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14. ABSTRACT

Integration and force concentration have become foundational principles in modern military operational thinking. These concepts are particularly important today as the Navy focuses on major fleet operations and "Great Power Competition." Insular operations are becoming obsolete, and the value of a surface combatant that deploys independently is waning. As the rest of the Navy is driving toward further integration, the deployment model of the Littoral Combat Ship (LCS) appears uniquely autonomous. In particular, the combat effectiveness of the LCS Surface Warfare (SUW) Mission Package (MP) has been marginalized by operationally deploying as a solitary unit. The Navy should consider an LCS deployment model built around a multi-ship Surface Action Group (SAG), comprised of two or more SUW-configured LCSs, in order to improve offensive lethality, enhance mutual defense and logistics support, and increase combat and training readiness.

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Introduction

The value of a surface combatant that deploys independently is waning. As the rest of the Navy is driving toward further integration, the deployment model of the Littoral Combat Ship (LCS) appears uniquely autonomous. The combat effectiveness of the LCS Surface Warfare (SUW) Mission Package (MP) is marginalized by deploying as a solitary unit. Naval leaders must reexamine the LCS's operational role, originally envisaged during the program's inception in 2003, to ensure that the Navy is effectively leveraging these assets for today's maritime environment.[1] The Navy should consider an LCS deployment model built around a multi-ship Surface Action Group (SAG), comprised of two or more SUW-configured LCSs, in order to improve offensive lethality, enhance mutual defense and logistics support, and increase combat and training readiness.

Contemporary Context

The Navy's focus is shifting from disaggregated local operations to coordinated theater campaigns. Admiral Swift, former PACFLT Commander, noted that over the past two decades, operations in Central Command have inordinately influenced the thinking of naval leaders.[2] In the early 2000s, the threat of Fast Attack Craft and Fast Inshore Attack Craft in the Persian Gulf were dominant concerns driving tactical and operational decision making. The LCS was borne from this environment and the operational mindset it inspired. Admiral Swift encourages commanders to think, not in terms of individual tactical engagements, but rather in terms of campaigns, the likes of which the Navy has not experienced since World War II (WWII).[3]

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[1] Robert Work, *Naval Transformation and the Littoral Combat Ship*, Washington (DC: Center for Strategic and Budgetary Assessments, 2004), 2.
[2] Scott H. Swift, "A Fleet Must Be Able to Fight," U.S. Naval Institute Proceedings 144, no. 5 (May 2018), 1.
[3] Scott H. Swift, "A Fleet Must Be Able to Fight," 7.

Current strategic documents corroborate his sentiment. The 2018 National Defense Strategy describes a "Dynamic Force Employment" concept in which military forces "prioritize maintaining capacity and capabilities for major combat."[4] CNO Gilday describes the Navy's current strategic direction as "Great Power Competition."[5] Within this strategic framework, there is a renewed impetus at the operational level on major fleet actions.

Current Workup and Deployment Framework

To date, the LCS has been an independent deployer. The Surface Warfare Enterprise (SWE) has made considerable efforts to find integration opportunities; however, effective combat performance requires sustaining integrated operations throughout the deployment cycle. The LCS follows the same Fleet Response Training Plan (FRTP) as other combatants. The standard FRTP cycle consists of six phases: Sustainment, Maintenance, Shakedown, Basic, Advanced, and Integrated.[6] The LCS FRTP, as currently defined, loses granularity at the Advanced and Integrated phases. The Surface Force Training and Readiness Manual devotes a chapter to LCS but merely states that "required events for Advanced/Integrated Phase are undergoing review."[7] Following the FRTP, deployments consist of a mix of independent operations and occasional integrated exercises. As operational applications are undergoing development, now is the time to shape the LCS training and deployment construct.

Historical Analysis

[4] Jim Mattis and Department of Defense Washington United States, *Summary of the 2018 National Defense Strategy of the United States of America*, 7.

[5] Michael M. Gilday, "FRAGO 01/2019: A Design for Maintaining Maritime Superiority," Washington, D.C.: Headquarters, Department of the Navy, 4 December 2019, 1.

[6] Surface Force Training and Readiness Manual, COMNAVSURFPAC/COMNAVSURFLANT INSTRUCTION 3502.7A, 09 Jan 2020, 1-1.

[7] Surface Force Training and Readiness Manual, COMNAVSURFPAC/COMNAVSURFLANT INSTRUCTION 3502.7A, January 9, 2020,7-2.

The efficacy of SAGs is evident when examining past successes of similar vessels in major operations. The Navy began procuring LCSs to augment and potentially replace the aging fleet of Oliver Hazard Perry-class Frigates (FFGs).[8] The two vessels are often compared, being air-capable ships of similar size, armament, and displacement. Although there are similarities, there are also critical distinctions. The LCS is lighter, faster, and more agile than the FFG, but this comes at the expense of being less heavily-armed. The LCS also draws comparisons to corvette class warships based upon its speed, maneuverability, and survivability. Many have envisioned a ship similar to LCS playing the role of a corvette, as the famed naval strategist and tactician Wayne Hughes articulated in his "Streetfighter" concept.[9] However, the vessels ideated by "Streetfighter" proponents were smaller and operated in greater numbers. Past frigate and corvette SUW operations indicate that SAG employment is advantageous.

Frigates have historically operated as members of a SAG when conducting SUW actions. Operation PRAYING MANTIS, the largest US surface engagement since WWII, underscores the combat success of frigates. One specific engagement highlights the importance and benefit of mutual support. SAG Charlie, consisting of the *USS Wainwright* (CG-28), *USS Simpson* (FFG-56), and *USS Bagley* (FF-1069), was directed to track and engage the Iranian Kaman-class missile boat, *Joshan*. During the engagement, *Joshan* fired first, launching a Harpoon at the *Wainwright*. Within seconds, the *Simpson* launched a counterattack, striking the *Joshan* with a Standard Missile. The *Simpson's* response was so swift that "both combatants' weapons were simultaneously airborne."[10] Fortunately, the *Wainwright* was unscathed, but had the *Simpson* not

[8] Ronald O'Rourke, "Navy Littoral Combat Ship (LCS) Program: Background and Issues for Congress," updated December 17, 2019, 2.
[9] Wayne P. Hughes Jr, "22 Questions for Streetfighter," *Proceedings*, Vol. 126, No. 2, February 2000, 46- 49.
[10] Harold Lee Wise, "One Day of War," Naval History: Vol 27, Issue 2. Annapolis, MD: Naval Institute Press, 2013.

been ready to respond, there could have been a devastatingly different outcome, illustrating the virtue of mutual support in SUW missions.

Corvettes and other small combatants have almost exclusively operated in flotillas, leveraging numerical superiority as a defense tactic and force multiplier. Modern corvettes came to prominence during WWII, predominantly as convoy escort vessels.[11] They were also versatile and cost-effective patrol craft, adept at striking small boats and even larger warships.[12] The preferred small craft offensive tactic was to attack in mass from multiple positions.[13] With limited defensive capabilities, small ships relied heavily on the element of surprise, using numerical advantage, speed, smoke screens, and the cover of darkness to prevent targeting.[14] Historical evidence supports the logic that small vessels engaged in SUW operations benefit by working in multi-ship groups.

Proposed Operational Model

Military theorists have long believed concentration to be a force multiplier in offensive military operations. Carl von Clausewitz, one of the masters of military theory, states, "There is no higher and simpler law of strategy than that of keeping one's forces concentrated."[15] Alfred Thayer Mahan and Sir Julian Corbett, two of the great classical naval warfare theorists, agreed that concentration of force at sea was necessary to win decisive naval battles, gain sea control, and achieve military objectives. Concentration has been inculcated into US military operations since the genesis of codified doctrine; the "1944 War Instructions" directed Naval Commanders

[11] John Keegan, *The Price of Admiralty* (New York: Viking, 1989), 277.
[12] Stephen M. Clarke, *The Technology Revolution at Sea: A Case Study of Small Combatants* (Naval Post Graduate School, Monterey, CA, 1993), 33.
[13] John Marriott, *Fast Attack Craft* (New York: Crane, Russak and Company Inc, 1978), 11.
[14] Bryan Cooper, *PT Boats* (New York: Ballantine Books, 1970), 9.
[15] Carl von Clausewitz, *On War* (Princeton: Princeton University Press, 1976), 204.

to engage in operations with their "entire force and keep tactically concentrated until the enemy has become disorganized."[16] Wayne Hughes asserts that it is critical for the "tactical commander to have the means to concentrate firepower and deliver enough of it to accomplish the mission before the enemy can bring decisive firepower to bear."[17] Concentration of force is only effective if forces are adequately manned, trained, and equipped prior to the decisive point.

The SWE has capitalized on technological advances to improve concentration of force in time and space. For two decades, surface warfighters have focused on missions such as air defense, strike, and ballistic missile defense.[18] The focus has recently shifted to SUW, returning the utility of SAGs to the forefront of operational thinking. To meet operational demands, Naval leaders conceived the idea of "Distributed Lethality," whereby small adaptive units, known as "hunter-killer surface action groups," consolidate offensive firepower while distributing forces across space to complicate adversary targeting solutions.[19] "Distributed Lethality" has received praise from the CNO down and has proven its effectiveness. It was put into action in 2016 when three DDGs revitalized the annual Pacific SAG (PACSAG) deployment design. After the deployment, CAPT Bretz, the DESRON Commander, concluded, "the value of a SAG cannot be overstated."[20] Admiral Swift, PACFLT Commander at the time, commented, "the combined

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[16] United States Navy. Headquarters, Commander in Chief United States Fleet. War Instructions, 1944 (F.T.P. 143 (A)), Washington, D.C.: Navy Department. 1 November 1944, 8.

[17] Wayne P. Hughes Jr and Robert Girrier, *Fleet Tactics and Naval Operations* (Annapolis, MD: Naval Institute Press, 2018), 194.

[18] Sam LaGrone, "SNA: Navy Surface Leaders Pitch More Lethal Ships, Surface Action Groups," *USNI News*, updated January 15, 2015, https://news.usni.org/2015/01/14/sna-navy-surface-leaders-pitch-lethal-ships-surface-action-groups.

[19] Thomas Rowden, Peter Gumataotao, and Peter Fanta, "Distributed Lethality," *U.S. Naval Institute Proceedings*, Vol. 141/1/1,343, January 2015.

[20] MC1 Trevor Walsh, SURFPAC Public Affairs, "Surface Action Group - A Key to Maintaining Maritime Superiority," *Surface Warfare Magazine*, Issue 54, Spring 2017, https://www.public.navy.mil/surfor/swmag/Pages/Surface-Action-Group---A-Key-To-Maintaining-Maritime-Superiority.aspx.

lethality of a SAG is much greater than an individual DDG, as impressive as an individual DDG is."[21]

The international community has also recognized the benefits of combined firepower and mutual support that a SAG provides. The NATO Maritime Command currently leads two Standing NATO Maritime Groups (SNMGs), SAGs made up of a combination of multinational destroyers and frigates. These SAGs allow NATO to simultaneously concentrate and distribute its forces in order to provide "an immediate operational response capability both in peacetime and in crisis."[22] Theory, doctrine, and operational evidence all underscore SAG effectiveness.

Improved Offensive Lethality

Deploying with multiple LCS SUW MPs increases the targeting radius of weapons organic to each and magnifies the lethality of their combined Aviation Detachments (AvDets). The LCS SUW MP has two primary sources of offensive capability. The first is the hull's organic armament, which includes the Naval Strike Missile (NSM), Rolling Airframe Missile, Longbow Hellfire anti-surface missile, 57mm gun, and various other smaller-caliber weapons.[23] The second is the AvDet's MH-60S Seahawk helicopter, capable of employing Hellfire missiles, guided/unguided rockets, a 20mm cannon, and smaller caliber crew-served weapons.[24] These weapons packages are complementary and, when integrated, increase the offensive range and capacity of one another.

Operating with two LCS SUW MPs doubles the integrated sensor coverage, thereby increasing weapons employment range. Multiple LCSs could combine intelligence, surveillance,

[21] MC1 Trevor Walsh, SURFPAC Public Affairs, "Surface Action Group - A Key to Maintaining Maritime Superiority."
[22] NATO Maritime Command, https://mc.nato.int/missions/maritime-groups.
[23] Selected U.S. Navy and The Peoples Liberation Army (Navy) (PLA (N)) Tactical Capability Handbook." Slide pack, Newport, RI: Naval War College, Joint Military Operations Department, January 2020, 11-12.
[24] NTRP 3-22.4-MH60S, "MH-60S Naval Aviation Technical Information Product (NATIP)," December 19, 2018.

and reconnaissance (ISR) data from all SAG assets, including the LCS, MH-60S, and MQ-8 Fire Scout, a rotary-wing Unmanned Aerial Vehicle. Equipped with the BRITE Star multi-sensor targeting/surveillance system, the MQ-8 is a particularly valuable scouting platform. BRITE Star is outfitted with electro-optic and infrared cameras as well as a laser capable of providing targeting information to Hellfire missiles.[25] The Fire Scout also operates a search radar capable of detecting surface contacts to augment the LCS's surveillance efforts.[26] The MQ-8C flight manual allows a maximum control range of 150 nautical miles.[27] Two Fire Scouts operating concurrently in separate sectors could surveil vast areas of ocean, feeding ISR data into the same Common Operational Picture. The MH-60S is also equipped with a Multi-Spectral Targeting System well-suited for integration into the kill-chain. Two MH-60Ss and two MQ-8s would increase surveillance capacity and over-the-horizon targeting capabilities for weapons such as the NSM. The kill-chain starts with "Find," and in order to adhere to Hughes' maxim of "attacking effectively first," it is critical to leverage and integrate all available scouting platforms.[28]

The MH-60S possesses a great deal of combat potential. The Helicopter Sea Combat (HSC) community has been training to defeat small surface vessels for over a decade. The HSC mission statement describes the MH-60S as "the Fleet's premier close-in maritime attack platform," espousing its ability to provide "credible lethality for defense-in-depth from

[25] NTRP 3-22.4-MQ8, "MQ-8 Naval Aviation Technical Information Product (NATIP)," November 30, 2018, 5-1, 5.1.
[26] NTRP 3-22.4-MQ8, 6-1, 6.1.
[27] A1-MQ8CA-NFM-000, "NATOPS Flight Manual Navy Model MQ-8C Unmanned Aircraft System," November 1, 2017, 4-9, 4.4.8.
[28] Wayne P. Hughes Jr and Robert Girrier. *Fleet Tactics and Naval Operations* (Annapolis, MD: Naval Institute Press, 2018), 9.

unmanned systems, surface combatants, and asymmetric threats."[29] Former HSC Wing Pacific Commander, CAPT Kennedy, included in his mission statement: "We [HSC] are the best in the world at killing anything that floats."[30] The community trains to the SUW mission almost exclusively employing multi-aircraft tactics. Weapons employment tactics are often predicated on having a wingman available to provide suppressive cover fire. Helicopters in section also have the advantage of sharing targeting data using lasers, link tracks, and "talk-ons" via radio. Employing section tactics increases the Seahawk's lethality exponentially. Deploying independently, with a single MH-60S, is a decision that defies Naval Aviation doctrine. An LCS SAG would close this gap between helicopter employment and doctrine.

Enhanced Mutual Defense and Logistics Support

Deploying as a SAG enhances mutual defensive support by virtue of its ability to cover its own proverbial "six." SAG deployments also bolster logistics flexibility by creating redundancies in parts, manpower, and resources. The LCS is arguably more susceptible than other similarly-sized warships to combat damage, requiring mutual support to buttress its vulnerabilities. As previously mentioned, the agility and speed of an LCS come at the price of being less heavily-armed and more vulnerable to damage. The Director, Operational Test and Evaluation (DOT&E) assessed that both LCS variants "have limited anti-ship missile self-defense capability."[31] Multiple ships provide more comprehensive sensor coverage and create overlapping fields of fire, thereby producing a less-porous and more-layered defensive shield.

[29] HSC Mission Statement FINAL, modified February 28, 2020. https://cpf.navy.deps.mil/sites/cnap-cmds2/CHSCWP/Command%20Policy%202/HSC%20Mission%20Statement%20FINAL.pdf

[30] CHSCWP Command Philosophy, modified September 21, 2017. https://cpf.navy.deps.mil/sites/cnap-cmds2/CHSCWP/lessons/CDRE%20VISION/HSC%20STRATEGY/CHSCWP%20Command%20Philosophy.pdf

[31] Director, Operational Test and Evaluation, "Littoral Combat Ship (LCS)," FY19 Programs, https://www.dote.osd.mil/Portals/97/pub/reports/FY2019/navy/2019lcs.pdf?ver=2020-01-30-115500-220

MH-60S defensive tactics also recommend employing at least two helicopters. In most instances, if one helicopter goes down, the other is available to render Search and Rescue (SAR) support. HSC tactical publications provide an exhaustive list of formation flight benefits, including "mutual support, increased lookout for threat detection…flight maneuverability and flexibility to counter threats, and unity of effort."[32] The radar warning coverage area of two helicopters increases the probability of enemy detection. Additionally, defensive maneuvering with two helicopters complicates enemy targeting solutions. In short, employing a single MH-60S in a combat environment is not only tactically unsound; it is unsafe.

Regarding logistics, additional assets generate more ancillary equipment, supplies, and manpower. The LCS minimal-manning construct intentionally reduces personnel redundancies. The ability to cross-deck a Sailor, even temporarily, supports contingency operations in the event of an emergency. Likewise, redundancy in equipment and supplies may drastically reduce return-to-combat-readiness times by eliminating the need to receive materiel from a supply ship or depot. A part that breaks on one vessel may be available and transferable from another ship in the SAG. The sharing of physical resources is a significant advantage, but perhaps even more important is the ability to share intangible resources such as experience, training, wisdom, and ideas, all of which are in greater supply when operating in tandem.

Additional assets also improve logistics support for the AvDet. Currently, each LCS SUW MP deploys with one MH-60S and one MQ-8. For an LCS deploying independently, aircraft availability and maintenance readiness hinge on the number of parts and consumables available in the AvDet's Pack Up Kit. Having fewer aircraft and parts increases a commander's

[32] SEAWOLF Manual, Chapter 1.5, Maneuver Description Guide, May 2016, 74.

risk threshold when determining how and when to employ their assets. An LCS SAG increases redundancy in capabilities, manpower, and supplies, while reducing single points of failure.

Increased Combat and Training Readiness

Clausewitz argues that the only way to reduce friction in war is through "combat experience."[33] The best way to prepare for battle during peacetime is by operating and training in an environment that closely approximates combat. Training as a SAG maximizes collective creativity, improves the realism of synthetic threat presentations, and allows for external validation and evaluation. Individual training is never as robust as integrated training due to the challenges inherent in self-testing and assessment. An independent deployer must create its own training scenario, manage its own threat presentation, validate its own effectiveness, and evaluate its own performance. The Navy expects training to extend beyond the workup cycle and continue through deployment. The inability for an independent deployer to adequately train while underway will lead to the atrophy of critical capabilities. Preparing and deploying as a SAG will improve the quality of training and the level of combat readiness.

The HSC community's focus on multi-aircraft tactics portends limited training opportunities for a single helicopter. For pilots deploying on an LCS, less than 30% of eligible Seahawk Weapons and Tactics Program events can be completed while underway, because the remaining 70% require at least two helicopters.[34] Training and tactical advancements are effectively halted for pilots who deploy on an independent LCS. These training and readiness pitfalls could be avoided by employing the LCS SUW SAG concept.

Challenges to Integration

[33] Carl von Clausewitz, *On War* (Princeton: Princeton University Press, 1976), 122.

[34] Helicopter Sea Combat (HSC) Seahawk Weapons and Tactics Program (SWTP), COMHELSEACOMBATWINGPAC 3502.6 October 28, 2015. 15 of 21 Pilot Core LVLIII/IIIi events require dual ship.

There are challenges unique to the LCS FRTP that complicate the LCS's ability to integrate fully. LCS hull certifications are independent of crew certifications, which differs from traditional FRTPs.[35] The hull itself deploys for 16-24 months, while two crews alternate throughout its deployment. The typical deployment length of most surface combatants is 6-8 months. If an LCS were to train and deploy with other forces, it would revert to independent operations once those forces returned to port. The LCS SAG model would require both crews for each hull to train and deploy together, which would increase training throughput, stressing the capacity of support facilities.

A second challenge is that there are limited SUW MPs available. The Navy procured 35 vessels, making LCS the second-largest class of ships behind Arleigh Burke-class destroyers.[36] However, the hulls are divided between three MPs: Surface Warfare (SUW), Mine Counter Measures (MCM), and Anti-Submarine Warfare (ASW).[37] The original LCS concept was a ship that was 40% reconfigurable, providing the tactical flexibility to match mission objectives by swapping MPs.[38] However, due to the lack of facilities and time required to swap MPs, the SWE decided to assign each hull a primary MP.

The LCS fleet is divided between two squadrons, each made up of three divisions (DIVs), one DIV for each MP. Each DIV is expected to receive four ships, three operational, and one for training. The two standing SUW DIVs are each responsible for maintaining, training, and fighting four LCS SUW MPs. Deploying two LCS SUW MPs while maintaining maintenance

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[35] Surface Force Training and Readiness Manual, 7-1.

[36] Ronald O'Rourke, "Navy Littoral Combat Ship (LCS) Program: Background and Issues for Congress," updated December 17, 2019, 1.

[37] "LCS: The Future is Now," *All Hands Magazine*, accessed December 28, 2019, https://www.navy.mil/ah_online/LCS/.

[38] Lockheed Martin, "Littoral Combat Ship," accessed March 20, 2020. https://www.lockheedmartin.com/en-us/products/littoral-combat-ship-lcs.html

and training readiness for the crews and ships at homeport requires additional SUW-dedicated hulls. A RAND Performance Report recommended nearly twice as many SUW MPs as either MCM or ASW MPs.[39] RAND also recommended conducting major combat operations as an "SUW-configured LCS SAG," while suggesting that MCM and ASW MPs could operate independently.[40] The challenges facing LCS integration are considerable but not insurmountable, and the benefits of an LCS SUW SAG are significant.

Recommendations for Employment

During peacetime, assigning low-threat missions to the LCS SAG frees up more capable surface assets to conduct missions in contested domains. During wartime, the LCS SAG can integrate into larger strike groups, fortifying the layered defense of high-value units by pairing against smaller surface threats. Operational capabilities in both environments are enhanced by the availability of an LCS SAG, as opposed to a single LCS.

Peacetime Operations. These operations can be binned into three general categories: constabulary, humanitarian, and diplomatic. Constabulary operations protect vital national interests and enforce the rule of law. The LCS is uniquely suited for such services, because littoral waters are often the most densely used and trafficked sea space, requiring the greatest amount of oversight. Constabulary functions include anti-piracy, anti-narcotics trafficking, Freedom of Navigation, and Maritime Interdiction Operations. SNMGs have participated in several anti-piracy operations throughout the world and have significantly benefited from the extensive surveillance network created by operating as SAGs. During Operation OCEAN

[39] Brien Alkire, National Defense Research Institute (U.S.), and United States Navy, *Littoral Combat Ships: Relating Performance to Mission Package Inventories, Homeports, and Installation Sites*. Vol. MG-528-NAVY, Santa Monica, CA: RAND Corp, 2007, 76, Table 8.1.

[40] Ibid, 13.

SHIELD, SNMGs reduced the number of annual pirate attacks off the Horn of Africa from 130 in 2009 to one in 2014.[41] Since 2016, SNMGs have participated in Operation SEA GUARDIAN, executing a variety of constabulary missions ranging from maritime counter-terrorism to protecting critical infrastructure.[42] The proven ability of SNMGs to perform constabulary operations is indicative of the potential value of an LCS SAG to conduct similar missions.

Missions such as Humanitarian Assistance/Disaster Relief and Non-Combatant Evacuation Operations demonstrate goodwill. The LCS SUW team is well-designed to respond to incidents affecting coastal or archipelagic nations caused by natural disasters, civil unrest, or armed conflict. The LCS could serve as an evacuation and resource-staging platform; its speed, maneuverability, and shallow draft allow it to quickly traverse littoral waters beyond the reach of other combatants. With a flight deck over 1.5 times larger than most air-capable ships, it could be used to stage resources, act as a remote operations center, or provide temporary refuge for displaced individuals.[43] The MQ-8 could serve as a surveillance platform, capable of providing accurate and timely information to aid workers, while the MH-60S could perform SAR and logistics operations.

Diplomatic operations are essential to maintaining and fortifying foreign military relations. The Navy's diplomatic role was highlighted in CNO Richardson's Purple Line of Effort, aimed at strengthening the Navy's network of partners.[44] Diplomacy efforts allow the LCS SAG to have a strategic impact at the operational level. Harmonizing with partner militaries is a way to display US military wares and prowess, exchange best practices, and fortify

[41] North Atlantic Treaty Organization, "Operation Ocean Shield," Fact Sheet, November 2014.
[42] North Atlantic Treaty Organization, "Operation Sea Guardian," accessed March 22, 2020, https://mc.nato.int/missions/operation-sea-guardian.
[43] Lockheed Martin, "Littoral Combat Ship," accessed March 20, 2020. https://www.lockheedmartin.com/en-us/products/littoral-combat-ship-lcs.html
[44] John M. Richardson, "A Design for Maintaining Maritime Superiority, Version 2.0," December 2018, page 14.

cooperative relationships. Involvement in multinational exercises enhances training and demonstrates America's dedication to partnership.

Wartime Operations. The LCS was designed to engage the enemy in its own littorals, preventing the use of anti-access/area-denial strategies.[45] However, the LCS is more capable of accomplishing this mission when employed with the right resources. Dr. Milan Vego, renowned naval historian and analyst, states that the primary objective of a naval force in a high-intensity fight is "to obtain/maintain and exercise control of the surface and subsurface." It would be nearly impossible to achieve such objectives without operating "in close cooperation with other naval combat arms."[46]

The LCS SUW SAG is a capable offensive weapon against small boats. RADM Kirby, former Spokesperson for the US Department of State, called the LCS "the best swarm killer in the surface fleet."[47] During major combat operations, the LCS SAG could increase its lethality and steel its defenses through further integration with other surface combatants. An LCS SAG under the umbrella of a destroyer or cruiser would be better protected from air and subsurface threats while conducting SUW actions. It could also integrate into a larger Expeditionary Strike Group (ESG) or Carrier Strike Group (CSG) to provide littoral security and strengthen defense-in-depth efforts, protecting the capital ship from small boat attacks. Its ability to patrol the littorals could safeguard an ESG during an amphibious assault. Able to operate close to shore, the LCS SAG could provide coastal fire support to the assaulting Marines. Additionally, coastal

[45] Martin Murphy, *Littoral Combat Ship: An Examination of its Possible Concepts of Operations*, Center for Strategic and Budgetary Assessment, 2010, page 4.
[46] Milan Vego, "Fundamentals of Surface Warfare," Newport, RI: Naval War College, Joint Military Operations Department, 2016.
[47] John Kirby, "Return Fire on the Navy's Littoral Combat Ship," *Time Magazine*, October 12, 2012. https://nation.time.com/2012/10/12/return-fire-on-the-navys-littoral-combat-ship/print/.

proximity could put the AvDet in a favorable position to perform overland Personnel Recovery or Close Air Support.

Conclusion

The Navy cannot afford to sideline such a large percentage of its force during a major naval battle. Through adequate planning, training, and experience working as an integrated unit, the LCS SUW SAG could be a formidable offensive weapon against smaller surface combatants in a fleet-level engagement. There have been many persistent criticisms of the LCS; however, to paraphrase former Secretary of Defense Donald Rumsfeld, "you fight with the forces you have, not the forces you want." The LCS is in the Fleet, and we must determine how to employ it most effectively to ensure the program is recognized and remembered not for its turbulent birth but for its operational successes.

Bibliography

A1-H60SA-NFM-000. "NATOPS Flight Manual Navy Model MH-60S Helicopter." January 15, 2019.

A1-MQ8CA-NFM-000. "NATOPS Flight Manual Navy Model MQ-8C Unmanned Aircraft System." November 1, 2017.

Alkire, Brien, National Defense Research Institute (U.S.), and United States. Navy. Littoral Combat Ships: *Relating Performance to Mission Package Inventories, Homeports, and Installation Sites.* Vol. MG-528-NAVY; MG-528-NAVY. Santa Monica, CA: RAND Corp, 2007.

Clarke, Stephen M. "The Technology Revolution at Sea: A Case Study of Small Combatants." Naval Post Graduate School, Monterey, CA, 1993.

Clausewitz, Carl von. *On War*. Translated and edited by Michael Howard and Peter Paret. Princeton: Princeton University Press, 1976.

COMNAVSURFPAC/COMNAVSURFLANT INSTRUCTION 3502.7A. "Surface Force Training and Readiness Manual." January 9, 2020.

Cooper, Bryan. *P T Boats*. New York: Ballantine Books, 1970.

Defense Acquisition Management Information Retrieval (DAMIR). "Littoral Combat Ship Mission Modules," RCS: DD-A&T(Q&A) 823-443, December 2017.

Gilday, Michael M. ADM. "FRAGO 01/2019: A Design for Maintaining Maritime Superiority." Washington, D.C.: Headquarters, Department of the Navy, December 4, 2019.

HSC Mission Statement. COMHSCWINGPAC SharePoint. Modified February 28, 2020. https://cpf.navy.deps.mil/sites/cnap-cmds2/CHSCWP.

Hughes, Wayne P. Jr, and Robert Girrier. *Fleet Tactics and Naval Operations*. 3rd ed. Annapolis, MD: Naval Institute Press, 2018.

Hughes, Wayne P. Jr. "22 Questions for Streetfighter." Proceedings, Vol. 126, No. 2, February 2000.

Keegan, John. *The Price of Admiralty*. New York: Viking, 1989.

Kline, Jeffery E. "A Tactical Doctrine for Distributed Lethality," Center for International Maritime Security, February 22, 2015.

LaGrone, Sam, "SNA: Navy Surface Leaders Pitch More Lethal Ships, Surface Action Groups," USNI News, updated January 15, 2015, https://news.usni.org/2015/01/14/sna-navy-surface-leaders-pitch-lethal-ships-surface-action-groups.

Marriott, John. *Fast Attack Craft*. New York: Crane, Russak and Company Inc, 1978.

Mattis, Jim, and Department of Defense, Washington United States. *Summary of the 2018 National Defense Strategy of the United States of America*, 2018.

Murphy, Martin. *Littoral Combat Ship: An Examination of its Possible Concepts of Operations*: Center for Strategic and Budgetary Assessment, 2010.

Myers, Meghann. "SECNAV unveils new name for LCS: the 'fast frigate.'" Navy Times, January 15, 2015. https://www.navytimes.com/news/your-navy/2015/01/15/secnav-unveils-new-name-for-lcs-the-fast-frigate/.

North Atlantic Treaty Organization, "Operation Ocean Shield," Fact Sheets.

NTRP 3-22.4-MQ8. "MQ-8 Naval Aviation Technical Information Product (NATIP)." November 30, 2018.

O'Rourke, Ronald, and Congressional Research Service Washington. "Navy Littoral Combat Ship (LCS) Program: Background and Issues for Congress." Updated December 17, 2019. https://crsreports.congress.gov.

Richardson, John M. "A Design for Maintaining Maritime Superiority, Version 2.0." December 2018.

Smith, Richard D. "Presence in the Littorals: The Corvette Solution?" Naval Postgraduate School, Monterey, CA, 1994.

Swift, Scott H. "A Fleet Must Be Able to Fight." *U.S. Naval Institute Proceedings* 144, no. 5. May 2018.

United States Navy. Headquarters, Commander in Chief United States Fleet. *War Instructions, 1944* (F.T.P. 143 (A)). Washington, D.C.: Navy Department, November 1, 1944.

United States Navy Fact Files. https://www.navy.mil/navydata/fact.asp.

Vego, Milan. "Fundamentals of Surface Warfare." Newport, RI: Naval War College, Joint Military Operations Department, 2016.

Walsh, Trevor, SURFPAC Public Affairs. "Surface Action Group - A Key to Maintaining Maritime Superiority." Surface Warfare Magazine, Issue 54, Spring 2017. https://www.public.navy.mil/surfor/swmag/Pages/Surface-Action-Group---A-Key-To-Maintaining-Maritime-Superiority.aspx.

Wise, Harold Lee. "One Day of War." Naval History: Vol 27, Issue 2. Annapolis, MD: Naval Institute Press, 2013.

Work, Robert O. and Center for Strategic and Budgetary Assessments (Washington, D.C.). *Naval Transformation and the Littoral Combat Ship*. Washington, DC: Center for Strategic and Budgetary Assessments, 2004.