Alliance Requirements Roadmap Series

Exploiting Amphibious Operations to Counter Chinese A2/AD Capabilities

January 2016

Colonel Grant Newsham, USMC (Ret.)

Bold. Innovative. Bipartisan.

1152 15th Street NW
Suite 950
Washington, DC 20005

CNAS.ORG / @CNASDC
T: 202.457.9400
F: 202.457.9401

ABOUT THE AUTHOR

Colonel Grant Newsham, USMC (Ret.) is a Senior Research Fellow at the Japan Forum for Strategic Studies.

The views expressed in this report are personal and the author's alone. They are solely responsible for any errors in fact, analysis, or omission.

ABOUT THIS SERIES

To build a foundation of subject matter expertise for our study, "Dynamic Balance: An Alliance Requirements Roadmap for the Asia-Pacific Region," CNAS commissioned this essay series from experts in third offset strategic thinking, Asian-Pacific maritime security issues, and on partner countries in Asia. These essays were the focus of a December 2015 experts' workshop, where CNAS investigators and leaders in the field discussed in depth the tools the United States, Japan, and its regional partners would need to best shape the future security environment of the Asia-Pacific. These conference papers were crucial to our analysis and have done much to shape the study's findings.

ACKNOWLEDGEMENTS

This project is made possible due to the generous support of the Government of Japan.

ABOUT THE ASIA-PACIFIC SECURITY PROGRAM

The Asia-Pacific Security program seeks to inform the exercise of U.S. leadership in Asia by analyzing how the United States can rebalance its priorities; shape a rules-based regional order; modernize traditional alliances; build the capacity of new partners; and strengthen multilateral institutions. From exploring rising maritime tensions in the region to crafting ways to renew key alliances and partnerships to articulating strategies to extend and enhance America's influence, the program leverages the diverse experience and background of its team, deep relationships in the region and in Washington, and CNAS' convening power to shape and elevate the conversation on U.S. policy across a changing Asia.

Amphibious forces are valuable in several respects from an anti-access/area denial (A2/AD) perspective. They can counter Chinese efforts to expand their networks outwards; they can seize the A2/AD initiative on behalf of the United States and its allies, and they can support the maneuver of maritime forces. The Chinese People's Liberation Army's (PLA) rapid improvement over the last decade has enhanced its "counter-invention" capabilities. A2/AD strategy employs a range of weapons – from sophisticated ballistic and cruise missiles to less complex devices such as sea mines – to prevent or impede the ability of adversary forces to operate in territory – sea, air, and land – hundreds of miles from the Chinese coast and beyond. As defense planners contemplate the Chinese A2/AD threat and how to deal with it, they will do well to recognize the valuable role of amphibious forces as part of a comprehensive counter-A2/AD plan. Mobile amphibious forces that combine sea, ground, and air capabilities are perfectly suited for the maritime geography of the Asia-Pacific region. If properly equipped and employed, they can make a major contribution to countering Chinese A2/AD capabilities.

AMPHIBIOUS FORCE ADVANTAGES IN A2/AD

First, amphibious forces are advantageous because they can counteract PRC efforts to expand A2/AD outwards by employing a countervailing anti-access/area denial strategy on or within the First Island Chain, or from other territory distant from the Chinese mainland.
Currently, the PRC's A2/AD capability is mainly based on or out of the Chinese mainland – and before long, from the PRC's new, man-made islands in the South China Sea. It is too late to prevent this, but Chinese efforts to obtain additional offshore locations from which to expand the A2/AD zone (and most importantly, its effectiveness) need to be carefully monitored, and countermeasures considered. Ground forces are still the most effective way to occupy territory – to seize or retake it, deny the enemy use of it, or use it as a base for offensive operations. Air and naval forces alone cannot effectively occupy contested terrain, and experience shows air attack and naval gunfire alone often cannot displace an entrenched enemy. Amphibious forces – combining mutually complementary ground, sea, and air capabilities and maneuvering from the sea – are an effective way to prevent or eliminate lodgments that might be used as part of an expanded Chinese A2/AD plan.

Second, amphibious forces can play a central role in U.S., allies', and partners' own A2/AD networks. Although Chinese A2/AD capabilities get the most attention, A2/AD works both ways. U.S. forces and partners are equally capable of establishing their own A2/AD approaches in the region that deny – or at least severely limit – PRC access and freedom of action inside the First Island Chain and beyond. Specifically, amphibious forces can emplace, operate, and shift A2/AD weaponry and systems throughout the island and littoral geography of the region. Amphibious units have always been mobile, but they were limited in how far offshore they could dominate. Modern weaponry greatly expands the coverage area and potentially allows "three-dimensional" coverage of large areas of ocean and airspace, and even sub-surface areas. There are several primary weapons and functions amphibious forces can employ as part of an A2/AD strategy.
Anti-ship cruise missiles (ASCMs) alone can form the backbone of an A2/AD scheme. ASCMs can be operated from land and can reach out over 100 miles. Moreover, being mobile and easily concealed, they are difficult to destroy from air, much less from sea. A network of ASCMs deployed in littoral and archipelagic areas and around maritime chokepoints can create a web that is maddeningly hard for enemy ships to penetrate.

Recall the "Coastwatchers" in the Solomon's Islands and elsewhere in the Southwest Pacific during World War II, and then imagine the effects of this small group in possession of lethal anti-ship weapons and a mission to do more than just report on Japanese shipping and air movements. The Imperial Japanese Navy would have faced a daunting challenge to support and resupply Japanese army ground forces – and U.S. Navy and Marines might have avoided the routing they received at the hands of the Japanese navy in late 1942. Given the portability and outsized usefulness of ASCMs, this is an ideal weapon for the U.S. Marine Corps to adopt and place with its amphibious Marine Expeditionary Units. It would also set a good example for allied and friendly amphibious forces.

Another effective and readily available weapon is the High Mobility Artillery Rocket System (HIMARS). Like the ASCM, it is long-range, mobile, and hard to detect and destroy. Although originally intended for use against ground targets, with proper modifications and the right sensors it can be used in an anti-ship role.

Air defense and anti-missile systems are also part of a wider A2/AD network. Besides the well-known Patriot missile, amphibious forces can easily deploy the Terminal High Altitude Area Defense (THAAD) system and other mobile anti-aircraft systems, which offer protection against both missile and air attack. Additionally, the F35-B fighter aircraft with its vertical takeoff and landing capability plays a role in both countering and creating A2/AD, especially given the aircraft's ability to operate from rudimentary, hard-to-locate landing sites and from aboard amphibious naval ships.

Subsurface realms also matter. "Smart" sea-mine technology is rapidly developing and offers another weapon amphibious forces might employ for A2/AD purposes – if they make the considerable effort to take on the role. Laying mines from land, air, or sea with precision, from long distances, and with sophisticated fusing to go after specific targets is a new role for amphibious forces. It is a mission worth the investment, as it offers the possibility of closing off swaths of key ocean "terrain" from an adversary.

Some observers have called for land-based amphibious forces to carry out anti-submarine warfare (ASW) missions in littoral waters and archipelagos, utilizing sensors and land- and air-launched anti-submarine weapons. This concept merits consideration, as amphibious forces can at least enable this effort, even if they currently cannot carry it out themselves.

Third, amphibious forces are advantageous as part of an A2/AD network because they support the maneuver of the maritime force. Amphibious operations as part of an A2/AD network are more than just one element of a static defense that denies the enemy access to territory. Rather, when amphibious forces, make full use of their capabilities and long-range weapons, they aid the offensive maneuver and operations of U.S. and partner naval and air forces by seizing terrain and providing covered sea and air space from which to operate. By achieving this mission, amphibious forces free fleet resources to either expand area denial efforts or focus on offensive operations.

Although naval ships have their own shipboard anti-missile defense systems, in littoral waters reaction times can be very short. Dealing with an incoming ASCM or other missile moving at hypersonic speed is a tricky business. As an extra layer of protection, in certain circumstances amphibious troops ashore can provide security by clearing a land area, preventing enemy forces from operating there, and employing anti-ship and anti-air weapons. During the Cold War, U.S. Marine forces were to be employed in Norway not to fight "the Battle of Norway," but to protect airfields from which

ASW aircraft could hunt for Soviet submarines that threatened the offensive movement of U.S. aircraft carriers.[1]

ALLIED AND PARTNER AMPHIBIOUS CAPABILITIES

There are several steps allied and partner nations can take to exploit their amphibious forces' ability to counter Chinese A2/AD capabilities. Japan already recognizes the usefulness of amphibious forces employing A2/AD weapons. It is creating a Ground Self Defense Force amphibious brigade, linked with Maritime Self Defense Force amphibious ships and with the primary mission of protecting the Nansei Shoto – Japan's southwest island region. It is setting up an anti-ship missile network in its southern islands, possibly including THAAD in the mix. The Japan Self Defense Forces show what is possible when a country recognizes the usefulness of amphibious forces in an A2/AD role. Other partners (or potential partners) with varying degrees of amphibious capabilities on the First Island Chain or near the South China Sea include Australia, Taiwan, Indonesia, Vietnam, and the Philippines.

For these amphibious forces, offensive operations to forestall or uproot the PRC's outward advance of its A2/AD network are perhaps a tall order. However, it is easier to employ and operate ASCMs, mobile anti-aircraft systems, smart sea mines, and ASW systems – and it is feasible, at least in part, for the aforementioned amphibious forces. These are classic asymmetric weapons: relatively inexpensive, easy to operate, and disproportionately effective. U.S. leadership is necessary for sizing up regional military and amphibious capabilities and considering how A2/AD capabilities might be incorporated.[2]

Noted defense expert Andrew Krepinevich proposed an approach called "Archipelagic Defense," whereby U.S. and partner-nation ground forces along the First Island Chain use ASCMs and other weapons to establish what is effectively an asymmetric A2/AD defense network to counter the PRC. Krepinevich proposes a fully integrated Archipelagic Defense strategy involving U.S. forces and partners; this is perhaps difficult for now. It would require more defense cooperation in command and control, hardware procurement, and operational and technical integration than these countries have achieved to date – and it is hard to foresee much progress in the near future. However, cooperation with certain countries in certain areas is feasible. For example, introducing an anti-ship missile network into the Philippines might be feasible as a bilateral effort with the United States, while linking the network with other countries would be too challenging.

Regardless, even the sum of individual efforts would affect PRC planning and operations. One notes the dampening effect of Hezbollah's rudimentary anti-ship missile capability on naval operations off

---

[1] One more example quoted from a retired Marine general, "In extremis Vandergrift's Marines on Guadalcanal hung on to the vital Henderson Field in the face of determined opposition just long enough for the Navy to gather enough forces to make a comeback. Without the ability to contest control of the air it's doubtful that a comeback would have been possible. A naval 'foot ashore' with airfields is just as essential for a naval campaign now. Perhaps even more so." Personal email exchange between the author and Lt. Gen Wallace Gregson, December 8, 2016.

[2] The author recommends studying the Swedish marines and other Scandinavian amphibious forces for examples of imaginative development of specialized craft, hardware, and tactics suited to archipelagic and close, narrow, littoral waters. A number of ideas and lessons can be gleaned that are appropriate for operating in Asia's complex archipelagos – such as Indonesia and the Philippines.

the Lebanese coast, as well as ISIS's recent destruction of an Egyptian naval ship off the Egyptian coast with a ground-launched missile. In addition to operational advantages, one's own A2/AD capability, along with competent amphibious forces to employ it, tends to reduce susceptibility to intimidation. It also allows more freedom of action and creates political confidence that comes of the ability to defend oneself.

NEW APPROACHES TO AMPHIBIOUS OPERATIONS

When employing amphibious forces in A2/AD, it helps to think beyond the traditional concept of purpose-built amphibious ships operating in relatively large forces, such as the three-ship, 2,000-man Marine expeditionary unit/amphibious ready group configuration. Smaller, stealthier, sometimes faster craft – to include civilian vessels – can be effective for moving amphibious troops, equipment and hardware around, particularly for missions such as emplacing and shifting ASCMs, HIMARS, and other weapons to new locations. As an added advantage, the use of non-traditional shipping complicates the enemy's targeting, both because of sheer numbers of civilian vessels and the simple fact that they appear to be civilian. The PRC fully appreciates this point and has incorporated it into its own amphibious warfare plans. Additionally, in certain countries civilian shipping is the only readily available method.

The United States should also consider arming amphibious assault ships. A U.S. Naval Institute *Proceedings* article by three U.S. Navy admirals calls for installing anti-ship missiles on U.S. amphibious assault ships as part of comprehensive "Distributed Lethality."[3] This concept calls for arming more ships – including support vessels – with long-range weapons, operating in a dispersed fashion with an offensive mindset. The idea presents an enemy with many threats and many targets. It makes sense to take advantage of this idea and available technology, both to increase overall firepower as part of A2/AD and to cause problems for the enemy where they previously did not exist.

Of course, commanders must be careful when employing amphibious ships and must adequately protect them, but the need to protect against improved weapons is a problem as old as warfare. One recalls the appearance of the Exocet missile in the Falklands War and the fears that navy ships would be too vulnerable to leave port. A solution – or at least enough of one – was quickly found. For every new weapon or system that appears, it seems that a countermeasure or operational "work around" is invariably discovered. Moreover, the ability to disperse widely and easily relocate amphibious forces throughout the littorals reduces vulnerability to PRC long-range fire while presenting a deadly threat to their forces within range.

CONCLUSION

Chinese A2/AD capabilities are indeed a challenge, but not an insurmountable one. As noted, the PLA is equally vulnerable to these capabilities. There is no single solution, and a range of technologies, forces, and operational procedures are required to successfully operate in an A2/AD environment. Although often overlooked, amphibious forces are an important part of the A2/AD

[3] Thomas Rowden, Peter Tumataotao, Peter Fanta, "Distributed Lethality," U.S. Naval Institute, *Proceedings*, January 2015, http://www.usni.org/magazines/proceedings/2015-01/distributed-lethality.

equation, both in engaging anti-access/area denial threats, and better yet, in creating them. The U.S. Marine Corps, an obvious stakeholder with respect to amphibious operations, will do well to articulate the vital role Marine Corps–Navy forces still play in the counter A2/AD aspect of maritime warfare, and how allies and partners should contribute to this vital mission.