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Naval Operational Logistics: Reaching ... *From the Sea*

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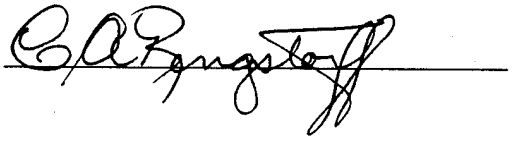
A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Department of Operations. The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

Signature: 

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Abstract of

NAVAL OPERATIONAL LOGISTICS:
REACHING ... *FROM THE SEA*

The revised strategic maritime concept embodied in the U.S. Naval Service White Paper ...*From the Sea* requires a concurrent examination of the naval operational logistics elements necessary to support that concept. Key to the success of extended naval operations at sea is the ability to adequately sustain the naval forces employed. In the absence of any specific doctrine or existing naval operational logistics framework, this paper proposes the adoption of five fundamental naval logistics elements which must always be considered in naval logistics planning at the operational level, for war or for operations other than war. These elements include logistics oganizational considerations, establishment of logistics priorities in-theater, preparation of logistics theater resources and sites, security of operational logistics assets, and development of a logistics axis which best supports the line of operation. The naval operational logistics coordinator or commander must integrate these elements as he balances future operational requirements with current operational tempo, always seeking initiatives for extending operational reach and maintaining maximum logistics support flexibility. Each naval operational logistics element enhances the ability to adequately address and plan for operational branches and sequels, while providing a necessary adjunct to joint and naval doctrine for naval operational logistics.

America's influence depends on its ability to sustain military operations around the globe. Naval Forces encompass the full range of logistics support that is the critical element of any military operation.[1]

...From the Sea

With the publication in 1992 of ... *From the Sea,* this new Navy and Marine Corps strategic concept signaled recognition of dramatic shifts in the United States' security environment during the post Cold-War years, and the concommitant need for a corresponding shift in U.S. maritime strategic planning from open-ocean global confrontation to regional littoral crises. This threat shift, coupled with U.S. military force reductions, mandated recognition of the wisdom and practicality of planning joint and combined actions in a single theater of operations. Additionally, such a shift placed heightened emphasis on the operational art necessary to plan and successfully execute actions ranging acrosss a wide spectrum, from humani - tarian relief efforts in peacetime to naval amphibious assault in war. *Regional Engagement with Naval Forces* provides a draft operational concept that supports both ...*From the Sea* and its 1994 follow-on *Forward...From the Sea.* Termed "expeditionary power projection" (XP^2), this new operational concept "explores how naval forces provide special leverage at the operational level of warfare."[2] XP^2 will center around a carrier battle group and an amphibious ready group, able to project military power across a shoreline, be it hostile or benign.

Such a vision of U.S. naval power projection focuses on sustainability as

one of four key capabilities that naval forces contribute to U.S. strategic security goals, while requiring a robust operational logistics doctrine to support it. Until recently, however, recognition of U.S. naval operational logistics as a fundamental building block in operational art was effectively eclipsed by strategic and tactical logistics planning. Although ample naval doctrinal logistics guidance exists at the strategic and tactical levels, little has been done to pattern the skein that knits these two levels together. Because this is the purview of operational logistics art, this paper proposes some basic precepts for naval operational logistics, and illustrates how such precepts can support the regional engagement concepts embodied in *Forward... From the Sea* as interpreted operationally in *Regional Engagement with Naval Forces.*

The Scope of Naval Operational Logistics

> *While some deficiencies are caused by our failure properly to apply what we already know, there are many areas where we are limited by our imperfect knowledge of the art and science of logistics*[3]
>
> Henry E. Eccles

Admiral Eccles' comments from 1959 are equally applicable to modern naval logistics. Review of joint and naval doctrine provides some insight as to why the art of naval operational logistics has been so difficult to define. First, the concept covers a wide spectrum encompassing all aspects of sustainability from the theater base into the combat zone, overlapping both strategic and tactical logistics areas. Sustainment is the over-arching concept that focuses logistics

efforts for the level and duration of operational activity required to achieve campaign or major operation objectives.[4]

A second reason for difficulty in developing a more precise focus on U.S. naval operational logistics stems from the Navy's often ambiguous use of the words "naval operations," a term which has historically applied to actions as diverse as tactical exercises and convoy protection planning. Although the joint doctrine definition of "operation" has achieved widespread understanding and common acceptance throughout the Services, "naval operation" is not yet refined to follow the joint lead.

Joint Publication 4.0, *Doctrine for Logistic Support of Joint Operations,* designates the Services and their subordinate commanders as responsible for operational logistics support of their own forces, while pointing out that combatant commander staffs will deal with both strategic and operational logistics.[5] Naval component commanders coordinating in-theater naval logistics may choose to establish a Naval Operational Logistics Commander (NOLC). This command concept was effectively utilized during DESERT STORM, where the NOLC assumed Naval component commander logistics responsibilities delineated in Joint Pub 4.0. Logistics decisions at the strategic, operational, and tactical levels remain inter-related, and impact the ability of each senior or subordinate commander to accomplish the logistics mission. Naval Doctrine Publication 4.0, *Naval Logistics,* states that "operational logistics... primarily concerns the Unified combatant

commanders and the Service component commanders."[6] Here lies the lynchpin of the entire theater logistics effort, where the intra-theater resources of manpower, material, services, and facilities are coordinated and provided, utilizing seven fundamental principles of logistics applied over doctrinally defined functional logistics areas.

Joint Publication 4.0 identifies six logistics functional areas. A strong case can be made that two of the operational functions listed in the Naval War College Joint Military Operations Publication *Operational Functions* are clearly relevant to naval operational logistics planning, and belong among the coordinating functions. These are Command and Control, and Operational Protection. No planning organization at any level can function effectively without complete integration of a command and control network to provide guidance and structure. Unity of logistics command and control is a time-proven lesson. "Desert Storm demonstrated the need to manage logistics support ... from a central authority directly subordinated to the Navy component commander."[7]

Operational protection, like command and control, is an integral part of maritime logistics planning at the operational level. Poorly protected logistics nodes and lines of communication quickly become critical weaknesses. Planning for their defense must figure prominently in the decisions affecting the feasibility and sustainability of operational objectives. "If any military plan is to be realistic, logistics considerations and logistics plans must be interwoven."[8] The final list

of logistics functional areas should then be: Command and Control, Engineering, Protection, Supply, Transportation, Medical, Maintenance, and Administration and Personnel. These are the functions which must be integrated and coordinated in logistics planning by means of the naval operational logistics design developed below.

Naval Operational Logistics Design

> *In a major operation, the logistical preparations develop an actual physical momentum of the means of combat; a momentum which must be recognized in the planning and conduct of such operations."*[9]
>
> Henry E. Eccles

Any discussion of power projection and massing of combat power against the enemy must include the concepts of momentum, operational tempo, and the culminating point. Without doubt, these are central sustainment issues. Unless all logistical resources are coherently employed, momentum cannot be maintained; operational tempo slows; and, forces meet or exceed their culminating points, necessitating unplanned operational pauses to rebuild combat power. A well-designed operational logistics plan will effectively balance current consumption of resources with future requirements for prospective actions. Joint Pub 4.0 states, "Logistic resources are always constrained."[10] A good plan cannot guarantee success, but a poor logistics plan courts disaster! The following elements constitute the considerations in constructing any sound naval operational logistics plan:

- **Logistics Organization.** Issues to consider here include whether to designate a Naval Operational Logistics Commander; relationship to other coalition force logistics organizations; joint service coordination when authorized to manage a common support capability; interface with tactical elements for security of operational assets, when necessary; and, establishment of reliable communications networks which maintain connectivity and do not inadvertently overload limited available circuit pathways. If utilized, the NOLC must provide logistics commander's intent and mission guidance to subordinates, in order to ensure that the mission proceeds despite communication system failures, enemy attacks, and widely dispersed logistics activities.

- **Priority Identification.** In logistics, identification of priorities is the fundamental requirement for a successful plan. Tactical units seldom see where they fit in the logistics hierarchy; their importance to the overall effort, and hence their priority, may change as the operation progresses. Army Field Manual 100-5 *Operations* lists prioritization as one of the fundamental precepts in operational logistics planning.[11] The logistics commander must enunciate and continually reevaluate the priorities for resource allocation amid a cacophany of competing voices. For example, explosive ordnance detachments may be so few in number that they must be placed under the control of the NOLC ; the priority of which units receive detachments and how quickly they are transported intra-theater may shift with the operational requirements. Limitations on commodities, facilities, or

forces may severely impact the logistics plan and the ultimate operational, or even strategic, objective. An excellent example of this is the 1944 late fall and winter stalemate along the Siegfried Line in Europe during World War II, and that stalemate's ultimate impact upon Pacific Theater strategy. A change of direction and speed of advance in Europe caused a shortage of both port facilities and inland clearance capacity as the planned logistical scheme was overtaken by events. This unplanned operational pause along the Siegfried Line delayed a decisive campaign against Germany and tied down forces which could otherwise have been directed to the Pacific area of operations. The resulting lack of additional combat service support available in the Pacific significantly influenced the decision to take Luzon before attempting to attack Formosa.[12] Insufficient personnel and vulnerable sea lines of communication across the South China Sea imposed logistical limitations which dictated the invasion of Luzon. Similarly, any constraints on priorities must be identified and considered. During Operation DESERT SHIELD, General Schwarzkopf had to chose between importing additional troops or importing resupply for the troops he already had on the ground -- there was insufficient strategic lift to do both.[13]

- **Direction/Axis.** The axis of operations is an element of operational design which is also extremely important when considering the naval logistics picture. It would be ideal if lines of communication could run as directly as lines of operation, but this is seldom the case, particularly across large bodies of water.

Logistics planners must continuously anticipate combat advances by identifying sites for future logistics nodes or advance bases. Maximum flexibility is critical, because it provides the combatant commander with several alternate operational directions, complicating the enemy's planning while introducing possible elements of surprise. If no advanced sites or nodes are available, the naval force must be sustained on long lines of communication, similar to what the British used in the Falklands War, and to what the United States established in the Pacific during World War II. Today, Marine Expeditionary Forces (Forward) are self-sustaining for thirty days, and combatant ships for a minimum of sixty days. Tactical ship logistics load-outs may exceed 120 days of supplies (food, stores, consumables); but fuel, ammunition, and perishables such as fresh fruits and vegetables will require replenishment long before that time. Maintaining a steady flow of mail via replenishment channels also reaps high dividends in morale. The afloat tactical logistics pipeline components -- the Combat Logistics Force (CLF) ships which carry fuel, stores, ammunition and combinations thereof -- themselves require replenishment, either at sea or inport. This replenishment may start with strategic lift assets, but once in theater becomes an operational logistic consideration involving scheduling, rendezvous points, offload points, cargo handling, resupply ports (when available), and protection. Civil Merchant Ship Naval Augmentation Force (MSNAF) ships are available as strategic assets when consumption rates or distances exceed the CLF capability to resupply tactical forces; beans, bullets, and

black oil will have to be transferred from MSNAF units at sea if no shore facilities are available in forward operating areas. At the tactical level, a Battle Force (consisting of multiple carrier battle groups or amphibious ready groups) Material Control Officer will prioritize force requirements and interface with the NOLC staff to identify and obtain operational replenishment requirements. Operational naval logisticians must anticipate the requirements for afloat logistics support such as rendezvous points, hospital ships, and floating repair facilities -- all important operational logistics nodes, because these assets may very well have to service tactical commands and units widely dispersed throughout the theater. During Operation RESTORE HOPE, two Amphibious Ready Groups and one Carrier Battle Group operating off the coast of Somalia were logistically supported by three CLF shuttle ships working directly for Commander in Chief Central Command. These CLF ships travelled an average of 1000 nautical miles round trip, twice each week, in order to resupply all afloat units from forward and advance logistics sites.

Ideally, advance and forward logistics sites will be available ashore, much closer to the line of operations than was true during Operation RESTORE HOPE . Particularly in a maritime environment, location of available advance and forward sites may actually impact, if not dictate, the line of operation. This was true in the Pacific Theater of Operations during World War II, where naval forces proceeded from one island stepping stone to the next, culminating in the Battle of the Philip-

pine Sea.[14] Naval operational logistics planners must map out anticipated lines of advance in order to identify suitable sites as close as practicable to the tactical engagement areas, while also looking ahead to future objectives and corresponding future sites. Decisions for determining locations for naval advanced bases and forward logistics sites include factors such as: prepositioned equipment or forces; centrality versus distance from the line of operations; mature air and port facilities, their proximity to one another, and host nation support; previously negotiated contracting agreements; labor and communications availability; adequate repair and medical facilities, or suitable berthing for tenders and hospital ships. But the fundamental consideration is the distance and direction in relation to the line of operations.

- **Preparation of the Logistics Theater.** Once the geometry of the theater is known, the naval operational logistics staff must address practical aspects of integrating the resources so that they flow smoothly from strategic sources to tactical users. Considerations include:

> Infrastructure Development. If no advanced or forward logistics sites exist, this may simply involve identifying any additional support that CLF ships require in order to accomplish their operational shuttle duties. Increased cargo throughput may require reserve detachments to augment storekeepers and non-rated cargo handlers. MSNAP force ships may require unforeseen equipment installations. Rendezvous points between MSNAP ships entering the theater and

CLF ships in need of replenishment require reevaluation and re-designation as the force moves forward. Repair and medical ships, if being used as operational rather than tactical assets, must be available and centrally located. The decision to retain operational level control of such ships rests on how many are available, special capabilities they may possess, and the number and locations of tactical units they must serve. In DESERT STORM, only one tender was capable of rearming combatant ships with Tomahawk missiles, an evolution which had to be conducted in port for ships of various tactical organizations. This tender became an operational vice tactical asset.

If forward logistics sites **are** available, they may require upgrade or modification to support naval and commercial use. Although host nation agreements are handled at higher echelons, the NOLC staff will interact directly with local host nation representatives to discuss infrastructure requirements. The NOLC may request construction battalion personnel or even reservists to assist in repairs or construction, if necessary. Vulnerability to enemy attack is an especially critical issue when developing a site to include ammunition and fuel storage.

> Support Site Manning. The Logistics Task Force "... enables the commander's logistics staff to custom build contingency response teams for manning advanced logistics support sites by using reserve force augmentation." [15] Once in place, these units can coordinate all of the labor and scheduling issues necessary to support that site. During DESERT SHIELD/STORM, ninety percent

of combat support material arrived in the Gulf by sealift. Naval materials were off-loaded in Jebel Ali, United Arab Emirates (UAE), then transported to afloat forces by CLF ships. Materals needed at other land sites in theater were either trucked, flown out of the UAE airport at Fujairah, or transported by CLF ships. Reserve logistics units operated at both Jebel Ali and Fujairah, coordinating all aspects of the receipt, storage and transshipment activities under NOLC control.

> Resource Coordination. Intra-theater transportation asset paucity will often pose the greatest challenge to the NOLC, particularly if waterborne convoys are used. Transportation is not the only potential limitation to consider, however. A single enemy attack on one small convoy could quickly exceed local shipyard repair and drydock capacity; casualties during an amphibious assault may strain hospital ship or medical shore capabilities. Salvage ships would be kept busy in either battle scenario. All of these resources would require scheduling and prioritization of usage. In addition, specialized repair personnel might require rationing among ships and shipyards. Even an administrative function such as personnel berthing could become an operational logistics concern.

> Contracting. Responsibility for locally obtaining labor, services, and food will usually devolve upon the tactical commander. However, theater-wide contracts negotiated by the NOLC staff may result in more consistent and economical arrangements. Medical and repair facilities contracts **must** be coordinated by the operational commander.

- **Security.** British losses in the Falklands starkly demonstrate how vulnerable an entire maritime campaign can be when lines of communication are overextended and inadequately defended. Major General Julian Thompson considered "... sinking of *Atlantic Conveyor* the most serious loss of the war."[16] Construction materials for a forward air strip and all but one of the Chinook helicopters upon which the British had based their troop transportation plans sank with her, seriously jeopardizing the British war effort. Within the full context of the war, one quarter of the British ships attacked were logistics assets, and all but two of the Argentine ships sunk were also logistics units.[17] The situation ashore was just as serious. Argentine air attacks at Goose Green demolished crucial supplies of missiles and mortar ammunition. Coupled with higher than anticipated expenditure of ammunition, only the brevity of the conflict prevented the munitions shortage from spelling disaster.[18]

Early coalition air superiority and lack of any credible Iraqi naval threat prevented similar logistics asset losses during DESERT STORM. Ample host nation support ensured adequate and easily accessible forward logistics sites, resulting in short supply lines which were easier to defend. However, naval logistics planners cannot afford to ignore security requirements for their logistics ships and sites, nor be lulled into a false sense of security based on lack of Gulf War mortality. Even though the NOLC may have no indigenous combatant capability to protect maritime logistics ships as they transit intra-theater, staff

planning and coordination are essential to ensure that a protective umbrella is spread over operational naval logistic assets. Schedules of shuttle operations for ammunition and stores ships, which routinely fall under operational logistics commander control once in theater, must be shared with tactical commanders. Strategic lift logistics assets entering the theater may require escorts the entire distance, upon closing a threat perimeter of the combat area, or through certain chokepoints. During DESERT STORM, logistics ships were escorted through the Straits of Hormuz by coalition warships, then released in designated "safe" areas, only to pick up escorts again when shuttling north of a designated latitude. Explosive Ordnance and Stinger Missile Detachments were also embarked for certain shuttle operations, and disembarked upon return. Centralization and coordination of such detachments may remain at the operational level or be handled by a tactical commander. Regardless, scheduling of logistics movements and prioritization of detachment assignments will demand close cooperation between tactical and operational staffs. Individual shore facility security will remain a tactical consideration once any required theater assets are assigned.

Protected convoys may be required for both inter- and intra-theater movements. Ships may be convoyed among forward logistics sites, repair facilities, or anchorages. Protection considerations for these ships once in theater must include time/distance requirements versus safe routing, size of convoy, escort availability, and transport requirements.

Conclusion

> *Somebody draws an arrow on the map. Maybe it is Mr. Roosevelt...maybe it is Admiral Nimitz or General Eisenhower... but whoever makes it or agrees to the making of it...from the arrow on the map to the troops landing on the beaches is a long and difficult road.*[19]
>
> C. S. Forester

It is indeed a long road from the planning to the execution of a naval operation, and this paper has attempted to outline some of the naval operational logistics "aids to navigation" which must appear along the way. The naval operational logistics elements delineated above -- organization, direction/axis, priority identification, preparation of the theater, and security -- represent the fundamental building blocks which must always be considered in planning and conducting operational naval logistics. Although other elements may apply in isolated situations, operational naval logistics doctrine requires elements that can meet standardized general application criteria, as demonstrated here.

Similarly, many of the elements addressed at the naval logistics operational planning level may apply to tactical or strategic planning. Operational art is not a science which clearly separates all three levels of war; rather, it bridges strategic and tactical planning and execution. This paper presents those elements which will often fall under the naval operational logistics commander's purview, and which must be considered or coordinated by that commander in order to ensure that the line drawn by...*From the Sea* ends with naval forces crossing the beach.

ENDNOTES

1. Department of the Navy, ...*From the Sea: Preparing the Naval Service for the 21st Century,* Washington, D.C., 1992, 9.

2. Center for Naval Warfare Studies, *Regional Engagement with Naval Forces,* Newport, RI, 1996,

3. Henry E. Eccles, *Logistics in the National Defense,* Harrisburg, PA, 1959, 42.

4. Joint Pub 1-02, *Dictionary of Military and Associated Terms,* Washington, D.C., 1995, 370.

5. Joint Pub 4.0, *Doctrine for Logistics Support of Joint Operations,* Washington, D.C., 1995, I-2.

6. U.S. Naval Doctrine Publication 4, *Naval Logistics,* Norfolk, VA, 1995, 7.

7. Stephen F. Loftus, "Supporting Forward-Deployed Forces", *Naval Presence and the National Military Strategy,* Boston, MA, 1993, 181.

8. Eccles, 59.

9. Ibid., 126.

10. U.S. Naval Doctrine Publication 4, *Naval Logistics,* II-7.

11. U.S. Army Field Manual 100-5, *Operations,* Washington, D.C., 1993, 12-6.

12. Robert W. Coakley and Richard M. Leighton, *Global Logistics and Strategy 1943-1945,* Washington, D.C., 1968, 813.

13. U.S. Department of Defense, *Conduct of the Persian Gulf War,* Washington, D.C., 1992, 35.

14. U.S. Naval Doctrine Publication 4, *Naval Logistics,* 8.

15. Loftus, 181.

16. Julian Thompson, *The Lifeblood of War: Logistics in Armed Conflict,* London, UK, nd, 278.

17. Bruce P. Schoch, "Logistics of the Falklands War", *Army Logistician,* May-June 1986, 7.

18. Thompson, 288.

19. Henry E. Eccles, *Operational Naval Logistics,* Washington, D.C., 1950, 16.

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