

Executive Summary

Littoral Warfare/Amphibious Warfare

PURPOSE

The Assistant Secretary of the Navy for Research, Development and Acquisition asked the Naval Research Advisory Committee to convene this Panel to study Littoral Warfare/Amphibious Warfare. Recognizing the geopolitical shift from relative stability of dominant superpowers towards a world characterized by regional conflicts, the Panel focused its attention on the identification of required capabilities necessary for amphibious/littoral warfare in regional conflicts. The Panel assessed the Navy's and Marine Corps' ability to conduct littoral warfare in the 2000-2010 timeframe, identified capability shortfalls, reviewed areas requiring increased attention, and investigated technologies which would yield significant enhancements if the Naval services were to invest in them.

STUDY APPROACH

The broad nature of the topic mandated significant background knowledge; to achieve this, the Panel attended briefings, seminars, tours, and demonstrations focusing on the four pillars: Power Projection, Sustainment, Command, Control, Communications, Computers, and Intelligence, and Battle Space Dominance as depicted in "...From the Sea". The Panel developed its recommendations with the help of informal subcommittees that reviewed specific areas.

RECOMMENDATIONS

After lengthy deliberation of specific topics, the Panel developed a short list of priority investments and plans to implement those priority investments. These recommendations do not imply that other capabilities are unimportant (e.g. Theater Ballistic Missile Defense, anti-submarine warfare (diesels in particular), etc.), but rather additional attention is required in the areas articulated by the Panel if "...From the Sea" concepts are to be realized.

The recommended investments are based upon the Naval forces overarching concept articulated in "...From the Sea" - to operate in the littorals from over-the-horizon employing "maneuver warfare". With these operational concepts clearly in mind, a list evolved which is depicted as "Priority Investments to Correct Shortfalls". In summary, these shortfalls include: Command, Control, Communications, Computers, and Intelligence; mine countermeasures; over-the-horizon logistics and medical support; modeling, simulation and training; fire support; over-the-horizon mobility; and anti-ship cruise missile self-defense.

Command, Control, Communications, Computers, and Intelligence is the highest priority investment. It focuses on the areas of inter- and intra-service interoperability and surveillance data dissemination. Command, Control, Communications, Computers, and Intelligence is the enabler for conducting any type of effective military operation in the littoral regions and is critical to executing maneuver warfare over-the-horizon.

Mine Countermeasures is the key to success in littoral warfare. Navy and Marine Corps commitment to full support and timely funding of mine countermeasures programs and systems is required. Mine countermeasures investments especially in the areas of mine surveillance, reconnaissance, and clearance of very shallow, shallow, and beach zones are as important as Command, Control, Communications, Computers, and Intelligence capabilities, and are complementary in the areas of surveillance and reconnaissance. Without an ability to conduct mine surveillance and clearing at the time and place of our choosing, maneuver warfare is in jeopardy. Mine countermeasures affects peacekeeping and presence operations as well as combat operations.

Flexible and sustainable logistics is key to supporting our expeditionary forces. Naval logistics systems must be more "user friendly", timely, and able to operate with a reduced footprint ashore. Therefore, a worldwide command and control architecture and sea-based warehousing capability must be pursued to facilitate maneuver warfare over-the-horizon operations. Integrated data transfer systems, common logistics software protocols throughout the Naval service, and improved sea based transportation and cargo handling systems will enable the required logistics capabilities. More robust and integrated coordination of medical services is also required to support Naval forces in the future. In particular, there is a need to better manage the assignment of wounded to specific facilities. More consistent operational medical training would be a near term, relatively low cost method to improve medical services.

Modeling, simulation, and training are the keys that will enable significant improvements to operations in the littoral, regardless of the mission. The rapid maturing of modeling and simulation technology should be exploited by the Naval services to enhance resource decision aids, mission rehearsals, and other training scenarios. For example, enhanced integration of live sea, land, and air military operations augmented with computer generated operation would provide fleet staffs with more realistic training without the expenditure of operating large numbers of relatively high cost ships, aircraft, and manpower.

Recently, Naval forces have had to operate in "other than war" situations where they must cope with very complicated rules of engagement, difficult civilian situations, and ever increasing real time media assessment of the directed mission. The Naval services, therefore, should continue to enhance and expand their training of forces in techniques which will improve their ability to cope with situations often found in these missions.

If it becomes necessary to apply "forcible entry" onto a belligerent's shore, precision fire support, over-the-horizon mobility, and anti-ship missile defense capabilities require increased attention. The Naval services require enhanced end-to-end targeting systems, adverse weather precision guided munitions, long range surface combatant guns and precision missiles in support of ground operations. Improvements to the AV-8B radar, navigation and targeting systems and precisionguided munitions capability will permit this aircraft to operate in full support of ground forces in all weather day and night. Further, to implement maneuver warfare over-the-horizon in a timely and effective manner, the Naval forces should continue to develop and acquire the MV-22 and

Advanced Amphibious Assault Vehicle systems to support the earliest Initial Operational Capability consistent with risk reduction procurement. Operations in the littoral regions often require ships to operate away from the more capable air defense ships, making them vulnerable to a rapidly proliferating cruise missile threat. All surface combatants and amphibious shipping require capable anti-ship cruise missile self-defense systems against sea skimmer cruise missiles. Specific areas requiring improvement immediately are sensor development and fusion, and a high velocity, hard kill system capable of engaging the ever increasing complexity of the high speed, maneuvering cruise missile threat.

SUMMARY

The proposed investment priorities are grouped into two basic categories: near-term to correct wide-application significant discrepancies and those required to conduct forcible entry operations. Command, Control, Communications, Computers, and Intelligence, mine countermeasures, and modeling, simulation, and training are essential for all littoral operations and can be achieved at relatively low cost. To apply forcible entry with minimum risk to Naval forces, however, requires increased emphasis and a sizable investment in fire support, over-the-horizon mobility and anti-ship cruise missile defense capabilities. Tough trade-offs will be necessary within the existing force structure to fully implement these investments. If the United States Naval services are going to continue to operate in the littoral regions, continue to defend national interests in regional conflicts, and implement the concepts articulated in "...From the Sea", the Department of the Navy must refocus its investment strategy from supporting global open ocean conflicts to regional conflicts fought primarily in the littoral environment.