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The Wartime Utility of Pre-Positioned Material

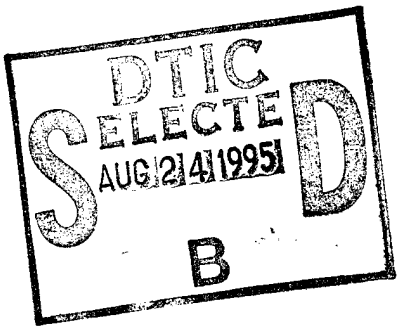
by

David N. Doyle

Commander, United States Navy

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.



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Abstract of

THE WARTIME UTILITY OF PRE-POSITIONED MATERIAL

Combat logistics and combat strategy are inescapably linked and together they constitute an indivisible combat capacity. Without combat, logistics has no reason for being. And without logistics, combat has no means. As an element of combat logistics, pre-positioned material provides the war-fighter with combat utility not otherwise available. Its real worth lies in its potential contribution to combat in the future. The use of pre-positioned material in the Cold War reflected the manner in which the war was intended to be waged on land. Likewise, current pre-positioning theory reflects the manner in which planners project that future wars will be fought. As combat strategy evolves, so does logistics strategy. The end of the last decade brought about a huge change to pre-positioning theory in order to optimize combat operations in a very changed new world.

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THE WARTIME UTILITY OF PRE-POSITIONED MATERIAL

Definition and Theory

Pre-positioned material (PPM) is defined as military-owned material which has a perceived future wartime utility and which is set aside specifically for military use in future conflicts. Buying in on the concept of PPM implies a belief that armed conflicts will continue to occur in the future, that there is a potential future utility to PPM, and that its potential future utility is more valuable than its alternative investment.

PPM theory has its roots in the civilian sector. Before a businessman purchases capital equipment, he compares present and future value of money and carefully weighs the value of a new investment to his company's strategic goals. So does the war-fighter. But the war-fighter must look beyond simply the cash benefit of his investment and weigh its uncertain future wartime utility. In electing to invest in PPM, he must ensure that its potential future military benefit is worth more than the current benefit of the investment in other commodities. If it is not, then he should spend his money on equipment which meets his more immediate needs. Although it could be argued that PPM provides the war-fighter some present-day utility in the form of military-politico signals to allies, its real worth lies in its potential

to facilitate combat in the future.[1] As a key ingredient of combat logistics, PPM must be viewed in light of what it is capable of bringing to tomorrow's battlefield.

History

Combat logistics and combat strategy are inescapably linked in history and together they constitute an indivisible combat capacity.[2] Without combat, logistics has no reason for being. And without logistics, combat has no means. The use of PPM in the Cold War reflected the manner in which the war was intended to be waged on land. Likewise, the current PPM theory reflects the manner in which planners project that future battles will be fought. As combat strategy evolves, so does PPM strategy. The end of the last decade brought about a huge change in PPM strategy in order to support new combat operations strategy in a very changed new world.

Between 1989 and 1991 three watershed events resulted in dramatically new applications of PPM. First, the collapse of the Warsaw Pact in 1989 and the subsequent breakup of the Soviet Union caused the United States to shift its military strategy from one of containment, within relatively fixed borders, to one of power projection into increasingly unstable areas around the

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[1] U.S. General Accounting Office, Military Afloat Prepositioning, Report to the Honorable Sam Nunn (Washington: 1992), p. 32.

[2] William F. Furr, "It's Time to Revise Air Force Logistics Doctrine," Air Force Journal of Logistics, Summer 1992, p. 13.

globe.[3] The end of the Cold War also permitted PPM previously staged in Europe to be made available for deployment into other increasingly volatile geographic areas. Second, previously aligned nations were no longer pre-disposed to accept or maintain U.S. PPM on their soils in a post-Cold War era.[4] This made shore-basing PPM less attractive, despite its lower costs. Alternatives methods to base PPM became more desirable. Third, Operations Desert Shield/Desert Storm (ODS/DS) severely tested the capacity of the United States to react quickly to regional conflicts. The result of the conflict gave long-overdue confirmation to the utility of PPM as a means of minimizing the need for airlift to achieve combat mobility. It gave particular credence to maritime PPM[5] as an alternative to Cold War PPM strategy.

During the Cold War, the Department of Defense (DOD) had positioned its PPM in order to best support the combat strategy of the day. The Cold War was characterized by its relative simplicity. Foes and allies were easily identified by their allegiance to one super power or the other. The U.S. political solution to the Cold War threat was to cordon off Communism. Its military strategy was one of containment. Within this context,

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[3] Rodney L. Boatright, "Combat Support Doctrine: Where We've Been, Where We Are, and Where We Should be Going," Air Force Journal of Logistics, Summer 1992, p. 15.

[4] Barbara Starr, "U.S. to Boost Sealift," International Defense Review, October 1992, p. 987.

[5] Douglas M. Norton, "Sealift: Keystone of Support," US Naval Institute Proceedings, May 1991, p. 47.

regions (i.e Europe) which shared borders with the Communist threat became ideal locations to stage PPM ashore in proportion to the huge size of the forces which would use it. Because the battlefield strategy was already well planned, the Cold War concept of PPM ashore was also simple: stockpile the material in theater and the troops would have it if they needed it. Massive quantities of material were positioned without immediate regard to costs. Containment was more important than cost. Logistics mass in theater to support combat strength was a key utility which PPM provided to the war-fighter. The strategy of containment would not have been possible without the logistics mass which PPM made possible.

Logistics mass had a side utility as well. It reduced potential air/sealift bottlenecks as well as the time it took to become combat ready. The combination of combat and logistics mass in the Cold War lessened the need for rapid deployment of combat forces for purposes of initial projection of power. Getting initial combat troops and material into theater was less of a concern than it is today because both troops and equipment were already there in significant numbers. Because U.S. forces and material were already in-place, critical air and sea lift could concentrate more on re-supply.

PPM also had utility in that it increased security. Real and perceived logistics constraints tended to reflect themselves in even more PPM amassed ashore. As an example, exercise "Nifty Nugget" accentuated the interrelationship between logistic

capacity and combat capability.[6] It identified gaps in logistics capacity and forecasted a 50% casualty rate for U.S. troops! Decision makers determined that these logistic gaps would have to be compensated for with even more material being pre-positioned ashore in Europe.

Late in the last decade, increased combat mobility began to emerge as an important utility for the war-fighter. Land-based PPM which was characteristic of the Cold War had given up mobility in favor of logistics mass. Sea lanes provided some potential for increased mobility, but PPM afloat virtually did not exist. It is true that the Air Force, Navy, and Defense Logistic Agency kept modest quantities of critical spares and fuel pre-positioned aboard ships,[7] but the logistics concept of maintaining combat equipment pre-positioned aboard ships was relatively new.

A decade earlier (1979), the Marine Corps had made a decision to prototype maritime PPM in response to a DOD concern that Cold War PPM would not be capable of providing the rapid response needed to counter emerging threats in Southwest Asia.[8] This decision was made easier by the realization that the United States could not afford to shore-base PPM as it had been doing in

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[6] James Kitfield, "Dash to the Desert: I The Gathering Storm," Government Executive, November 1990, p. 14.

[7] U.S. General Accounting Office, p. 2.

[8] Paul D. Wisniewski, "Dueling Prepo: Do New Army Prepositioning Ships Duplicate the Marine Corps'?," Armed Forces Journal International, September 1994, p. 22.

Europe and in Korea for decades. Moreover, shore-basing U.S. combat equipment was not an issue which friendly nations in Southwest Asia were eager to take on, given its geo-politico implications.

The Marine Corps concept manifested itself in the creation of the Maritime Pre-Positioning Force (MPF), which consisted of 13 ships. These were distributed in three different MPF squadrons which were strategically placed to minimize transit time into potential areas of conflict. The cost of initially outfitting the ships was significant. More than two billion dollars was invested in unit combat equipment alone. Each squadron carried enough to outfit and sustain about 16,500 combat troops for a period of 30 days. The only assets required for combat that were not positioned aboard MPF ships were aircraft and troops.[9]

Maritime PPM did not expand much beyond the Marine Corps experiment prior to ODS/DS because for several years the MPF concept appeared to be a costly paper tiger. In the decade preceding ODS/DS, the MPF ships had few opportunities to train in joint exercises. To Marines who understood its potential, the MPF program was considered essential to a new U.S strategy of power projection which was replacing the 45 year old strategy of containment. To others, the additional investment costs and maintenance it required was a burden which should have been

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[9] William H. Harris, "MPF Reconstitution," Marine Corps Gazette, November 1991, p. 35.

carried either by the Navy, since it involved ships, or by the Army, since it involved combat equipment.[10] Consequently, the real value it could have in the modern theater was not well understood either inside[11] or outside the Marine Corps. For years maritime PPM remained a wild card whose utility was uncertain[12] even to the Marine Corps.

The wild card became a trump card with the Iraqi invasion of Kuwait on August 2, 1990. The utility of the PPM, and in particular maritime PPM, was finally tested[13] in a modern combat theater. At that time, DOD had a total of 23 ships with PPM aboard. Thirteen of these were MPF ships which were fitted out with combat equipment and supplies, the remaining 10 ships carried consumable goods or fuel.[14] Within days, MPF ships were in theater and were offloading critical heavy combat equipment. Thousands of airlift flights from the United States into the theater were avoided and these lifts could be used to move other critical troops and equipment. Maritime PPM allowed a significant joint presence to be delivered to Southwest Asia a

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[10] Tom D. Barna, "Maritime Prepositioning Force Offload: No Longer a Paper Tiger," Marine Corps Gazette, November 1991, p. 40.

[11] Carlton W. Meyer, "MPF Squadron Landing Teams," Marine Corps Gazette, April 1992, p. 52.

[12] James Kitfield, "Desert Shield Raises Concerns about U.S. Defense Posture," Government Executive, October 1990, p. 38.

[13] AFJI Staff, "Ready, Responsive, Timely: Interview with VADM Philip M. Quast, Commander Military Sealift Command," Armed Forces Journal International, December 1994, p. 16.

[14] James Kitfield, "Dash to the Desert: III Lifeline Across the Seas," Government Executive, November 1990, p. 30.

full two weeks earlier than it could otherwise have happened. Pre-staged combat rations fed not only the Marines, but also Army troops until logistic lanes could catch up. The availability of pre-positioned rations aboard MPF ships also allowed for early air lifts to be used for additional capability rather than for rations. Although not without its problems, the maritime PPM concept proved it mettle. It worked well. It was flexible, responsive, it provided a much-needed punch within just a few days. It provided the war-fighter almost all the utility he had with shore-based PPM, with the added benefit of sea legs.

The realities of modern warfare will strain the U.S. logistics capabilities under the best of conditions.[15] ODS/DS was a combination of the best and of the worst possible logistic scenarios. It has been stated that ODS/DS was 90% logistics and 10% combat.[16] While seaport and air facilities in theater were among the best in the world,[17] the theater was still 8,000 miles away. The distance stretched the logistics capacity of the United States to its limit.

After ODS/DS ended, the effects of the watershed events converged to reshape the logistics mobility strategy for using PPM. A major force for change was the Mobility Requirements Study. This study, begun in 1991 and completed in 1992,

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[15] Carlton W. Meyer, p. 20.

[16] William J. Warren, "Logistics of War & Peace," American Shipper, April 1991, p. 30.

[17] John J. Kelly, "Beyond the Cold War: The Future of U.S. Amphibious Operations," Sea Power, May 1992, p. 37.

recognized that troop and equipment reductions overseas would have profound effects on the mobility requirements to support future wars. The effect of reduced forces pre-positioned abroad would be that more forces would need to be moved into theater from other locations to support combat operations. Hence, the mobility requirements of a smaller presence in the future would actually increase the lift requirements,[18,19] and would stretch the logistics arm even more. This study defined and documented believable mobility deficiencies for the first time. It provided a basis for new acquisitions to correct the lack of lift capacity. It validated and strengthened the utility of PPM in general and placed specific emphasis on maritime PPM as a valuable partner with airlift and sealift in quickly getting combat troops and their equipment into a new modern arc of instability stretching from Eastern Europe to Korea. Included in this arc is the Middle East, Southwest Asia, and the littoral regions of the Indian Ocean and Southeast Asia.

It was not long after Desert Storm ended that the Army began to re-think its pre-positioning strategy in light of certain force reductions.[20] Backed by the Mobility Requirements Study which was still in progress, the Army committed to a large-scale

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[18] Bruce A. Block, "Avoiding a Logistics Chokepoint," Army Logistician, July-August 1992, p. 23.

[19] John J. Kelly, "Beyond the Cold War: The Future of U.S. Amphibious Operations," Sea Power, May 1992, p. 37.

[20] Barbara Starr, "U.S. Army to Put Stores Afloat," Jane's Defence Weekly, August 8 1992, p. 7.

maritime PPM program and the Navy committed to building the very large ships to support it.[21] Much of the excess equipment which was previously positioned in Europe was shifted aboard leased ships until the Army's Roll On/Roll Off ships could be built. This maritime strategy provides the Army with a maritime "swing force" of combat equipment capable of supporting a heavy brigade and which provides sufficient food for 15 days.[22,23] While the Army's actions may appear to be duplicative of the Marine Corps' capability, the two programs target very different combat objectives. The Marine Corps targets expeditionary warfare, while the Army targets long-term, heavy commitments. Only the delivery methods resemble each other. Army maritime PPM provides the war-fighter with even more combat alternatives with which to make his presence felt in regional conflicts.

Today, all three Marine Corps MPF squadrons have the ability to support Marine Expeditionary Unit-sized forces. The MPF ships have been specially backloaded to increase response flexibility to very specific needs,[24] It is now possible to send specific ships to support narrow requirements such as security,

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[21] J. B. LaPlante, "It's Time for the Gators," Proceedings, May 1993, p. 50.

[22] John G. Roos, "U.S. Army Puts Sea Legs Under Tanks," Armed Forces Journal International, October 1993, p. 20.

[23] Heike Hasenauer, "Stockpile at Sea (Pre-Positioned Equipment Enables Units to Deploy Without Having to Transport Their Own Vehicles)," Soldiers, February 1994, p. 21.

[24] Lawrence J. Pleis, "Crisis Action and Deterrent Force Modules," Marine Corps Gazette, January 1993, p. 19, 20.

peacekeeping, counter-narcotics, or counter-terrorism operations without deploying an entire squadron of ships. Consideration is being given to placing a small, permanent team of combat support service personnel aboard MPF ships in order to ensure that personnel trained in offload procedures effectively offload Marine Corps PPM.

Despite the success of maritime PPM during ODS/DS and the recent movement to increase combat mobility through more maritime PPM, shore-based PPM continues to be critical. Mobility comes at a cost. Maritime PPM is four times as expensive as shore-based PPM.[25] Moreover, shore basing also continues to provide the quickest potential for capable U.S. response in areas where the likelihood of conflict remains high. It also serves as a good deterrent in those areas. As a result, DOD continues to expand its shore basing of PPM where it can. Since ODS/DS, Kuwait and Bahrain have recognized the utility of allowing the United States to shore base PPM within their borders[26] as one way of keeping Iraqi aggression in check. Oman has agreed to pre-position Air Force material.

Dilemmas

As with any commercial business decision to invest in capital equipment, the decision to spend scarce DOD dollars on PPM requires careful consideration. The up-font costs are high

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[25] U.S. General Accounting Office, p. 4.

[26] Barbara Starr, "USA, Kuwait Test Prepositioning," Jane's Defence Weekly, August 1992, p. 6.

if the decision to invest is made, but the military costs could be higher if the decision to invest is foregone. In making his decision, the war-fighter is faced with at least four dilemmas:

First, an investment in PPM, whether maritime or shore-based, forever denies the opportunity to make that same fiscal investment for other purposes. The value of PPM lies mainly in its future potential strategic value. If PPM has no potential future strategic value, then it is almost certainly a poor military business investment. Given that DOD budgets will continue to decline in out-years, it will become even more imperative that the war-fighter should go to extraordinary lengths to make the most effective use of his resources.

Second, an investment in PPM not only spends current dollars, but also obligates future dollars in order to modernize and maintain the capital equipment even if the equipment is never used in combat. For PPM to be effective, it must work on demand and it must match the technology in the field at the time it is demanded.[27] The warehousing costs, whether for actual warehouses ashore or for ships afloat, must also be added to the maintenance costs of the investment. These overhead costs are high and they are incurred throughout the life cycle of the investment in PPM.

Third, an investment in maritime PPM balances conflicting

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[27] Ernest S. Jones, "Maritime Prepositioning Ships and Desert Storm," Marine Corps Gazette, August 1991, p. 48.

goals for both rapid deployment and capability[28] but it degrades each goal in order to optimize both. Maritime PPM is less capable than properly placed shore-based PPM, but it is much more responsive to combat needs outside the immediate geographic area. Ground forces must be capable of quickly projecting combat power anywhere in the world.[29] The down side of responsiveness is that it trades off combat capability.[30] In August, 1990 the first MPF ships arrived in the theater in just under 5 days after deploying. They carried food and equipment to sustain 30 days of combat.[31] This moderate, but capable force alone could not have prevented Iraq from moving into Saudi Arabia if that had been an Iraqi objective.

Fourth, effective use of PPM (particularly maritime PPM) mandates moving combat support services personnel (CSS) into theater early in the conflict.[32] While the war-fighter may prefer to see armed combat troops on the first flights, such action may sacrifice reception and distribution of critical combat equipment for follow-on forces. Although CSS personnel

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[28] F. G. Hoffman, "First Impressions About the Persian Gulf Crisis: An example of Enduring Realities." Marine Corps Gazette. February 1991, p. 29.

[29] James R. Hogg, "Reinforcing Crisis Areas," NATO's Sixteen Nations, December-January 1990-1991, p. 12.

[30] Ernest S. Jones, p. 50.

[31] Jon T. Hoffman, "Fustest with the Mostest (A Tactical Maritime Pre-Positioning Force)," U.S. Naval Institute Proceedings, November 1994, p. 39.

[32] Tom D. Barna, "Maritime Prepositioning Force Offload: No Longer a Paper Tiger," Marine Corps Gazette, November 1991, p. 40.

were scheduled to arrive in theater early in ODS/DS, their arrival was intentionally delayed because war-fighters chose not to believe they were as important as combat forces. They were wrong. Consequently, the war-fighters lost some of the early combat utility which maritime PPM was capable of providing.

Future

To be successful in the future, the combattant forces must continue to possess forward presence, conventional deterrence, power projection/mobility, and versatility.[33] To the extent that PPM can contribute to these goals it will continue to be a vital part of the military strategic equation. For PPM to be most effective in the future, the war-fighter should recognize the following:

* Shore- and maritime-based PPM should be carefully balanced because each brings unique utility to potential theaters of conflict. Positioning PPM along the arc of instability is prudent in that it significantly reduces dependence on air and sea lift from the United States and shortens response time. Maritime PPM provides combat mobility in large, unstable geographic areas. Shore-based PPM offers a more immediate and capable response in a small geographic area.[34]

* Actual use of PPM in joint exercises will be necessary in

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[33] F. G. Hoffman, p. 30.

[34] Brent Harold and others, "Operation Desert Shield: Logistics Considerations for Sustained Deployment," Logistics Spectrum, Spring 1991, p. 8.

order to reach a real understanding of its benefits and its restrictions. The benefits of PPM need to be understood by all levels. The Army's commitment to maritime PPM provides additional capabilities to those already proven by the Marine Corps' MPF. Each capability has specific and unique utility which can only be fully understood through practice.

* Pre-positioning is a war-fighting tool which needs to remain under the control of the war-fighter. Much has been said about creating pre-positioning commands to deal with the administrative burden of managing PPM.[35] Such a move might not be prudent because it could codify PPM as purely a logistics function. Our military experience shows us that purely logistics functions get neglected during periods of reduced conflict. PPM and its utility must therefore remain closely tied to combat capability and power projection in the mind of the war-fighter.

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[35] David B. Brown, "Needed: A Pre-Positioning Command," Marine Corps Gazette, January 1993, p. 16.

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