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14. ABSTRACT <i>The Kilo Submarine: America's Newest Weapon in the South China Sea.</i> Recent decades have seen a boom in the number of nations acquiring submarines throughout the world. In Southeast Asia, Vietnam became the latest to join this fraternity by signing a deal in 2009 to acquire six 636M-class Kilo Submarines from Russia. China and India have also acquired Kilo-class submarines from Russia and have operated them with fairly good success. However, with the current geopolitical situation with China and with India's Navy dealing with internal issues, it is argued that they do not serve as adequate sources for assistance in building up Vietnam's juvenile submarine force. It is also argued that Russian will only provide limited training and support associated with the purchase of the submarines. To this end, the paper argues that the opportunity is prime for the United States to step in and establish relations with the Vietnamese submarine force and induce them to be our undersea partner in the South China Sea.					
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The Kilo Submarine: America's Newest Weapon in the South China Sea

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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15 May 2014

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Abstract

The Kilo Submarine: America's Newest Weapon in the South China Sea. Recent decades have seen a boom in the number of nations acquiring submarines throughout the world. In Southeast Asia, Vietnam became the latest to join this fraternity by signing a deal in 2009 to acquire six 636M-class Kilo Submarines from Russia. China and India have also acquired Kilo-class submarines from Russia and have operated them with fairly good success. However, with the current geopolitical situation with China and with India's Navy dealing with internal issues, it is argued that they do not serve as adequate sources for assistance in building up Vietnam's juvenile submarine force. It is also argued that Russian will only provide limited training and support associated with the purchase of the submarines. To this end, the paper argues that the opportunity is prime for the United States to step in and establish relations with the Vietnamese submarine force and induce them to be our undersea partner in the South China Sea.

INTRODUCTION

Since the advent of the modern-day submarine with the USS Holland (SS-1) in 1900, many navies throughout the world have taken steps to acquire and develop their own submarine forces. The submarine platform is capable of taking advantage of the difficult and vastly available environment of the undersea domain. Recently, nations have become more conscious of the significant advantages gained with possessing a submarine force. As a direct result of this fact, as Kyle Mizokami of the *U.S. Naval Institute* states in his article, “Asia is in the midst of a submarine buying spree.”¹

In Southeast Asia, Vietnam is the latest nation to join the “submarine club” with the recent purchase of six Russian built project 636M-class Kilo submarines.² Establishment of a skilled and capable submarine force requires in-depth experience and knowledge in submarine operations and resources and technical ability to establish and maintain their fleets. Based on the juvenile state of their submarine force, Vietnam lacks these fundamental baselines and must rely on a nation willing to assist them in their endeavors. The current undeveloped state of the Vietnamese Navy’s submarine force presents the Commander of the U. S. Pacific Fleet with an opportunity that he should take advantage of, reaching out to the Vietnamese Navy to establish a capable undersea partner in the South China Sea. This action will result in increasing partner capacities and assist the U.S. towards achieving the “1000-ship Navy” goal that Admiral Mullen set out to accomplish in 2005.³

¹ Kyle Mizokami, “Asia’s Submarine Race”, *United States Naval Institute News*, 13 November 2013. Accessed 17 March 2014. <http://news.usni.org/2013/11/13/asias-submarine-race>.

² Koh Swee Lean Collin, “Submarines in Southeast Asia: Proliferation, Not a Race,” *The Diplomat*, 30 January 2014. Accessed 17 March 2014. <http://thediplomat.com/2014/01/submarines-in-southeast-asia-proliferation-not-a-race>.

³ Admiral Michael Mullen, “Seventeenth International Seapower Symposium,” (address, Newport, RI, 21 September 2005).

China and India are close neighbors and rivals that also operate the same 636M and similar 877M-Kilo class submarines acquired from Russia. However, geopolitical sensitivities with China and with the present instability of the Indian Navy, it is assumed that Vietnam will not pursue relationships to strengthen their submarine force with these two countries. As part of the purchase contract, Russia will provide crew training and construction of a maintenance facility.⁴ Yet, support in addition to what will be provided by Russia in the purchase agreement will be required in order for the Vietnamese Navy's submarine force to achieve significant status in the region.

VIETNAM-CHINA RELATIONS

Vietnam and China have a long and contentious history of conflict and border disputes. In recent history, since the end of the Sino-Vietnamese War in 1979, during which tens of thousands of soldiers and civilians from both sides perished, Vietnam and China have formally resolved their land border disputes by signing a treaty in December 1999. However, clashes between the two nations continue with territorial disputes over the Paracel and Spratley Islands in the South China Sea. Commander Christopher Bailey notes in this Naval War College research that, since 1988, there have been six significant naval engagements and skirmishes between the two countries over the Paracels and the Spratleys.⁵ Ben Blanchard and John Ruwitch of *Reuters* comment "the biggest military skirmishes occurred in 1974, when China attacked and captured the western Paracels from Vietnam, and in 1988, when China and Vietnam fought a brief naval battle near the Spratly reefs, in which more than 70

⁴ Carlyle A. Thayer, "Russian Subs in Vietnam," *United States Naval Institute News*, 20 August 2012. Accessed 25 April 2014. <http://news.usni.org/2012/08/20/russian-subs-vietnam>.

⁵ Commander Christopher Bailey, "6Kilos: Can Vietnamese Submarines help reclaim the South China Sea?" (Research paper, U.S. Naval War College, Joint Military Operations, Newport, RI, 2013), 3-4.

Vietnamese sailors died.”⁶ Today, heightened tensions still persist as evidenced by the recent May 7th ramming and fire hose incident over a Chinese oil rig positioned inside the Vietnamese exclusive economic zone (EEZ).⁷

The Chinese People’s Liberation Army, Navy (PLAN) operates ten project 636 and 636M-class Kilo submarines acquired from Russia.⁸ These submarines have been active members of their Navy since 1997. With the delivery of the Kilo submarines, they incorporated the Kilo’s technical characteristics into their indigenously designed Yuan-class submarines.⁹ The PLAN has the experience, know-how and a solid proven record of successful submarine operations.

Nevertheless, based on the on-going territorial disputes and the geopolitical situation between the two nations, it is highly unlikely that the two rival nations will pursue any sort of agreement or cooperation between their submarine forces. China should have no desire to assist their competing neighbor who may eventually use these new platforms as weapons against their submarines and surface combatants, including the Liaoning CV-16 aircraft carrier.

UNSTABLE INDIAN NAVY

The Indian Navy operates fourteen 877 EKM-class Kilo submarines acquired from Russia. The 877 EKM variant is the predecessor to the more advanced 636M-class that Vietnam recently purchased. India’s submarine fleet is one of the largest in the region and

⁶ Ben Blanchard and John Ruwitch, “FACTBOX-The South China Sea’s Disputed maritime Borders,” *Reuters*, 6 October 2010. Accessed 26 April 2014. <http://www.reuters.com/article/2010/10/06/china-vietnam-idAFSGE6950BX20101006>.

⁷ Gerry Mullandy and David Barboza, “Vietnamese Navy Confronts Chinese Ships in Oil Rig Dispute,” *The New York Times*, 7 May 2014. Accessed 7 May 2014. <http://www.nytimes.com/2014/05/08/world/asia/philippines-detains-crew-of-chinese-fishing-vessel.html>.

⁸ Difference between the 636 and 636M class is the ability to carry anti-ship cruise missiles. The “M” class has this capability.

⁹ Global Security, “Yuan Type 039A/Type 041,” *Global Security.org*, last modified 10 September 2013, Accessed 26 April 2014. <http://www.globalsecurity.org/military/world/china/yuan.htm>.

India is the largest importer of arms in the world. Their figures were almost three times greater than those of China and Pakistan combined.¹⁰ During the period between 2009-2013, India's largest supplier of military goods was Russia.¹¹

Over the last twelve months, the Indian Navy has experienced ten catastrophic accidents. The accidents range from ships running aground, collisions, gas leaks to explosions on submarines that have accounted for the death of nearly twenty sailors.¹² Former chief of the Indian Navy, Admiral Arun Prakash writes, "Of the 10 accidents cited, two, involving loss of life on board submarines, are indeed grave and warrant a thorough probe."¹³ In March 2014, following the last submarine accident which claimed two Indian submarine officers, the Chief of the Navy, Admiral D.K. Joshi resigned stating "moral responsibility" for the accidents.¹⁴ Hence, the Indian navy operated without a leader for close to fifty days until the a new chief, Admiral Rabinder Kumar Dhowan was appointed on April 17, 2014.¹⁵

The Indian Navy's reputation and reliability have taken significant blows. With these events, their credibility has been severely reduced if not completely lost. Consequently, it is assumed that the Indian Navy is not in any condition to offer assistance to the Vietnamese submarine force.

SUBMARINE PURCHASE AGREEMENT

¹⁰ Yasir Hussain, "Indian Navy's Dream Turned Nightmare", *Eurasia Review*, 23 April 2014, Accessed 26 April 2014. <http://www.eurasiareview.com/23042014-inidan-navys-dream-turned-nightmare-oped/>.

¹¹ Ibid.

¹² Ibid.

¹³ Arun Prakash, *Muddy Waters, Navy Blues, The Times of India*, March 6, 2014. <http://timesofindia.indiatimes.com/home/opinion/edit-page/muddy-waters-navy-blues/articleshow/>.

¹⁴ Hussain, "Indian Navy's Dream Turned Nightmare", *Eurasia Review*, 23 April 2014, Accessed 26 April 2014. <http://www.eurasiareview.com/23042014-inidan-navys-dream-turned-nightmare-oped/>.

¹⁵ Vivek Raghuvanshi, "Indian Navy Gets New Chief After Days of Indecision," *Defense News*, 17 April 2014. Accessed 26 April 2014. <http://www.defensenews.com/article/20140417/defreg/304170029/indian-navy-gets-new-chief-after-days-indecision>.

Vietnam began to express interest in building a submarine fleet as early as the 1980s. Vietnam desired a submarine force to deter Chinese operations in and around the contested waters in the South China Sea. After potential deals with then Soviet Union fell through, Vietnam acquired two Yugo-class midget submarines from North Korea in 1997.¹⁶ The Yugo-class is an antiquated platform only capable of providing limited coastal operations and did not fit Vietnam's needs. However, their search ended when a \$3 billion deal was reached with Russia in December 2009 to purchase six 636M-class Kilo submarines.¹⁷

The 636M-class Kilo submarine is one of the quietest submarines in the world. The West coined the term "black hole" for the 636M-class based on its stealth.¹⁸ This variant includes more advanced stealth, greater range of operations and the ability to strike submerged, surface and land targets. *Globalsecurity* reports "the Project 636 class boats displace 3100 tons, reach speeds of 20 knots, can dive to 300 meters and carry crews of 52 people . . . features 533-millimeter torpedo tubes and are armed with torpedos, mines, and Kalibr 3M54E (NATO SS-N-27 Sizzler) cruise missile."¹⁹ The SS-N-27 Sizzler is a highly capable Russian anti-ship cruise missile (ASCM) with a range of approximately 220 kilometers and is assessed by the technical community to be able to cause considerable damage to an aircraft carrier.

From 2014 to 2016, six submarines will be delivered to Vietnam. The delivery includes individual crew training and construction of a maintenance facility and possible

¹⁶ Carlyle A. Thayer, "Russian Subs in Vietnam," *United States Naval Institute News*, 20 August 2012. Accessed 25 April 2014. <http://news.usni.org/2012/08/20/russian-subs-vietnam>.

¹⁷ Carl Thayer, "With Russia's Help, Vietnam Adopts A2/AD Strategy," *The Diplomat*, 8 October 2013. Accessed 25 April 2014. <http://thediplomat.com/2013/10/with-russias-help-vietnam-adopts-a2ad-strategy>.

¹⁸ Carlyle A. Thayer, "Russian Subs in Vietnam," *United States Naval Institute News*, 20 August 2012. Accessed 25 April 2014. <http://news.usni.org/2012/08/20/russian-subs-vietnam>.

¹⁹ Global Security, "Project 877 Paltus Project 636 Varshavyanka Kilo class Diesel-Electric Torpedo Submarine", *Globalsecurity.org*, last modified February 5, 2014, <http://www.globalsecurity.org/military/world/russia/877.htm>.

assistance in building a submarine base at Cam Ranh Bay, Vietnam.²⁰ As of May 2014, two units have been delivered, HQ-182 Ha Noi and HQ-183 Ho Chi Minh City, with the third unit, HQ-184 Hai Phong, scheduled for delivery in the fall of 2014.

In 2013, Russia and Vietnam signed a memorandum of understanding (MOU) on naval cooperation and also signed a protocol to cooperate in military technologies until 2020.²¹ However, it is argued that these agreements only meet the need to upgrade systems and technologies of the new submarines. Crew training by Russia is complete when the submarine is delivered. To establish a skilled force, training needs to occur continuously and there needs to exist a cadre of skilled and experienced personnel to train and certify the crews. Therefore, arrangements surrounding the purchase of the new submarines are insufficient to allow the Vietnamese submarine force to become skilled and capable at operating their submarines to their fullest extent. At the current status quo, Carl Thayer of the *United States Naval Institute* reports that “industry analysts predict that Vietnam will fall somewhere between Singapore and Indonesia in its ability to absorb the Kilos and produce effective capability.”²²

WHAT THE SUBMARINE BRINGS TO THE FIGHT

After World War II, when asked about the different weapons used to win the war, Admiral Halsey answered, “If I had to give credit to the instruments and machines that won us the war in the Pacific, I would rate them in this order: submarines first, radar second,

²⁰ Carlyle A. Thayer, “Russian Subs in Vietnam,” *United States Naval Institute News*, 20 August 2012. Accessed 26 April 2014. <http://news.usni.org/2012/08/20/russian-subs-vietnam>.

²¹ Carl Thayer, “With Russia’s Help, Vietnam Adopts A2/AD Strategy,” *The Diplomat*, 8 October 2013. Accessed 25 April 2014. <http://thediplomat.com/2013/10/with-russias-help-vietnam-adopts-a2ad-strategy>.

²² Carlyle A. Thayer, “Russian Subs in Vietnam,” *United States Naval Institute News*, 20 August 2012. Accessed 26 April 2014. <http://news.usni.org/2012/08/20/russian-subs-vietnam>. Based on my experience, I rank Singapore as a second tier and Indonesia as a third tier Submarine force in the Asia-Pacific region. First tier forces include Japan, Republic of Korea and People’s Republic of China.

planes third, bulldozers fourth.”²³ Since their significant contribution in World War II, the importance of the submarine has only increased over the last several decades. The Vietnamese Navy has realized that the submarine can be a capable weapon when used to execute a sea denial role. To understand this concept, brief explanation of sea control and sea denial will be presented. With these concepts, what submarines bring to the fight will be discussed.

The terminology of sea control is recent to the mid-twentieth century, but the origins date back to the sixteenth century to the concept of “command of the sea”.²⁴ Professor of Joint Military Operations at the U.S. Naval War College, Dr. Milan Vego states that “command of the sea meant complete, absolute and permanent control of a specific part of the ocean or sea area, thereby ensuring one’s free use of sea communications and full denial of it to the adversary”.²⁵ However, with advancement in warfighting technologies in the early twentieth century, especially with the discovery of flight and submarines, a paradigm shift occurred to a new concept of sea control.

Airplanes and submarines were the greatest deterrents to the concept of command of the sea. Aerial strike capability and torpedo threats from the undersea present a new threat which goes against a navy’s ability to completely command the sea. Geoffrey Till, the director of the Corbett Centre for Maritime Policy Studies in London notes “. . . many analysts concluded that recent developments were making it more difficult to secure high degrees of command of the sea.”²⁶ “In the aftermath of World War I,” Vego writes, “the term command

²³ Admiral William Halsey, *Admiral Halsey's Story* (New York: McGraw-Hill, 1947), 69.

²⁴ Milan Vego, *Operational Warfare at Sea: Theory and Practice* (London and New York: Routledge, 2009), 24.

²⁵ Ibid, 24.

²⁶ Geoffrey Till, *Seapower: A Guide for the Twenty-First Century* (London and New York: Routledge, 2009), 151.

of the sea was gradually replaced in the West by the term sea control. . .”²⁷ The new sea control concept implies that a navy solely controls a specific localized area in the sea to be exploited for their advantage for a period of time. Former head of U.S. Submarine Force and the current Director of Naval Nuclear Propulsion program, Admiral John Richardson defines sea control as having “. . .the ability of one state to employ the sea for its purposes while denying adversaries the ability to do the same.”²⁸

The state with the greater combat power typically executes the concept of sea control against a lesser, inferior force. If the side that is inferior in combat power desires to practice sea control over the greater force, this concept is defined as sea denial. Admiral Richardson provides the definition of sea denial as “a subset of sea control that usually is limited to the ability to deny an adversary use of the sea, but may not include creating the ability to make full use of the sea.”²⁹ Thus, the direct opposite effort of sea control is sea denial. Till uses the terms “alternative” and “complement” in his explanation of sea denial as it relates to sea control.³⁰ Therefore, typically being the easier of the two concepts to enforce, smaller nations with inferior forces are more capable of executing this task against the larger force which is attempting to exploit an area of concern. Thus, more and more smaller nations are investing in submarines to employ sea denial tactics instead of increasing their defense budgets to build larger navies.

²⁷ Vego, *Operational Warfare at Sea: Theory and Practice* (London and New York, 2009), 25.

²⁸ Admiral John Richardson, *Undersea Warfighting* (Commander United States Submarine Forces, 2011), 12.

²⁹ Ibid, 12.

³⁰ Till, *Seapower*, 154.

Admiral Richardson's *Undersea Warfighting* lists six different advantages gained by leveraging the undersea environment.³¹ Of the six, three advantages (surprise, survivability and operational ambiguity) serve the way to explain effectiveness of submarines.³²

The quiet nature of submarines and the hard problem of finding and attacking them, anti-submarine warfare (ASW), allows the submarine to operate with surprise. *Undersea Warfighting* discusses three advantages gained with surprising the enemy as the ability to choose the time of the attack to meet their desires, attacking the enemy when they are not at their full strength and the ability to insert chaos to wreak havoc on the enemy.³³ To be able to surprise the larger, superior force with the employment of submarines' surprise permits a single submarine to inflict effects attributable to multiple platforms.

In addition, Admiral Richardson argues that another advantage of submarine platform is its survivability. He notes "survivability is the combined result of reduced detectability (stealth) and operations in broad ocean areas, placing a huge geographic burden on the searcher."³⁴ Because the submarine is hard to find, it places the attacking forces in a much harder position requiring them to employ more time and resources towards the threat. In turn, searching and attacking in the wrong place while the submarine is free to execute its tasking. Again, this presents a strong case for the submarine being a viable sea denial platform.

Lastly, and arguably the most important advantage of the submarine platform is introduced by the concept of "operational ambiguity."³⁵ Admiral Richardson suggests "the fact that the ocean is opaque makes it difficult to know what is going on underwater, and this

³¹ Admiral Richardson, *Undersea Warfighting* (Commander United States Submarine Forces, 2011), 8-10.

³² Ibid, 8-10.

³³ Ibid, 9-10.

³⁴ Ibid, 10.

³⁵ Ibid, 10.

obvious fact has profound implications that distinguish the undersea domain from the air or sea surface.”³⁶ This concept implies that the enemy will never be certain as to where the submarine is operating, how many are operating, what its task is or even if there is a submarine in the water or not. Therefore, these attributes of the submarine makes Vietnam’s acquisition of a submarine force a logical and important step in assuring their future security.

U.S.-VIETNAM RELATIONS

Since the end of the Vietnam War in 1975, relationships between Vietnam and the U.S. have come a long ways. Formal relations between the two countries developed in June of 1995 after the U.S. lifted an economic embargo against Vietnam.³⁷ From then on, relations with Vietnam have matured into multiple formal trade and economic agreements and a military memorandum of understanding (MOU) on bilateral defense cooperation.³⁸ The MOU, signed in 2011, highlights five areas to expand cooperation: maritime security, search and rescue, United Nations Peacekeeping Operations (UNPKO), humanitarian and disaster relief (HADR) and collaboration between defense universities and research institutes.³⁹ Though significant progress has been made up to this point, some obstacles still need to be overcome in order to stabilize the maturing relationship between the nations.

Based on the history of war between the U.S. and Vietnam, limitations to the types of military engagements remain. The Vietnamese Ministry of Defense questions the strategic objective of the U.S. *The Heritage Foundation* article from 2012 points out “. . . the relationship between the U.S. Department of Defense and Vietnam’s Ministry of Defense. . .

³⁶ Admiral Richardson, *Undersea Warfighting* (Commander United States Submarine Forces, 2011), 10.

³⁷ Library of Congress – Federal Research Division, *Country Profile: Vietnam*, (2005), 3.

³⁸ Colonel William Jordan et al., “U.S.-Vietnam Defense Relations: Investing in Strategic Alignment.” *The Heritage Foundation*, 18 July 2012, accessed 4 May 2014, <http://www.heritage.org/research/reports/2012/07/us-vietnam-defense-relations-investing-in-strategic-alignment>.

³⁹ *Ibid*, 8.

continue to have doubts about the other's long-term strategic intentions.”⁴⁰ With these limitation, during the early 2000s, the Vietnamese Ministry of Defense did not agree to any bi-lateral military engagements during which armed troops operated together on Vietnamese soil.⁴¹ However, the article goes on to state that Vietnam began to see “benefits that the U.S.-Vietnam relationship could offer a modernizing Vietnamese military.”⁴² In 2003, the U.S. Navy was allowed to conduct its first Vietnamese port call and as Vietnam became more comfortable with the increasing engagements, new relationships and opportunities for bi-lateral military-to-military cooperation began to grow.

As of 2014, over fifteen years of “mil-to-mil” cooperation have occurred. There have been multiple senior State Department, Defense Department and even Presidential level staff talks. Over this time, the number of port visits have increased to greater than the limit of one per year (set by the Vietnamese Defense Ministry in 2007). Additionally, since 2011 multiple Vietnamese officers visit the U.S. War Colleges under the International Military Education and Training (IMET) program. Three U.S.-Vietnam Defense Policy Dialogues have taken place between USPACOM and the Vietnamese Defense Ministry.⁴³ *The Heritage Foundation* concludes that “Beijing's efforts to prevent what it portrays as Washington's “containment” of China have actually compelled Vietnam to enter into a closer relationship with the U.S., especially in the realm of defense and security.”⁴⁴ Looking ahead, the future looks bright for extending the range of security cooperation engagement between the U.S. and Vietnam.

⁴⁰ Colonel William Jordan et al., “U.S.-Vietnam Defense Relations: Investing in Strategic Alignment.” *The Heritage Foundation*, 18 July 2012, accessed 4 May 2014, <http://www.heritage.org/research/reports/2012/07/us-vietnam-defense-relations-investing-in-strategic-alignment>. 2.

⁴¹ Ibid, 5.

⁴² Ibid, 5.

⁴³ Ibid, 8.

⁴⁴ Ibid, 9.

ENDS, WAYS, MEANS

The preceding pages have attempted to describe the operational environment surrounding the thesis of this research. With the stage set, an “ends, ways, means” approach will be utilized to argue how and why the Commander of U.S. Pacific Fleet and his staff should move towards establishing Vietnam’s submarine force as an undersea partner in the South China Sea. The “ends” will define the operational objective that should be accomplished at the culmination of this effort. The “ways” are the cooperation methods that will lead to the accomplishment of the objective. The “means” are the resources that will be employed to carry out the “ways” to meet the “ends”.

With President Obama announcing America’s rebalance to the Asia-Pacific region in 2011, the Department of Defense has taken steps to shift naval forces to a 60/40 split between the Pacific and the Atlantic. During his speech at the 2014 Submarine Anniversary Ball in Pearl Harbor, Commander of U. S. Pacific Fleet, Admiral Harris commented “our Submarine Force leads our nation’s efforts as we rebalance to the Indo-Asia-Pacific, where our Navy plans to have 60 percent of the fleet by 2020. The Submarine Force has already done it!”⁴⁵ U. S. Pacific Command Strategy also calls to “strengthen alliances and partnerships”⁴⁶ With these initiatives, the consolidated end result that should be pursued is a partner Vietnamese submarine force which is capable of conducting defensive and offensive operations. Either unilaterally, bi-laterally with the U. S. or as a combined force with other partner nations, the Vietnamese Navy can help extinguish hostile acts presented by threatening state or non-state actors. This end result will provide PACFLT with additional

⁴⁵ Admiral Harry Harris, “114th United States Pacific Fleet Submarine Force Anniversary Ball,” (address, Pearl Harbor, HI, 12 April 2014).

⁴⁶ United States Pacific Command, “USPACOM Strategy 2013”, accessed 19 March 2014, <http://www.pacom.mil/about-uspacom/2013-uspacom-strategy.shtml>.

options and forces to employ in a possible conflict in the region and also cause the PRC to reassess their objectives in the South China Sea. The end result supports one of the Department of Defense's Air-Sea Battle Concept examples of "conducting engagement activities to build conceptual alignment and partner capacity and to strengthen relationships to assure access."⁴⁷

The "ways" to meet the objective is a phased approach that should occur over the next several years. As the U.S. Seventh Fleet assets just completed the fifth iteration of non-combat joint exercises in April, the U.S. submarine force remained on the sidelines.⁴⁸ With no relations established between the two submarine forces, the phased approach should begin with staff talks to discuss submarine safety topics followed by an agreement to execute a series of basic submarine exercises.

Submarining requires two basic foundations for prolonged, cooperative and safe submerged operations. The first foundation is the establishment of a submarine rescue program and the second is the safe de-conflicted coordination of submerged operations, known as prevention of mutual interference. In the Spring 2013 issue of *Undersea Warfare*, Rear Admiral Phillip Sawyer, Commander Submarine Group Seven, commented Asia's submarine forces "cooperate with submarine forces throughout the region in two vital areas-submarine escape and rescue and managing safe submarine operations in our shared waterspace."⁴⁹ These two foundational bases will allow the two forces to start the dialog concerning the most fundamental and important aspects of submarine operations.

⁴⁷ U.S. Department of Defense. "Air-Sea Battle: Service Collaboration to Address Anti-Access & Area Denial Challenges." May 2013.

⁴⁸ Bloomberg, "U.S.-Vietnam Naval Exercise Begin Amid Sea Tensions," *Bloomberg*. 8 April 2014. Accessed 4 May 2014. <http://www.bloomberg.com/news/print/2014-04-07/u-s-vietnam-naval-exercise-begin-amid-se-asian-tension.html>.

⁴⁹ Admiral Phillip Sawyer, "Working with our Asia-Pacific Submarine Partners", *Undersea Warfare*, no. 50 (2013): 4.

Each year, Asia-Pacific submarine forces unite to hold discussions regarding submarine force “technologies, procedures, and lessons learned” at the Asia Pacific Submarine Conference (APSC).⁵⁰ The conference discusses various topics, but typically focuses on the aspect of submarine safety, escape and rescue procedures. After the 2013 conference, during which Vietnam represented one of the twenty-two attending nations, the Vietnam and Singapore Navies signed a memorandum of agreement (MOA) for submarine rescue operations. The MOA grants the Vietnamese Navy access to the Singaporean submarine rescue vessel, MV Swift Rescue and other resources if required during a submarine casualty.⁵¹ This action marks Vietnam’s interest in establishing safe submarine operations. The next step would be to pursue an agreement with the U. S. in order to secure wider coverage provided by the U.S. submarine rescue program that is available worldwide.

The other aspect of safe submerged operations lies with the establishment of a prevention of mutual interference agreement between the two nations. In the Asia-Pacific region, the U.S. submarine force is the submarine movement advisory authority (SMAA). This program allows signed participants to have their submerged operations de-conflicted against other nations’ submerged and other “over-the-side” operations which may present hazards to submerged operations. Admiral Sawyer who is now the Commander of Submarine Forces, Pacific notes the growing concern by stating “Today, well over 200 submarines operated and maintained by more than a dozen countries deploy from ports throughout the Asia-Pacific region . . . The increasing density of submarines in the region makes our operations progressively more challenging and compels us to work together to

⁵⁰ Admiral Phillip Sawyer, “Working with our Asia-Pacific Submarine Partners”, *Undersea Warfare*, no. 50 (2013): 4.

⁵¹ Singaporean Ministry of Defense, *Republic of Singapore Navy and Vietnam People’s Navy Sign Submarine Rescue Memorandum of Agreement*, 6 September 2013. Accessed 4 May 2014.
http://www.mindef.gov.sg/imindef/press_room/official_releases/nr/2013/sep/06sep13_nr.html.

mitigate the risk.”⁵² The SMAA agreement is operated with a ‘honest broker’ policy by the U.S., thus each nation’s sensitive submarine movement information is kept restricted from other nations. Vietnam should have a vested interest in establishing this agreement since the South China Sea is a hotspot of submerged operations.

The APSC location rotates throughout the region every year. Japan hosted the conference in 2013, while the Republic of Korea hosted it in 2012. With the conference comes the uniting of the heads of each country’s submarine force. However, due to budget constraints, many nations are only able to provide their heads and possibly one additional staff member to participate in the conference. Although promising, the conference does not allow staff members from different nations to get together and dedicate personnel and resources to discuss topics of interest. Therefore, the U.S. and the Vietnamese submarine leaders need to break ground and conduct a full-fledged staff talk engagement between the two forces. Commander, Submarine Forces Pacific should be tasked by PACFLT to reach out to the head of the Vietnamese submarine force to conduct these staff talks. The first talks should focus on establishing working relationships between the two forces and signing of a submarine rescue MOA and the SMAA agreement. These two actions will develop a foundation for further expanded cooperation. Once established, the forces should establish an agreement to hold future talks semi-annually or on an annual basis. The location of these talks should alternate with each iteration and should serve to enrich mutual respect, cultural exchange and build lasting relations. Talks should also focus on improving capabilities of the Vietnamese submarine force. Foreign military sales (FMS) program should be discussed to offer unclassified basic submarine training to further develop their submarine force (such

⁵² Admiral Phillip Sawyer, “Working with our Asia-Pacific Submarine Partners”, *Undersea Warfare*, no. 50 (2013): 4.

as fire-fighting, flooding and damage control). These types of staff talks already occur in the Pacific with our partner and ally nations of Japan, Republic of Korea, Malaysia, Indonesia, Singapore and Thailand.

After the first staff talks have occurred, arrangements should be made to progress relations to include future exercises. Using the crawl, walk, run method, the first series should start with submarine rescue table top exercises. These evolutions will foster opportunities for command leadership and working level discussions regarding the most important submarine safety operations. Future events should be conducted with Vietnamese Navy surface and aerial ASW platforms against a U.S. submarine in local Vietnamese waters. The exercises should be based on the unclassified NATO Multinational Submarine and ASW Exercise Manual (MXP-1). This will alleviate any concerns regarding disclosure of sensitive tactics, techniques or procedures (TTPs). The exercise should include port calls, ship tours and possible rider exchanges. The inport phases should include a pre-sail conference and a post-exercise hotwash and after action report. This goes beyond the level of complexity of a PASSEX (passing exercises of opportunity) which is what was recommended in *The Heritage Foundation* article.⁵³ This is a more aggressive approach and it will likely take years of cooperation to achieve, but should be the desired end result. A fine example is the successful Cooperation Afloat Readiness and Training (CARAT) series of exercises between U.S. Pacific Fleet and Southeast Asian nations that have been occurring since 1995. Annual, semi-annual and even quarterly exercises occur with every submarine

⁵³ Colonel William Jordan et al., "U.S.-Vietnam Defense Relations: Investing in Strategic Alignment." *The Heritage Foundation*, 18 July 2012, accessed 4 May 2014, <http://www.heritage.org/research/reports/2012/07/us-vietnam-defense-relations-investing-in-strategic-alignment>.

possessing nation in the region with only few exceptions. With cooperation between the two navies, Vietnam should also be able to reach similar status in the not too distant future.

The “means” will rely on assets which are already readily available in the PACFLT area of responsibility. Staffs at U.S. Pacific Fleet, Submarine Forces, Pacific, Seventh Fleet and Commander Task Force Seventy Four are all experts in working with embassies and country teams, partner nations’ representatives and leveraging assets within the joint service and intergovernment organizations to execute these “ways” to meet the “ends”. U.S. surface, aerial and submarine assets regularly conduct operations in and around the South China Sea and would not take much extra effort to reassign them to the types of operations mentioned earlier.

CONCLUSION

Although sometimes slow, advancements that have occurred through this decade are promising. With the assistance of the U.S., in a few years the Vietnamese submarine force will be a formidable force. The Vietnamese submarine force should be able to operate freely in the South China Sea and execute the sea denial mission against nations that threaten their sovereign rights. This effort is bi-lateral and thus careful strategic communication needs to be sent to the Vietnamese government and people that this effort is in the best interest for both parties. The end result would be a more capable Vietnamese militarily and increased stability in the region.

The “ends, ways, means” are straightforward and have a proven record of success. The Pacific Theater Commanders should carefully examine what is at stake and take action before the opportunity is lost.

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