For this concept to work as stated, the Navy must work together with the other services to eliminate the current stovepipe logistics support doctrine of today.

Even with modifying current logistics doctrine, there are several conditions that make the 100% conversion to sea-based logistics impracticable. The current limitations of technology in throughput capability, lack of defense against asymmetric threats, and the inability to combine concentrated force and maneuver questions are not fully addressed in sea-based logistics. In light of past history and the uncertain nature of future warfare, the United States Naval Service must not abandon its GCSS capabilities. Instead, the ability to compliment GCSS elements along with sea-based logistics will provide the Joint Commander the flexibility to counter the full spectrum of conflict.

## Introduction

As the United States approaches the new millennium, military leaders at the strategic, operational, and tactical level are increasingly aware of the implication new technology has on our weapons, communications, and logistical systems and how it will shape the future battlespace. The emphasis of military superiority is shifting from “mass” of force to “velocity” of force. Within the area of operational art, this technology has the potential to impact the five basic operational functions of operations: command and control, intelligence, fires; protection, and logistics. Technology will impact these functions immensely. For the logistical planner, this velocity concept potentially has the greatest impact. With velocity-based systems, the commander has the potential ability to operate from distant resource bases. However, complete reliance on ship-to-objective logistic platforms as embodied in sea-based logistics will limit the flexibility and agility of the battlespace commander.

In 1996, the Chairman of the Joint Chiefs of Staff published Joint Vision (JV) 2010, an overarching concept for future warfare that espouses this “velocity” type framework. Within the document, it created a new term for operational logistics called “focused logistics.” Currently, all of the military services are examining their existing logistics systems and proposing new concepts to emulate this framework. Within the Naval service (Navy and Marine Corps), sea-based logistics is the Navy’s adaptation of the JV2010 focused logistics concept.<sup>1</sup> Traditionally a ship-to-shore process, the Naval service proposes to transform its existing process of ship-to-shore to ship-to-objective

where the majority of logistics functions are supported from sea-based platforms.

Although this concept admirably embodies the focused logistics vision, it has shortcomings in supporting the joint commander. This paper will examine how sea-based logistics will support current Joint and Naval doctrine and how it supports mission accomplishment for the operational commander.

### *Joint Logistics Doctrine and "Focused Logistics"*

In current Joint Logistics doctrine, it is clear that operational logistics encompasses a critical spoke within the commander's operational concept supporting his theater strategy. Supply systems, transportation, general engineering, health systems, and other miscellaneous services comprise the full range of logistical support.<sup>2</sup> Without any one of these systems, the effectiveness of forces is severely lessened. The commander needs to be able to deploy ready and resource-equipped forces to carry out his mission. For operational logistics to be viable in a warfare environment, the established system must demonstrate responsiveness, simplicity, flexibility, economy, attainability, sustainability, and survivability.<sup>3</sup> For JV2010, focused logistics is the answer.

For focused logistics to be successful, it must have full dimensional protection. In today's environment, force protection is critical with the proliferation of asymmetric-like weapons. Numerous countries as well as non-state entities now have superb mine, submarine, and theater ballistic missile capabilities. It is the premise that technology and information will enable the commander to provide complete security of his forces

including logistical systems in the theater through “full-dimensional protection.”<sup>4</sup> Full-dimensional protection will rely on information superiority in providing the military commander multi-dimensional awareness and assessment of the battlefield and allowing him to take the necessary passive and active measures to ensure his protection. The vision set forth in JV2010 in assuring victory within the battlespace for the future is summarized by the term “full spectrum dominance.”<sup>5</sup>

Through focused logistics, the commander will be able to conduct dominant maneuver and precision engagement actions leading to an environment of full-spectrum dominance. For focused logistics, the fusion of information and technology will provide the strategic, operational, and tactical commanders flexible and tailorable logistics necessary in meeting his mission and objectives.<sup>6</sup> The ultimate objective of focused logistics is to provide just-in-time support to lessen the burden of defending noncombatant forces within a traditional large logistics footprint.

Within the J4 (Logistics) of the JCS, efforts are underway to develop these new concepts into reality. A new working group is incorporating new technology to improve the current JLOTS (joint logistics over the shore) limitations of operating in SS (sea-state) TWO or less.<sup>7</sup> Army and Navy officials are also exploring the ways on how to optimize current JRSOI (Joint receiving, staging, onward movement, and integration) capabilities.<sup>8</sup> In its most recent concept for future logistical operations, the JCS envisions a logistical command structure where a Global Combat Support System organization is directly responsible for ensuring the joint commander has sufficient resources to carry out the

mission.<sup>9</sup> Note this is contrary to the current situation where each service is responsible for supporting its respective component command within a joint theater of operations.

To support the validity of that new technology is revolutionizing existing logistical systems, the U.S. Army has even promoted the idea that new technology has already impacted logistics and has created a revolution of military logistics (RML).<sup>10</sup> Some of the RML systems Army leaders have incorporated into their logistics framework include palletized loading systems, fast sea lift support, and development of logistics civil augmentation program (LOGCAP).<sup>11</sup> Using this new technology to ensure real-time precision and accuracy, they are striving to reduce the traditional large footprint of logistics support. In summary, focused logistics assumes technology will allow the operational commander to have sufficient force projection and force sustainment with minimal logistical footprints. The aim is to put resources in the right place at the right time reducing inventory reliance.<sup>12</sup> This new concept is very marketable in an environment where there are reduced resources, and where political and diplomatic sensitive environments exist. How does the Navy envision its logistical future?

### *Naval Logistics Doctrine and Sea-based Logistics*

In today's Navy, maneuver warfare and power projection capability provides the benchmark for its mission and doctrine.<sup>13</sup> The carrier battle group (CVBG) and the amphibious ready groups (ARG) allow the joint theater commander the power and flexibility to operate anywhere the ocean meets the land. The pure operational

capabilities of these Naval forces include command and control, intelligence, battlespace dominance, power projection, and force sustainment.<sup>14</sup> To carry out this role, the Naval service must rely on adequate logistic forces to sustain its mission.

Currently, the Navy has three distinct arms for providing this support in the early stages of conflict. First, the Naval combat logistic force (NCLF) provides underway sustainment support to the blue-water Navy. This service allows Navy combatants and their associated logistic forces to transit the world's ocean carrying power projection resources. Second, the Navy supports initial Marine Corps-Navy expeditionary logistic needs by maintaining a maritime propositioned force (MPF) which provides initial 30 day sustainment for Marine Corps expeditionary operations. Third, the Navy has an expeditionary logistical force (NELF) which provides ship-to-shore logistic service for Marine Corps amphibious operations. With these three support arms, the Navy has the capability to support littoral operations across the globe. During the 1990 Persian Gulf crisis, the Naval logistic forces initially supported Navy and Marine Corps operations in support of the CINCCENT's mission of defending Saudi Arabia. In Jubail, Saudi Arabia, the MPF rapidly deployed a Marine brigade complement of resources to deter further Iraqi aggression.<sup>15</sup>

From a Marine Corps perspective, this littoral support function is fundamental to its newest doctrine concept, Operational Maneuver from the Sea (OMFTS).<sup>16</sup> The current political and diplomatic nature of our world today have resulted in American leaders using military forces to support both war and military operations other than war

(MOOTW). Somalia, Haiti, Kuwait, Bosnia, and Honduras are a few examples where Marine Corps units have been quickly dispatched via the sea to carry out American foreign policy objectives. This new doctrine encompasses the belief that sea-based logistic support is critical to Marine Corps success. Marine Corps leaders realize that past logistical organizations of GCSS stature created unnecessary weight to the Marine Corps ground commander. They argue that new technology will allow this heavy logistical burden on the ground to be shifted to a more defensible and flexible sea-based platform. From this view, Naval Doctrine leaders have formulated "sea-based logistics" concept to meet the OMFTS doctrine. The basic tenets of this new concept include just-in-time sustainment, reduced demand, joint operational support, and the ability to quickly recover and reconstitute logistical assets.<sup>17</sup> The ability to eliminate the traditional shore-based GCSS is counting on technology to overcome inherent obstacles to this concept.

#### *Are the Doctrine and Concepts Consistent?*

Although focused logistics and sea-based logistics have sound concepts on incorporating new technology to the battlespace environment, neither of these concepts match the existing doctrine. Under these new logistical concepts, the assumption is made that service resources are interchangeable and fully accessible to the commander.

Unfortunately, current joint doctrine states that each service component is responsible for supporting its forces and there is insufficient responsibility to ensure interoperability of service resources and operational capabilities. With today's asymmetric environment, the distinct advantages of each service competencies must not be forgotten. For focused and sea-based logistics to fully be effective, the American military must refocus its

logistics' process from service specific to geographic specific. Furthermore, these new concepts do not completely answer the space-time-force relationships, which is inherent to operational success. Military leaders cannot ignore the benefits that GCSS brings into the operational equation. To further explore the capabilities and limitations of sea-based logistics an operational environment, one must look at these operational factors of space, time, and force more in detail. <sup>18</sup>

### *Operational Factors*

#### *Space*

With sea-based logistics, the commander has the capability for greater maneuverability for his forces. He will no longer need to have long lines of communications and associated intermediary supply points to carry out his mission. With a ship-to-shore capability, it will be much easier for the commander to operate from an exterior position and allowing him a greater variety of maneuvering options. The ability to refocus mission priorities in a changing battlespace environment will be improved if logistical resources are not tied down to a specific logistical base. Additionally, the traditional rear area security burden of land operations will be greatly reduced if not eliminated. The sea-borne forces will be able to stand off the coastline and stay out of the adversary's reach. The sensitive issue of acquiring land rights to establish logistical bases in friendly territories where diplomatic and political issues complicate the matter is also eliminated.

There are also disadvantages with regards to space considerations. New technology has yet to allow the commander to transfer sufficiently sized forces over a large space to

effectively attack a large enemy force. Currently, the only high speed ship-to-shore transport system that can quickly offload M-1 Abrams tanks is the Landing Craft Air Cushion (LCAC). What happens if the adversary moves his forces to the interior of the battlespace beyond the reach of existing sea-based capabilities? Without any advance basing, the commander will not be able to reach the enemy. The commander will find himself limited to an exterior position to deliver his combat power. Without any intermediary bases, the adversary will also be able to occupy and possibly control all of the open space between the sea and the objective that is fundamental to operational success. Another question to ask is whether the littorals truly provide a safe haven for Naval vessels? With the proliferation of theater ballistic missile systems, shore-based anti-ship missile systems, mine warfare, and other forms of special operations, adversaries may very well put these sea-based platforms at risk. The apparent safety net of international waters will not be as secure as proponents argue. Recent discussions on development of large mobile offshore bases (MOB) also raise the question of whether these large platforms are defensible against asymmetric threats of the 21<sup>st</sup> century.<sup>19</sup>

### *Time*

The biggest advantage of this new concept is the creation of a responsive system for initial deployment of forces. The ability to deliver materiel and forces through a sea-based platform will greatly minimize delay that a hostile or immature land environment would cause. The time needed to develop resource-intensive combat service support areas would be eliminated. In turn, the number of intermediary logistic points would be greatly reduced if not eliminated and the amount of time the commander would have to

both plan and conduct joint *combat* operations will increase dramatically. With just-in-time delivery systems, valuable combat resources can be focused on fighting the enemy upon delivery and not wasting time through a lengthy logistical support system. The commander will in turn have the capability to plan for quicker sequential operations and not be bogged down awaiting supplies. Reduction of support bases will also create greater simplicity for the commander.

However, this time advantage could be severely limited if reinforcements are required. Will the commander have sufficient time to move reinforcements into the theater? If the delivery points of the ship-to-shore objective become too distant, will the commander have sufficient time to constitute sufficient forces to attack the enemy? Without forward basing, the commander will be at the mercy of throughput capacity and performance of existing delivery platforms. As mentioned earlier, there is no ship-based delivery platform in U.S. inventory that can forward large quantities of heavy combat equipment to a large theater. In general, without an endless capability of delivering forces of all sizes and quantity over long distances at rapid speeds, the operational commander will be limited in maneuver options.

### *Force*

The underlying viability of sea-based logistics centers on force impact. Within the vision of future battles, the assumption is that light and agile forces with lethality can assure the commander victory in the asymmetric environment of the 21<sup>st</sup> century. The intangible factors of leadership, training, and moral and discipline will also help to overcome any

inferiority in force quantity. Traditional airlift resources used to move supplies to GCSS locations will be eliminated freeing up these resources to be used elsewhere.

The assumption that technical superiority will overcome is somewhat optimistic. In World War II, Russia with its numerically superior but technologically inferior forces defeated the Germans on the Eastern front.<sup>20</sup> There is no guarantee that the United States will always face a smaller force in future conflict. Over the past 200 years numerous countries such as Great Britain, Germany, the Union of Soviet Socialist Republics (USSR), Iraq, Vietnam, Bosnia, etc. have proven that force structure is a dynamic factor of the adversary and that our force structure must be able to cope with all types of threats. With sea-based logistics, there is yet to be evidence that large-scale forces can be maintained, offloaded, and selectively adjusted in a sea-state environment as required by the operational commander.<sup>21</sup> Proponents of sea-based logistics mention that the MOB is the answer to this problem. There is considerable debate whether the estimated cost (\$10-15 billion) to build one is worth the investment.<sup>22</sup> Why not construct less costly C-17 aircraft for intra-theater support? Additionally, with the draw down of overseas military presence, the sustainability of Army ground forces will have to be from sea-based platforms and the interoperability between Naval and Army units is far from becoming a reality.

### *Space-Time*

The concept of reducing or eliminating logistical footprints through sea-based logistics is music to the operational commander's ear. More time is available to evaluate the total

battlespace and allow him the flexibility of maneuvering his light and agile forces against the adversary. Through technology, he will be able to tailor his forces while at sea and pull the right forces to the point of engagement. Economy and efficiency is clearly the benefit of this concept.

Debatable is how timely and costly can military resources be tailored and maintained in a geographically constrained sea-based platform? The last thing the commander would want to hear from his logistics staff is that equipment X cannot be delivered because it is located in an inaccessible location or it has not received the proper maintenance aboard the ship. Will sufficient forces will be able to be brought to the forward area of the battlespace to give the commander maneuver flexibility?

### *Space-Force*

Under sea-based logistics, technology innovation is critical to achieve the space-force advantage. It is presumed that technology of the future will be able to project lethal and agile combat forces to support the commanders' objective(s). This assumption is very bold considering the Department of Defense and Naval Service's throughput delivery resources (i.e. AAV, LCAC, OV-22) of today have very limited load capabilities. The other potential drawback in this relationship is the inability to capture space and limit your adversary's force capability. Without any forward basing, the adversary will be able to reconstitute his forces and use space to attack to commander's sea-based platforms as well as his lines of communication to the objective(s).

### *Space-Time-Force*

Current Naval doctrine assumes that littoral warfare is the main concern for military planners for the future. Somalia and Bosnia clearly provide examples on how this new logistics concept could free the operational commander of unnecessary constraints within a theater of operations. However, other recent conflicts also contradict this current assumption. Saddam Hussein, who the United States has battled with military and political force over the past nine years, has his defenses scattered throughout the *interior* of Iraq. The infamous terrorist leader, Bin Laden, has his base of operations in the mountains and valleys of Afghanistan. The bottomline is that in the future, adversaries of the United States could manipulate any reach limitations that sea-based logistics could impose on the commander. In the near future, it is questionable where or not sea-based delivery systems will be able to adequately extend their support reach to defeat the adversary over a large space in a timely manner. Without any GCSS, it is highly unlikely.

### *Discussion*

Upon reviewing the aims of focused logistics and sea-based logistics, both of these new concepts appear to have merit. For focused logistics, the ability to leverage technology and information to create a more maneuverable force with lesser burdensome resources appears to be a viable concept. Private industry within the United States has proven to the world that just-in-time concepts are significant improvements to traditional inventory processes. Numerous articles have been written concerning the phenomenal success companies such as Wal-Mart and Home-Depot have incorporated technology into their

infrastructure support system. However, one must be aware that these private institutions do not operate in an environment where all forms of threats (i.e. physical, asymmetric) to business are encountered. The military commander has to incorporate the operational factors of space, time, and force in his logistical planning. Private industry, on the other hand, focuses primarily on force and time only.

Another big challenge for the joint commander is the current nature of organic support each service provides its forces. Although efforts are underway to develop better interoperability support systems for the DoD, there still exists certain service specific logistical support items that do not allow the DoD the unity of command and simplicity in achieving the logistical successes of private industry. The JCS must reexamine its current logistics doctrine where it is the service's responsibility to supply its component forces. Would it be better to reclassify logistical support in terms of air, land, and sea vice Air Force, Army, Navy, and Marine Corps?

For sea-based logistics, Naval doctrine must not forget that as the United States' military footprint shrink in overseas countries, the sea services will more and more be the first units to be placed in harm's way. Although the Army currently uses its own ship-to-shore support system, it is likely that economic forces will drive the services to develop joint capabilities that can support all types of offload. As stated earlier in the paper this process has started with the formulation of the JRSOI team. It is questionable whether technology in the near future will be able to support delivery of all types of military resources from a sea-based platform. Additionally, adequate ship defense systems must

be developed. Further advancements in adversarial TBM, mine warfare, and other asymmetric measures must be in place for this concept to be viable. The lack of throughput continues to be the ultimate Achilles' heel of this concept.

Based on the above conclusions, the Naval leaders of today must realize that technology has yet to replace the traditional GCSS role. Until technology produces the requirements to overcome the limitations of a logistical support system solely based on ship-to-objective, I believe it is more realistic to retain a flexible GCSS support structure in support of sea-based and focused logistics. History must not be forgotten and that the nature of adversaries will continue to change as we move into the 21<sup>st</sup> century and that small-scale confrontations are the only battles to be fought.

### Conclusion

When looking towards the future, Naval planners are ambitious as to the benefits new technology will bring to the logistical world. The concept of an agile logistical bases situated in the littoral region of the coast is a most noteworthy goal. However, the asymmetric nature of potential adversaries will threaten the freedom of sovereignty a distant offshore base provides. In addition, the flexibility of the joint commander of receiving the appropriate might of force within the space, time, and force equation is questionably limited by current and future JLOTS technology. The right approach is to balance the capabilities of both sea-based and shore-based logistics to give the commander the flexibility needed to compete with any adversary on the battlefield. A

diverse tool bag of logistical support will be the answer to combating the symmetric as well asymmetric threats into the new millennium. Technology cannot replace the realities and requirements of operational art.

## NOTES

- <sup>1</sup> Navy Department, "Sea-based Logistics: A concept for Sea-based Logistics." Marine Corps Gazette. November 1998. A-2.
- <sup>2</sup> Joint Chiefs of Staff, Doctrine for Logistics Support of Joint Operations (Joint Pub 4-0) Washington, D.C.: 27 January 1995, I-3.
- <sup>3</sup> Ibid., II-2.
- <sup>4</sup> Joints Chief of Staff. Joint Vision 2010. Washington, D.C.: July 1996. 23.
- <sup>5</sup> Ibid., 1.
- <sup>6</sup> Ibid., 24
- <sup>7</sup> Joints Chief of Staff, "Joint Deployment/Rapid Distribution," J4 Projects. <<http://www.dtic.mil/jcs/j4/projects/deploy>> (15 January 1999)
- <sup>8</sup> Ibid.
- <sup>9</sup> John Cusiak and John Shalikhshvili, Focused Logistics. A Logistics Roadmap. Washington, D.C.: 1 August 1997. 16-17.
- <sup>10</sup> Norman Williams, "The Revolution in Military Logistics." Military Technology. November 1997. 51.
- <sup>11</sup> Ibid., 53.
- <sup>12</sup> Joint Chiefs of Staff. Concept for Future Operations. Washington, D.C. 1997. 31.
- <sup>13</sup> Navy Department, Naval Warfare (NDP-1) Washington, D.C.: 28 March 1994. 33.
- <sup>14</sup> Ibid. 61.
- <sup>15</sup> Navy Department. Naval Logistics (NDP-4) Washington, D.C.: 10 January 1995. 61.
- <sup>16</sup> Marine Corps. Operational Maneuver from the Sea. Washington, D.C.: 1994. 2.
- <sup>17</sup> Navy Department, "Sea-based Logistics: A concept for Sea-based Logistics." Marine Corps Gazette. November 1998. A-2.
- <sup>18</sup> JMO Department, Operational Factors. Naval War College, Newport, R.I. September 1997. 1-12.
- <sup>19</sup> Roman Schweizer, "Waterworld," Armed Forces Journal International. September 1998. 60.
- <sup>20</sup> Milan Vego. "Operational Factors." On Operational Art. Newport, RI. September 1998. 71.
- <sup>21</sup> Center for Naval Analysis, Marine Corps Operations Analysis Group, Supporting an Amphibious Assault from a Sea Base. CRM 91-6, Alexandria, VA: 1991.p. xi.
- <sup>22</sup> Roman Schweizer, "Waterworld," Armed Forces Journal International. September 1998. P.64.

## Bibliography

- Center for Naval Analysis, Marine Corps Operations Analysis Group. Supporting an Amphibious Assault from a Sea Base. CRM 91-6. Alexandria, VA: 1991.
- Cusiak, John and Shalikashvili, John. Focused Logistics, A Logistics Roadmap. Washington, D.C.: 1 August 1997.
- JMO Department, Operational Factors. Naval War College, Newport, R.I. September 1997.
- Shweizer, Roman. "Waterworld." Armed Forces Journal International. September 1998. 60-64.
- U.S. Joint Chiefs of Staff. Concept for Future Operations. Washington, D.C. 1997.
- \_\_\_\_\_. Doctrine for Logistics Support of Joint Operations (Joint Pub 4-0). Washington, D.C.: 27 January 1995.
- \_\_\_\_\_. "Joint Deployment/Rapid Distribution," J4 Projects.  
<<http://www.dtic.mil/jcs/j4/projects/deploy>> (15 January 1999)
- \_\_\_\_\_. Joint Vision 2010. Washington, D.C.: July 1996.
- U.S. Marine Corps. Operational Maneuver from the Sea. Washington, D.C.: 1994.
- U.S. Navy Department. Naval Logistics (NDP-4) Washington, D.C.: 10 January 1995.
- \_\_\_\_\_. Naval Warfare (NDP-1) Washington, D.C.: 28 March 1994.
- \_\_\_\_\_. "Sea-based Logistics: A concept for Sea-based Logistics." Marine Corps Gazette. November 1998.
- Vego, Milan. "Operational Factors." On Operational Art. Newport, RI. September 1998. 19-81.
- Williams, Norman. "The Revolution in Military Logistics." Military Technology. November 1997. 50-57.