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14. ABSTRACT A joint force commander (JFC) operating in a littoral region requires assured access and maritime freedom of action to effectively and fully employ the capabilities of a joint/multinational force. The United States and its multinational partners must be ready to encounter a formidable submarine threat operating in challenging littoral waterspace across the globe. Antisubmarine warfare (ASW) is a vital core military function, which must be effectively performed to achieve sea control and enable joint operations. Many potential ASW improvement measures stem from a thoughtful evaluation and then application of the tenets of operational art. This paper deconstructs the complex problem of ASW by analyzing the six operational functions individually, across related functions and as a whole. The analysis uncovers challenges and issues, while providing proposed operational solutions that can be applied at the JFC level. Optimizing operating concepts and applying a total force approach (joint and multinational) to the problem, while simultaneously taking advantage of new technology and improved resources will improve the ability of the United States and its partners to effectively command the maritime domain.					
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Better lucky than good? How can a joint force commander improve the probability of achieving assured access and maritime freedom of action when challenged by a submarine threat in a contested littoral?

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 Military 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

A joint force commander (JFC) operating in a littoral region requires assured access and maritime freedom of action to effectively and fully employ the capabilities of a joint/multinational force. The United States and its multinational partners must be ready to encounter a formidable submarine threat operating in challenging littoral waterspace across the globe. Antisubmarine warfare (ASW) is a vital core military function, which must be effectively performed to achieve sea control and enable joint operations. Many potential ASW improvement measures stem from a thoughtful evaluation and then application of the tenets of operational art. This paper deconstructs the complex problem of ASW by analyzing the six operational functions individually, across related functions and as a whole. The analysis uncovers challenges and issues, while providing proposed operational solutions that can be applied at the JFC level. Optimizing operating concepts and applying a total force approach (joint and multinational) to the problem, while simultaneously taking advantage of new technology and improved resources will improve the ability of the United States and its partners to effectively command the maritime domain.

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Antisubmarine warfare superiority includes capabilities that decisively neutralize or defeat an adversary's use of his submarines, thereby assuring access, permitting the use of the sea as a maneuver space, and allowing sea-based operations.

**-Department of the Navy
*Sea Power for a New Era. 2006 Program Guide to the U.S. Navy***

Introduction

On 26 October 2006, a Chinese Song-class diesel attack submarine surfaced in the vicinity of the USS *Kitty Hawk* (CV-63) operating near Okinawa. When finally detected, the submarine was well within its weapons employment range to the *Kitty Hawk*. This incident begs the following questions of significant concern to be asked – how long had the undetected submarine tracked the aircraft carrier, what level of effort was required of the submarine to remain undetected and how did the submarine elude detection from the theater level and numerous carrier strike group antisubmarine warfare (ASW) assets assigned to prevent this type of event? It is also noteworthy that this incident occurred in the area of responsibility where the United States arguably places its greatest emphasis on sea control. Does this incident signify a level of erosion of a military core competency that places critical United States assets in peril or does it represent a level of risk that the United States is willing to accept as it attempts to maintain command of the global maritime commons?

Governing national strategy, joint and service directives specify the military requirement to field and employ an effective ASW capability. *A Cooperative Strategy for 21st Century Seapower* includes the following:

The ability to operate freely at sea is one of the most important enablers of joint and interagency operations, and sea control requires capabilities in all aspects of the maritime domain, including space and cyberspace. There are many challenges to our ability to exercise sea control, perhaps none as significant as the growing number of nations operating submarines, both advanced diesel electric and nuclear propelled. We will continue to hone the tactics, training and technologies needed to neutralize this threat. We will not permit conditions under which our maritime forces would be impeded from freedom of maneuver and freedom of access, nor will we permit an

adversary to disrupt the global supply chain by attempting to block vital sea-lines of communication and commerce. We will be able to impose local sea control wherever necessary, ideally in concert with friends and allies, but by ourselves if we must.¹

Considerable debate has occurred regarding the ability of the United States to perform ASW, with most parties concluding that ASW capabilities have significantly atrophied since the end of the Cold War.

In the history of warfare, the submarine is perhaps the greatest asymmetrical weapons platform ever employed. It empowers a far less capable military force to gain disproportionate and significant tactical, operational and strategic advantages over a stronger adversary. In recent history, the United States has experienced an alarming trend in which four combatant warships were appreciably disabled by much less capable maritime foes through the employment of asymmetric means – mines against the *Samuel B. Roberts*, *Tripoli* and *Princeton* and a terror strike against the *Cole*. The United States must take action to deny – with great certainty – a submarine the ability to conduct a debilitating asymmetric strike against a high-value strategic or operational asset.

The way ahead must include critical analyses and solutions founded in the application of the operational art. Optimizing operating concepts and applying a total force approach (joint and multinational) to the problem, while simultaneously taking advantage of new technology and improved resources will improve the ability of the United States and its partners to command the maritime domain. Despite the challenges posed by a formidable submarine threat operating in a littoral, a number of options grounded in the tenets of operational art and joint war fighting exist to improve the probability a joint force commander can maintain assured access and freedom of action in a joint operating area.

Background – Problem definition: Is there really a problem?

¹ Allen, Conway and Roughead, “A Cooperative Strategy for 21st Century Seapower,” 18.

A cogent answer to this simple question is important because it determines the level of effort required to possess the ASW capability necessary to meet the requirements outlined in our governing strategy and concept of operations (CONOPS) documents. The problem will be investigated in three interrelated areas – environment, threat and risk.

Environment – Post Cold War conflicts have been primarily regional, with most occurring in areas offering coastal access. The forecast geopolitical situation is such that the joint operating areas (JOAs) of the future will most likely include littoral regions with access to large maritime areas. Therefore, a decisive maritime capability is necessary to enable the full spectrum of functional responses of a joint (multinational) force.

Environmentally, these regions pose significant challenges to ASW operators. Acoustic exploitation is extremely difficult due to regular and changing bottom topography, dynamic oceanographic conditions and high density (noisy) shipping traffic. Sensors optimized for the open ocean are ineffective. The naval assets of the coastal states have an inherent advantage in knowledge of the waterspace. This is an extremely challenging area to perform ASW, and the advantage favors the submarine, especially the current generation boats that can fully exploit their surroundings. A challenging maritime operating environment that is well known, significantly valued and able to be protected by asymmetric means by a nation willing to take great risks to defend their sovereignty present an extremely challenging prospect for any joint force.

Threat – The relative capability balance between submarines and ASW systems is cyclical, but has trended toward the submarine since the end of the Cold War. According to a recent briefing presented by the Commander, Naval Mine and Antisubmarine Warfare Command (NMAWC), 39 nations possess some 382 submarines, with 312 powered by diesel-electric

propulsion.² These nations and their overall maritime combat potential vary across the spectrum as a function of platform capability and/or operational ability. Some nations possess a formidable submarine capability that could be expected to be quite successful in performing access denial or maritime strike missions. Even the less capable nations could muster a sufficient capability to conduct a successful surprise attack on a high value unit of a leading maritime power. The current and future submarines that U.S. joint forces may encounter in a littoral environment are becoming even more capable of remaining covert, thus improving their ability to maneuver freely and deny access to shipping critical to achieving the operational objectives required of the joint force commander (JFC).

Though many nations of significant geopolitical concern to the United States possess capable submarines expected to be found in contested regional littoral waters, China represents the greatest potential threat. China has emerged as a regional – and to some extent global – peer competitor to the United States across the military spectrum. This is certainly evident in the rise of the People’s Liberation Army Navy (PLAN). “We come to the preliminary conclusion that a dramatic shift in Chinese underwater aspirations is under way, and that submarines are emerging as the centerpiece of an evolving Chinese quest to control the East Asian littoral.”³ The Chinese possess just slightly fewer submarines than the United States (roughly 15 percent).⁴ The Chinese boats are of varying quality, with many well below modern standards; however, their recent acquisitions (eight top of the line Russian exported Kilo project 636 diesel subs) and new production Chinese diesel and nuclear powered boats are extremely capable. They are also developing air independent propulsion (AIP) equipped submarines that greatly improve the ability to remain submerged and near-

² Naval Mine and Antisubmarine Command, “Command Brief,” Slide 3.

³ Goldstein and Murray, “Undersea Dragons,” 164.

⁴ Saunders, *Jane’s Fighting Ships 2007-2008*, 115,873.

silent for greatly extended periods of time. Their current and emerging submarines have the ability to employ potent weaponry including: wake-homing torpedoes designed for employment against nuclear aircraft carrier sized targets, hyper-velocity torpedoes capable of traveling at 200 knots and over the horizon antiship cruise missiles. The Chinese have also devoted a great deal of energy into training, joint force employment and the development of doctrine based upon proven operating concepts. This daunting array of maritime strike capabilities makes an effective ASW response a must for a joint force operating within the waters the Chinese are likely to patrol in support of their strategic defense aims. The future potential threat is very real!

Risk – A hypothesis regarding a potential adversary’s intent is necessary to determine the anticipated level of risk to friendly forces. Determining the relative level of risk in any endeavor requires combining two components – the severity of effect and the probability of occurrence. A hard or mission kill against a Nimitz-class aircraft carrier (severe effect) would not only significantly erode joint force combat power, but also have a tremendous strategic impact on the nation. This platform epitomizes/symbolizes the might of the American military, and its loss (ship and large crew) could conceivably erode the national will required to support a regional conflict if interests are determined by the American people to be less than vital to the nation. Probability of occurrence runs the spectrum from a surprise attack on merchant shipping outside of a JOA (*guerre de course*) to direct enemy action against joint forces. In 2002, VADM Grossenbacher, then Commander, Submarine Forces Atlantic, stated, “As I testified before Congress, our ASW capabilities can best be described as poor or weak...As a minimum our Navy must have the capability and capacity, if required, to neutralize the potential undersea threats posed by China, North Korea and Iran,

today.”⁵ ASW is a risk-prone mission area that requires improvement as arguably the consequences outweigh the means required to mitigate the risk.

The expected future operating environment, threat and level of risk all contribute to the complexity of the current ASW problem, and the problem must be addressed.

Analysis – Operational Art: Finding the solution from within.

A regressive approach toward deconstructing the complex problem of ASW is offered with the intention of identifying seams and uncovering possible solutions. ASW is both an art and science. Potential improvements will stem from both areas. Where technology and force structure contribute to define the combat potential of the force, operational art defines the force’s true combat power and worth. Viewing ASW from a JFC’s perspective, a number of significant ASW challenge areas and potential improvement measures can be identified by critically analyzing each of the six operational functions common to joint operations.

Operational Command and Control – Command and control of any war-fighting task at the operational level is demanding, and joint ASW is among the toughest. Unity of command is critical to ensuring unity of effort among the numerous joint and multinational assets arrayed to achieve a common operational ASW objective. The command structure must ensure that centralized direction and decentralized execution exist to enable subordinate commanders and prosecuting units to converge upon and achieve the desired objective. Often times, complex command structures and unclear guidance regarding the operational or tactical objectives lead to ineffective prosecution. Coordinating the ASW effort requires that multiple space, air, sea and subsurface assets are effectively controlled despite the challenges and physical limitations of the disparate mediums involved (above, on and below the surface). Maintaining a common operating picture is extremely challenging but absolutely

⁵ Benedict, “Unraveling and Revitalization of U.S. Navy Antisubmarine Warfare,” 4.

necessary. Friendly submarines face the greatest challenge – do they surface periodically and lose their stealth advantage to update the picture? Is this a technology or operational issue or both? Managing the information required to provide a shared frame of reference is critical to decision makers and prosecution assets alike.

The key to effective OP C2 is promoting and empowering decentralized decision-making through the dissemination of clear guidance and intent – enabled by responsive and reliable situational understanding and communications among all participating forces. What is the purpose of the mission – to destroy a threat submarine or to simply perform area denial? Clear definition of the roles and responsibilities throughout the operational chain-of-command is vital to ensuring the required unity of effort. The Navy continues to develop a theater ASW commander (TASWC) concept. The TASWC provides theater expertise, continuity of effort and a consistent C2 structure. A standardized approach to the TASWC construct based on best practices and lessons learned from theater ASW exercises must be applied across the five operational fleets. A network-centric enabled architecture (FORCEnet) will support the future command and control requirements and provide the means for the common operating picture necessary to field a rapid, agile, flexible and effective ASW response. “All of these efforts [joint ASW] will be coordinated by FORCEnet, which integrates warriors, sensors, platforms and weapons into a networked, distributed combat force applicable across all levels of ASW.”⁶ A more robust and capable information architecture provides the ability to better perform the mission with considerably fewer assets, a key consideration in a resource challenged environment.

Operational Intelligence – Denying the initiative to an enemy with a formidable submarine capability is central to a JFC’s ASW effort. Knowing the location of a threat submarine(s)

⁶ Office of the Chief of Naval Operations, *Changing the Calculus*, 25.

and the enemy's probable intent are critical information requirements for a JFC, especially in operational phases zero through two when an unlocated submarine threat provides an enemy with a considerable asymmetric advantage in operational factors time, space and force. The most critical phase of ASW, and arguably an area in which the United States is weak, is the ability to detect a submerged submarine. The performance of effective sensor cueing and resultant large area search is central to a successful ASW effort. The undetected submarine maintains the advantage in a contested littoral and prevents friendly maritime assets from performing their intended missions.

The United States must take full advantage of its intelligence collection and production superiority to deny a potential threat the ability to gain the operational advantage. A TASWC must use all available intelligence, surveillance and reconnaissance (ISR) sources (national to local) available in each operational phase to assess adequately and ascertain enemy submarine capabilities, tendencies, location and intent. It is imperative that all sensors – space, air, surface and subsurface – are tasked and used to possess unequivocally the situational understanding advantage. With reliable indications and warning that a submarine is expected to submerge, responsive cueing must be provided to enable the employment of detection sensors. This is the area where technology infusion and innovative systems introduction are most needed to provide an effective (and mobile) detection capability. If it is determined that contact be maintained, use of undersea surveillance system assets – such as the Advanced Deployable System (ADS) currently in development – and dedicated, capable area search assets must be rapidly employed. It is in this phase where the “art” of ASW is most critical. If the enemy's probable course of action can be determined, then the most probable search area can be determined and isolated to maximize the potential

for detection. “As both World War II and the Cold War illustrate, getting healthy in antisubmarine warfare depends more on sensor (and cuing) hardware and software than on numbers of ASW-capable platforms...large force levels cannot overcome poor sensor technology, surveillance, or cuing; weaknesses there are potentially fatal.”⁷

Also, understanding the undersea environment and oceanographic trends, especially in local waters better understood by an enemy, is necessary to a successful ASW mission. Security cooperation and shaping activities provide an opportunity to collect waterspace information necessary to understand and fully prepare for a potential joint operating environment. Mapping the area, gathering data to determine environmental trends and sharing information across the fleet and with likely local partners will accomplish this necessary task. A key enabler in previous periods of strong ASW performance was the employment of analysts and operators that performed dedicated intelligence and environmental exploitation functions. The successful utilization of information gathered on intended German U-boat employment using the ULTRA code breaking system and HF/DF intercepts was instrumental in the allies turning the tide of maritime dominance in the Atlantic Theater during World War Two (WWII). Hopefully a generation of experts has not been lost due to underemployment of current operators, and preparation of future operators throughout the past twenty years. These artisans require seasoning to become truly valuable, and each TASWC requires their expertise.

Operational Movement and Maneuver – Loss of the ability to employ naval combatant forces and allow for free movement of logistics vessels would paralyze a JFC’s ability to operate on desired terms. In order to gain the advantage, effective ASW must be performed to allow for safe passage and operation of maritime assets to meet orderly operational

⁷ Benedict, “Unraveling and Revitalization of U.S. Navy Antisubmarine Warfare,” 7.

sequence and synchronization objectives. “The Navy’s transformation strategy will exploit these tactical advantages [networked data, collaborative planning and rapid engagement] to achieve two key operational-level objectives:

- Hold enemy forces at risk: Deny enemy submarines and offensive capability by maintaining the ability to destroy them, if and when required, at a time and place of our choosing
- Secure Friendly Maneuver Area: Drive away or destroy enemy submarines, thereby protecting Allied maritime operating areas.”⁸

In some cases – though risky – simply avoiding a threat by combining effective maneuver with deception may be all that is necessary to be successful. The larger the operating area to conduct movement and maneuver, the more difficult the challenge for the defensive force to successfully perform ASW. One operating concept worth employing in a contested littoral would be one of mobile defense or in the words of retired Navy Captain John Morgan, “...‘moving area control.’ This would guarantee local undersea superiority or time-limited sub-free ‘havens’ in areas of current interest, rather than the regional, if not global, superiority we sought during the Cold War.”⁹ Focusing efforts from ISR to localization/attack in a smaller operating area provides a greater probability to disrupting or defeating an enemy threat. This proposed operating concept is quite logical when envisioned for the smaller littoral environment as opposed to the deep-water, more expansive areas encountered during WWII and the Cold War.

Operational Fires – Two key and interrelated components of employing operational fires per the Universal Joint Task List (UJTL) and joint doctrine are joint targeting and interdiction. When maritime freedom of action is required in a potentially contested JOA, a submarine threat should be addressed where it is most vulnerable, and must receive

⁸ Office of the Chief of Naval Operations, *Changing the Calculus*, 25.

⁹ Morgan, “Antisubmarine Warfare: A Phoenix for the Future,” 3.

accordingly a high priority in the JFC's targeting process. The joint force maritime component commander (JFMCC) must demand that submarines in known, exploitable positions – pierside or surfaced – are targeted by the most effective means available (air, surface and/or subsurface). If a submarine can successfully elude an early strike and submerge undetected, it can seriously disrupt operational sequencing and synchronization and hold at bay offensive maritime power projection assets (carrier based strike aircraft, cruise missile equipped ships and submarines...), thus greatly reducing the total capacity and effect of a JFC's available strike assets. "Interdiction is a powerful tool for JFCs. Interdiction operations are actions to divert, disrupt, delay, or destroy the enemy's military potential before it can be used effectively against friendly forces; or to otherwise meet objectives."¹⁰ From the JFC perspective, gaining the advantage and taking the initiative to interdict a submarine threat is critical to meeting operational objectives.

Operational Protection (to include Operational Logistics) – Operational protection is the crux of the ASW problem. ASW is operationally defensive. It is in this function that operating concept improvements discussed in the other operational functions are integrated to manifest the active defensive measures required to ensure assured access for use by joint forces. It is in this vein that operational logistics is nested within operational protection. Maritime superiority is required to enable the critical logistics functions of establishing the necessary support basing (sea and land) and providing threat-free sea lines of communication for maritime based supply movement. Disruption of the maritime logistics effort as a result of a submarine threat (area or chokepoint) can completely decimate the sequence and synchronization of an entire major operation. From an operational protection perspective, a successful ASW effort provides an advantage in both operational factor force (joint force

¹⁰ Chairman of the Joint Chiefs of Staff, *Joint Operations (JP) 3-0*, III-20.

assets) and space (maritime movement and maneuver space), and is critical to controlling factor time (initiative and synchronization).

Perhaps the most significant and successful ASW operating concept employed during WWII was the convoy. An asset intensive air, surface and subsurface screen provided the allied forces with the ability to protect valued maritime assets against the U-boat threat. ASW today, however, is no longer an asset intensive attempt to gain the relative advantage through attrition. In WWII, over 5000 allied air and surface vessels sank over 800 U-boats, for a ratio of 6.25:1; however, this was at the expense of the loss of 3000 surface combatant and merchant vessels.¹¹ The goal today is not to lose a single friendly or merchant ship during an operation. Enduring aspects of the convoy concept remain, but current ASW commanders rely on information superiority and methodical asset employment to protect shipping in the littoral. Furthermore, the modern solution relies on identifying and exploiting the vulnerabilities of all aspects of a threat submarine's employment – from knowing its location to rendering that particular submarine ineffective in its ability to disrupt joint force operations. Let the art drive the science to determine the appropriate force structure, technology requirements and mechanical tactics, techniques and procedures (TTP) to improve the probability of a successful outcome in an ASW mission.

Analysis – Joint war-fighting approach

ASW is a Navy core competency, but it is not a Navy only problem. Are there other than Navy only solutions? A potentially contentious issue for the functional component commanders – especially the joint force air component commander (JFACC) – is the apportionment and allocation of common-use vs. direct support assets to perform ASW, which is commonly misperceived as a Navy only issue. During JFACC controlled air

¹¹ Benedict, "Unraveling and Revitalization of U.S. Navy Antisubmarine Warfare," 7.

operations, a number of different assets from the joint air community can be utilized to perform ASW interdiction missions against a pierside or surfaced submarine. Land-based Army Air Forces contributed significantly to the ASW interdiction mission during WWII. It is realistic, however, to expect that when an undetected, submerged submarine patrols the JOA that suitably equipped Navy assets are dedicated to this critical mission, and that their availability for other common use tasking (maritime patrol aircraft or submarines for ISR roles or submarines for special operations forces insertion support for example) will be severely limited until the submarine no longer poses a threat. It would not be prudent to attempt to add specific ASW missions to assets (USAF for example) that do not possess the required systems capabilities to be effective or to expect crews that have myriad missions to perform to become competent in yet another peripheral warfare area.

A potential seam in asset employment is that multi-mission Navy platforms may be unable to defend against a multi-faceted maritime attack. These platforms may have to perform concurrently other maritime related missions in addition to ASW. Thus the potential to overwhelm vulnerable naval forces operating in the littoral is plausible. The JFMCC and JFACC must be flexible to apportion sufficient forces to handle a multi-medium coordinated strike. The JFC must look at all available assets and their ability to deliver desired effects when addressing a threat submarine in a contested littoral.

Analysis – History repeats itself

This is not the first time in history when the ASW capability of the United States has been called into question. Three periods of concern where the ASW ability of the United States was assessed as inadequate – to include a recent period from 1995-2003 – have occurred during the past 65 years, and are depicted in figure 1.

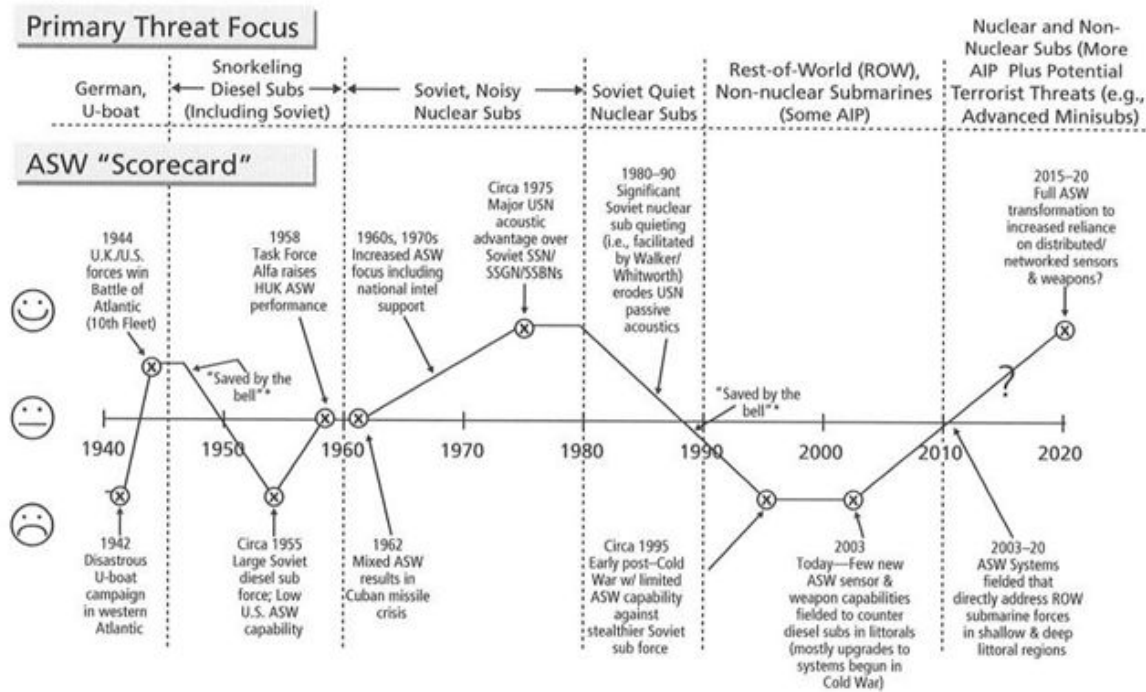


Figure 1 – ASW “Scorecard” (Reprinted from John R. Benedict, “The Unraveling and Revitalization of U.S. Navy Antisubmarine Warfare,” *Naval War College Review* 58, no. 2 [Spring 2005]: 3.)

The first period was during WWII, when the United States and allied forces initially performed dismally against the German U-boats in the Atlantic Theater of War. A revitalization of the ASW effort was due in large part to the establishment of the Tenth Fleet, “By the summer of 1943, the Navy had in place an organization under the commander of the Navy himself that concentrated all antisubmarine intelligence, the decisions of force allocation for escort and search, the control of convoys and routing, and the development of tactical doctrines for the continuing battle against the sea wolves.”¹² The efforts of the Tenth Fleet and greater numbers of allied assets employed contributed to a dramatic improvement in performance that ultimately led to the defeat of the German submarine force. The second period took place during the post-WWII years. Then Chief of Naval Operations (CNO), Admiral Arleigh Burke, “wanted to know why the Navy’s ASW effort, despite all the high

¹² Baer, *One Hundred Years of Sea Power*, 203-4.

tech, was so weak and ineffective.”¹³ He challenged the Navy to develop innovative and coordinated operating concepts to counter an improved diesel submarine threat employed by the Soviet Union. The Navy ASW capability regained equal footing with the submarine threat as evidenced by performance during the Cuban Missile Crisis, and then began a gradual improvement throughout the remainder of the Cold War. A common theme in the ASW revitalization efforts in the 1940s, 1950s and 1960s was the improvement in operational performance through a combination of innovative and refined doctrine, application of operating concepts, and training (art) in parallel with new technology introduction. Much can be learned from the successes of the Tenth Fleet and Admiral Burke, and components of these proven approaches must be considered for applicability in the current situation.

Recommendations – Enabling effective ASW to enable effective joint operations

The intent of the analysis is to show that many solutions to the ASW problem reside within the scope of a JFC. In evaluating the operational functions within the ASW context, a number of **enhanced operating concepts** were identified. Each geographic combatant commander and/or JFC operating in a JOA must develop plans that define appropriate C2 roles and means to rapidly and decisively obtain and maintain the advantage in a contested littoral. Effective C2 that enables an artful commander to exploit maneuver and time-space-force advantages improves the probability of meeting operational objectives. The United States must leverage its overwhelming ISR advantage to understand better the operating environment and the capabilities/intent of potential adversaries. Joint and multinational force employment must be optimized to improve the possibility of a desired outcome. ASW is a warfare area that is arguably better understood and performed by some small littoral

¹³ Benedict, “Unraveling and Revitalization of U.S. Navy Antisubmarine Warfare,” 3.

nation navies. U. S. ASW efforts have benefited tremendously from more frequent exercise interaction with nations that are proficient in the employment of diesel submarines. The level of commitment needs to increase even further to conduct frequent training in forward areas as part of Theater Security Cooperation Plan objectives to improve understanding of the operating environment, interoperability with the partner nations that can be expected to participate in future operations and to determine the proper C2 and assets required to guarantee decisiveness. The training will be threat representative and challenging. Our partners bring significant resources, experience and expertise to a multinational force ASW effort. The United States must continue to empower this significant feature of the “global maritime partnership initiative” to field an undefeatable force against enemies desirous of denying access and maritime freedom of action.¹⁴

It would be unrealistic to expect all necessary ASW improvements to stem from the operational functions. The JFC must be able to influence the spiral development process led by the service providers to ensure that appropriately trained forces with the most capable equipment are available for employment in the JOA. The last three CNOs proclaimed ASW as their utmost war-fighting priority. Although awareness of the issue has definitely increased, the level of commitment and effort required to meet defined expectations continues to appear insufficient – but improving. Both JFCs and resource sponsors must understand the risk assumed in not addressing an ASW capability shortfall, and take the appropriate actions to foster the required improvements. The establishment of NMAWC – the center of undersea warfare excellence, much like the Tenth Fleet in WWII – has put the joint ASW community on a path of optimistic and realistic recovery. Expectations are that

¹⁴ Allen, Conway and Roughead, “A Cooperative Strategy for 21st Century Seapower,” 16.

this organization can achieve a similar transformation of the ASW community that the Naval Strike and Air Warfare Center (NSAWC) has had on the strike and air combat communities.

As the commander responsible for operational success, the **JFC must demand and drive future ASW improvement.** NMAWC has engaged on an aggressive campaign to restructure and improve training from the unit level all the way through to the theater level. Lessons learned by a JFC in one theater must be provided to a central repository to make available improved operating concepts to all ASW commanders and units. Honest training assessment must be provided and adopted to drive real and lasting improvement; current trends would lead one to believe that this is not always the case. ASW is an extremely artful military discipline that is grounded in history and possesses many enduring concepts independent of the technology of the assets employed. Appropriate documentation must be current and accessible throughout the joint community. Senior commanders and tactical operators alike need to understand how to integrate the six operational functions to achieve a unified effort to meet ASW objectives, and the input should stem from the actual experience of JFCs, subordinate commanders and unit operators. JFC input is critical to ensuring the process supports the development of a force that will ensure the United States is the world's preeminent ASW team.

Conclusion

“The closer U.S. military forces get to enemy held territory, the more competitive the enemy will be...These facts combine to create a contested zone—arenas of conventional combat where weak adversaries have a good chance of doing real damage to U.S. forces.”¹⁵ It must be conceded that ASW is an exploitable seam in the current employment of American joint forces.

¹⁵ Posen, “Command of the Commons,” 22.

The Navy is steadily progressing from its deteriorated state of ASW. Through the JFCs, their designated ASW commanders and NMAWC, the United States must regain command of the operational art, fusing innovative and efficient operating concepts with effective technology to put to sea an overwhelming ASW capability.

Maritime assured access is critical to national security, and the United States must not wait for an adversary to strike a vulnerable yet valuable naval combatant or logistics vessel – it is time to regain the ASW advantage required truly to command and ensure desired use of the maritime commons.

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