

*The Destruction of Russian Torpedo destroyers by Japanese torpedo destroyers at Port Arthur.
The illustration of the war between Japan and Russia. (NO. 5)*

A BREAK IN THE CLOUDS: LEARNING LESSONS FROM THE SEA

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Learning lessons from past and current wars is a complicated endeavor, given observers' personal and institutional preferences and other challenges. Nonetheless, Frank Hoffman and George P. Garrett argue that carefully drawn lessons based on access to more information and objective and rigorous analysis are critical in determining the course and speed of the defense establishment's journey into the future. The authors consider how British and American observers drew lessons from the 1905 Battle of Tsushima between the Russian and Japanese navies and how naval analysts applied them to their own ideas of future naval warfare. They then look to the naval aspect of the ongoing Russo-Ukrainian war and suggest that maritime forces should assess Ukraine's valiant efforts in the Black Sea, and carefully draw out key insights for future challenges.

"... there is a break in the clouds: a small-scale conflict occurs somewhere and gives you a "fix" by showing whether certain weapons and techniques are effective or not; but it is always a doubtful fix."

The failure to learn from contemporary warfare "is in many ways the most puzzling of all military misfortunes."² But one historian disagrees, finding that learning from the experience of others is actually harder, since the "investigatory difficulty of foreign wars complicates accurately capturing what happened."³ We underestimate that challenge. The U.S. military does not have a stellar track record in absorbing lessons from its observation of past conflicts. Its ability to learn from the Russo-Japanese War, the Spanish Civil War, and Yom Kippur War are the subject of scholarly criticism.⁴

This article, centered around a war over a century ago, shows that learning is hard work but small wars can provide invaluable guideposts that provide a "fix" to confirm or alter the direction of the modernization

initiatives of military forces. We believe the U.S. Navy can learn a lot from ongoing wars such as the present contest in the Black Sea and gain more conclusive insights than from studies and simulations.

We begin by explaining the basic requirements for formulating valid lessons. From there, we review the Battle of Tsushima in the Russo-Japanese War, detailing the divergent insights that U.S. and British officers took from that conflict. And finally, we conclude by addressing a few aspects of the naval war in Ukraine that are not drawing sufficient attention and that should be examined with an eye toward accelerating certain remotely operated or autonomous platforms. The naval war seems overlooked in the current debate over lessons, swamped by the intensity of the land component of the conflict. According to one report, it does not appear that the Department of Defense is spending any effort studying the maritime components in the Black Sea struggle.⁵

There is an opportunity for Western navies to learn something from this war, however. While the contest

1 Michael Howard, "Military Science in the Age of Peace," *RUSI Journal* 119, no. 1 (1974): 3–11.

2 Eliot Cohen and John Gooch, *Military Misfortunes: The Anatomy of Failure in War* (New York: Free Press 2006), 26. See also: Ryan Evans, "Bind Ukraine Closer to American Military Learning," *War on the Rocks*, April 20, 2023, <https://warontherocks.com/2023/04/bind-ukraine-closer-to-american-military-learning/>.

3 Brent Sterling, *Other People's Wars: The US Military and the Challenge of Learning from Foreign Conflicts* (Washington, DC: Georgetown University Press, 2021).

4 On the complexity of learning, see Johnathan Bailey, "Military History and the Pathology of Lessons Learned, the Russo-Japanese War, a Case Study" in Williamson Murray and Richard Sinnreich, eds., *Past as Prologue: The Importance of Military History to the Profession of Arms* (New York: Cambridge University Press, 2006). More recently, see Thomas J. Mahnken, ed., *Learning the Lessons of Modern War* (Stanford: Stanford University Press, 2020).

5 A news report suggested that naval warfare was not a current object of study for lessons from Ukraine. Alex Horton, "What the Pentagon has Learned from Two Years of War in Ukraine," *Washington Post*, February 23, 2024, <https://www.washingtonpost.com/national-security/2024/02/22/ukraine-war-pentagon-lessons-learned/>.



is not over, clearly the Ukrainian sea denial strategy has produced strategic effects with limited means.⁶ To ensure that the naval services get a good navigation fix for the future, they should assess Ukraine's valiant efforts in the Black Sea in detail, and carefully draw out key insights for future challenges.

This effort draws upon our combined 75 years of experience as military officers in the naval services and previous work on studies in support of Defense Department transformation and Marine Corps reform efforts.

Learning Lessons

As Trent Hone has shown, the U.S. Navy began to evolve into a learning organization before the end of the 19th century.⁷ Consistent with the times, the Navy began to professionalize its culture and its educational system, leveraging both history and science to explore new ideas and technologies. The establishment of the Naval Institute in 1879 and its journal was another spark in the diffusion of ideas and the acceleration of learning across the Navy.⁸ This evolving professionalism helped the Navy adapt to the changes in naval warfare in domains under, on, and over the seas at the turn of the 20th century. The U.S. Navy ought to do so again in this disruptive age.

The value of drawing useful lessons is clear, but the process is harder than commonly grasped. "The sages rarely remind us how difficult this learning process is," former soldier and Defense Department official Joe Collins wrote long ago.⁹ He found that civilian and military decision-makers have often struggled to learn effectively from past or contemporary experiences.

Based on our years of battle studies and lessons learned projects, we believe there are four requirements for a comprehensive learning process from ongoing wars.

Access

In the past, military attachés or designated military observers were granted access by one or both sides of a conflict. In the Russo-Japanese War, both sides grudgingly authorized observers, and some 16 countries were present with roughly 30 observers, mostly

with the land forces. Sometimes host nations restrict access or constrain the freedom of movement of observers. In today's information-saturated context, information from journalists, bloggers, and social media is abundant but may not be free from bias.

Objectivity

Every observer brings his or her own perspectives and biases to the task of reporting on ongoing conflict. Observers from the Anglo-Boer and the Russo-Japanese wars were influenced by the prevailing conventional wisdom of their respective service or branch. Traditionalists clung to their saber or lance and ignored the impact of rapid-firing artillery and the machine gun. Each observer brings their unique history and cognitive anchor to the task. Some observers may sacrifice their objectivity to avoid upsetting their hosts and preserve their access.

Analytical Capacity

One of the values of using credible military observers is their education in armed conflict and developments in defense hardware. The role of analysis is to provide the depth, breadth, and context of ongoing wars, and to ascertain not just what is working or what appears to be novel. The critical job is to ascertain more than what happened, but why it happened in the violent reciprocal interaction that is the essence of warfare. The challenge in analysis is to provide a valid foundation for decision-making via an operational net assessment of the actions of the opposing forces.

Generalizations

A series of observations and data are just that — they are not a lesson until they are analyzed and a generalization is drawn by an institution. The essence of lessons that are drawn from contemporary wars requires the creation of a generalization about what is relevant from those real wars to anticipated contexts. British officers after the Boer War were quick to dismiss any lessons about the value of cavalry based upon the uniqueness of the conflict and the perceived value of cavalry in a future European war.

A lesson might be recognized and recorded, but it's not truly learned until the institution processes

6 Sebastian Bruns and Heinz-Dieter Jopp, "Die nasse Flanke des Russland-Ukraine-Kriegs – Lektionen für die moderne Seekriegsführung und die Marine," (The Wet Flank of the Russia-Ukraine War – Lessons for Modern Naval Warfare and the Navy) *Sirius* 8, no. 1 (March 2024): 57. <https://doi.org/10.1515/sirius-2024-1005>; Matt Boyse, George Scutaru, Antonnia Colibasanu and Mykhailo Saus, *The Battle for the Black Sea is Not Over* (Washington DC: Hudson Institute, April 2024), 17.

7 Trent Hone, *Learning War: The Evolution of Fighting Doctrine in the U.S. Navy, 1898–1945* (Annapolis, MD: Naval Institute Press, 2018)

8 Lawrence C. Allin, "The Naval Institute, Mahan, and the Naval Profession," *Naval War College Review* 31, no. 1 (Summer 1978): 29-48; Jon Sumida, *Inventing Grand Strategy and Teaching Command: The Classic Works of Alfred Thayer Mahan Reconsidered* (Baltimore, MD: Johns Hopkins University Press, 1997).

9 Joseph J. Collins, "Desert Storm and the Lessons of Learning," *Parameters* 22, no. 1 (Autumn 1992): 83–95. Collins has not gotten any more optimistic. See Joseph J. Collins and Richard D. Hooker, Jr., *Lessons Encountered, Learning from the Long War* (Washington, DC: NDU Press, 2014). See also Frank Hoffman, "Learning Large Lessons from Small Wars," *War on the Rocks*, February 5, 2014, <https://warontherocks.com/2014/02/learning-large-lessons-from-small-wars/>.

it into changes in practice (doctrine, organization, or materiel).¹⁰ It is at this stage in the process that many a good observation is lost because it does not fit comfortably with a military's identity, culture, or preferred operational paradigm.

The Russo-Japanese War

Starting in 1901, Russia and Japan attempted to resolve their competing interests in Manchuria and Korea diplomatically but made little progress. When negotiations failed in early 1904, Japan's Imperial Council elected to go to war, and directed Adm. Togo Heihachiro to initiate hostilities. The plan, framed in Navy Order One, tasked the navy to escort the Japanese Third Army across the Yellow Sea to Korea. It also tasked Togo's force with conducting a raid against Port Arthur and an unsuspecting Russian fleet anchored outside the harbor.

The Russian Navy was still a "fleet in being" that required the Japanese to maintain a constant vigil to ensure that the Japanese army's lines of communication from Japan to Manchuria were secure.

On the night of the raid, the Russian fleet commander was hosting a social event.¹¹ Some well-timed fireworks appeared to cap the end of the event, with the guests thinking they were part of the celebration. Instead, it was the Imperial Japanese Navy's bold raid by two squadrons of destroyers.

The Japanese destroyers were not detected by a Russian screening patrol, and they lined up strikes on several large ships. The attack began just before midnight and was over in minutes. The Japanese fired 13 torpedoes and claimed seven hits (three turned out to be the real total), leaving the battleships *Retvizan* and *Tsesarevich* listing. Both settled to the bottom in shallow water, with another cruiser

damaged as well.¹²

Because the Japanese navy did not have communications gear on its destroyers, Togo was not immediately aware of the Russian fleet's vulnerability to a follow-on attack. By the time he learned the attack had been successful, the Russians had recovered. His belated surface force was driven off by Port Arthur's accurate shore-based guns. The attack failed in its strategic purpose, but it did damage the Russian fleet in both materiel and morale terms. Moreover, with the two Russian ships lost, the Japanese fleet now held the balance of power in the Yellow Sea. The Russian Navy was still a "fleet in being" that required the Japanese to maintain a constant vigil to ensure that the Japanese army's lines of communication from Japan to Manchuria were secure. This imposed a significant cost on Japan's navy as well as wear and tear on Togo's fleet.

The Japanese attempted to bottle up the port with a series of attacks by block ships, which were laden with concrete and filled with explosives to be scuttled in Port Arthur's narrow channel. Numerous operations were conducted without success. A protracted war of attrition by sorties and mines ensued, with notable losses on both sides from mines, including two of Togo's six battleships.¹³ Another casualty to mines was the highly regarded Russian fleet commander, Vice Adm. Stepan Markov, who perished aboard his flagship, the pre-Dreadnought battleship *Petropavlovsk*, on April 13, 1904 when it struck a Japanese mine outside of Port Arthur.

The reason the Japanese commander needed to husband his combat power was the tsar's rash decision to dispatch the pride of the Russian navy, the Baltic Fleet, halfway around the globe to the Pacific to reinforce the besieged Port Arthur.

The Battle of Tsushima

Russia's Baltic Sea Fleet, dubbed the Second Pacific Squadron, was tasked with deploying to Asia to restore the tsar's honor and challenge Japan's sea lines of communication. Under the command of Vice Adm. Zinovy Rozhdestvensky, the squadron sailed in October 1904, beginning an epic 18,000-mile ordeal in making

10 Toshi Yoshihara, *Chinese Lessons from the Pacific War: Implications for PLA Warfighting* (Washington, DC: Center for Strategic and Budgetary Assessment, January 2023), 82.

11 Alistair Horne, *Hubris, The Tragedy of War in the Twentieth Century* (New York: Harper, 2015), 30.

12 David C. Evans and Mark R. Peattie, *Kaigun, Strategy, Tactics and Technology in the Imperial Japanese Navy, 1887-1941* (Annapolis, MD: Naval Institute Press, 1997), 97-99; Julian S. Corbett, *Maritime Operations in the Russo-Japanese War, 1904-1905*, Vol. 1 (Annapolis, MD: Naval Institute Press, 2015), 95-98; Horne, *Hubris*, 29-30.

13 The Imperial Japanese Navy battleships *Hatsuse* and *Yashima* were sunk on May 15, 1904.

its way around Africa to the Far East. The squadron was comprised of a motley collection of new and old ships including four new Suvarov-class battleships and eight cruisers. On paper, the Russians had a slight edge in firepower, particularly an advantage in 12-inch guns (26 to 16). But the fleet was poorly manned and had to bring much of its own coal with it since, as a belligerent state, the Russian force could not enter the ports of most countries. After the fall of Port Arthur, Rozhstvensky was pessimistic about the mission, but sailed on pursuant to orders.¹⁴ His motley fleet approached the waters between Japan and Korea, *en route* to Vladivostok, in late May of 1905.¹⁵

On May 27, at 0350, one of Togo's scouting cruisers, *Shinano Maru*, equipped with wireless, was patrolling approaches south of the Tsushima strait. In a thick fog, the captain of *Shinano Maru* encountered a Russian hospital ship with its lights on per international law and then caught a glimpse of several more vessels moving through the gloom. The captain immediately reported his position, as well as the direction and speed of the Russians, to Togo. By 1000, Japan's Combined Fleet was at sea and in combat formation.

Togo had initially planned for a force of destroyers and torpedo boats to intercept Rozhstvensky's force, to erode its offensive power and cohesion. However, sea conditions made this unworkable. When Togo finally got solid intelligence on Rozhstvensky's location, he led his fleet to sea with his battleships in the van.¹⁶

At 1330, Togo's first glimpse of the Russians revealed two parallel, slightly staggered columns steaming northeast, with Rozhstvensky's best ships temporarily masked by the older ships. With an inspiring, Nelson-like signal to his fleet, Togo initiated a series of complicated maneuvers, first crossing in front of the Russians, then initiating a complex and risky maneuver to swing his battle line around, ships turning in succession to bring his fleet on a parallel northeastern track with Rozhstvensky. Togo's flagship *Mikasa* was in the lead — this gave the Russians a prime target, and they opened fire, their initial salvo falling just short. *Mikasa* responded in kind six minutes later.¹⁷

Mikasa took numerous hits in this period but was not slowed — Togo's fleet kept up accurate long-

range fire while closing the range and bringing its secondary guns to bear. Less than 40 minutes after firing began, the Russian battleship *Oslyabya* became the first modern armored vessel sunk entirely by naval gunfire — an end accelerated, perhaps enabled, by the stronger blast effects of the “shimrose” explosive used in Japanese shells, as well as their high rate of fire. Cdr. Vladimir Semenoff, aboard the flagship *Suvorov*, noted in his memoir, “It seemed impossible even to count the number of projectiles striking us. Shells seemed to be pouring upon us incessantly one after another.”¹⁸

A short time later, *Suvorov* took hits in the conning tower and fell out of line, her helm jammed. Rozhstvensky was severely wounded and evacuated to a destroyer, command of the fleet devolving to Rear Adm. Nikolai Nebogatov aboard *Imperator Nikolai I*.

Amidst the confusion, Japanese firing focused on the Russian capital ships, first *Alexander III*, and then *Borodino*. The onset of a heavy fog in the strait gave the Russians an hour's respite. As this cleared, Togo closed in for the kill, under 5,000 yards, his relative firepower advantage becoming dominant. The battleships *Rus* and *Ural* were sunk first, then *Alexander III*. At 1920 *Borodino* slid beneath the water with all but one of her 900-man crew, then the burning *Suvorov* finally succumbed to torpedo attack as night fell.

Breaking off action as darkness approached, Togo unleashed his destroyers and torpedo boats, which “circled like prairie wolves bringing down a great buffalo,”¹⁹ their torpedo attacks largely ineffective but harrying an exhausted and demoralized Russian force.

At dawn, Togo surrounded what was left of the Russian fleet. After a brief exchange of fire, Nebogatov realized his force was hopelessly outgunned and outranged, and surrendered.

The Russians lost 216 officers and 4,614 enlisted killed, with 5,900 captured. Japanese losses were 177 killed and 583 wounded.²⁰ A total of 21 Russian ships were sunk (or scuttled) — including the four modern battleships — six were captured, four slipped into Vladivostok, and a few auxiliaries found refuge in neutral ports. Togo exploited his edge in 8-inch and 10-inch guns (31 to 23), better range finders, and a

14 In a cable message to the Admiralty, he stated “I have not the slightest prospect of recovering command of the sea with the force under my orders. The dispatch of reinforcements composed of untested, and some cases badly built vessels would only render the fleet more vulnerable.” Cited in Richard Hough, *The Fleet that Had to Die* (New York: Viking, 1958), 97.

15 On this tragic odyssey, see Hough's detailed report and analysis.

16 This account of the Battle of Tsushima is drawn from Horne, *Hubris*, pp. 9-109; Evans and Peattie, *Kaigun*, 16-124; Corbett, *Maritime Operations of the Russo-Japanese War*, Vol. 2, 240-293; and Rotem Kowner, *Tsushima* (Oxford: Oxford University Press, 2022), 40-82.

17 Kichitaro Togo, *The Naval Battles of the Russo-Japanese War* (St. Petersburg, FL: Red and Black, 2020), 69. Originally published in 1907 by Gogakukyokwai, Tokyo.

18 Vladimir Semenoff, *The Russo-Japanese War at Sea, Vol.1* (West Yorkshire: Leonaur, 2014), 6263.

19 Horne, *Hubris*, 99.

20 Committee of Imperial Defence, *Official History (Naval and Military) of the Russo-Japanese War* (London: HMSO, 1910-20), 788; Corbett, *Maritime Operations*, Vol. 2, 333.

2- to 4-knot speed advantage to maneuver his fleet effectively. The Japanese non-materiel advantages in training, readiness, morale, and leadership cannot be overlooked.²¹ All told, the Battle of Tsushima became known as one of history's most decisive naval battles.

Observers and Lessons

The U.S. Navy was aware of the potential value in having an observer present for the ongoing conflict. It dispatched Lt. Cdr. Newton A. McCully to St. Petersburg as the naval attaché in Russia. After presenting his credentials to the appropriate authorities, he took the extended trip to Port Arthur with other observers. Due to antagonisms between the Russian and American governments, McCully did not get the same access there that the British or German attachés received. Despite that, he doggedly culled information from his own shore-based observations, other attachés, dock workers, and sailors in the besieged Port Arthur before shifting to Vladivostok in August 1904. He submitted his report in 1906, where it was first sent to the Office of Naval Intelligence, and then later to the Historical Division, with minimal evidence of its being consulted for seven decades.²²

Most of the American naval establishment saw Tsushima as a confirmation of Mahanian principles — command of the seas, concentration of the fleet's capital ships, and decisive battle.

The bulk of the report consists of his summaries of Russian activities in the war zone and primarily Russian perspectives of the Japanese navy's efforts

to deny any Russian use of the sea. Absent any real official cooperation, his sources and coverage were uneven (the Battle of Tsushima is covered in just five pages) and lacked the credibility of a first-hand observer at sea. Still, his general conclusions were thoughtful, finding torpedo boats neither effective nor worth the resources spent on them, but that mines were well employed.²³ While hedging a bit, he concluded that volume of fire from 8-inch guns and below was key to the Japanese success.²⁴

Interpretation of Tsushima's tactics became an issue amongst the U.S. naval profession. A debate ensued between leading strategists and reformers, their positions hewing close to their pre-war theories and advocacy arguments.²⁵ Most of the American naval establishment saw Tsushima as a confirmation of Mahanian principles — command of the seas, concentration of the fleet's capital ships, and decisive battle.²⁶

Cdr. Bradley Fiske saw the affirmation of his stress on gunnery superiority and fire direction given the intensive training Togo enforced after the poor performance in the Yellow Sea.²⁷ He also found confirmation of the need for large ships with speed and sufficient armor, what he called "compromiseless ships." He was supported by then-Capt. William Sims, a noted

advocate for speed and long-range gunnery in U.S. Navy ship design. The innovative Sims, as inspector of target practice, saw the battle as further evidence in support of the enhanced fire control techniques he advocated for in the U.S. fleet.²⁸

In contrast, Alfred Thayer Mahan pushed for volume of fire over centralized fire control and larger caliber (but slower firing) guns. He argued that, "In part, the present Japanese success has been the triumph of greater numbers, skillfully combined, over superior individual ship power, too concentrated for flexibility of movement."²⁹ Mahan preferred rapid-volume fire instead of heavy, slow fire at long range, arguing that

21 Yoji Koda, "The Russo-Japanese War: Primary Causes of Japanese Success," *Naval War College Review* 58, no. 2 (Spring 2005): 10–44; Evans and Peattie, *Kaigun*, 125-127; Corbett, *Maritime Operations*, 382.

22 Until thankfully published by the Naval Institute. Newton A. McCully, *The McCully Report: The Russo-Japanese War, 1904-1905* (Annapolis, MD: Naval Institute Press, 1977).

23 McCully, 246-249.

24 McCully, 250.

25 Sterling, *Other People's Wars*, 73. In addition to Sterling's excellent overview of the debates see William McBride, *Technological Change and the United States Navy, 1865-1945* (Baltimore, MD: Johns Hopkins University Press, 2009), 71-77.

26 For Alfred Thayer Mahan, the concentration of naval power and offensive operations were the cardinal principles for the application of sea power. See John H. Maurer, "Alfred Thayer Mahan and the Strategy of Sea Power," in Hal Brands, ed. *The New Makers of Modern Strategy: From the Ancient World to the Digital Age* (Princeton, NJ: Princeton University Press, 2023), 180.

27 Bradley Fiske, "Compromiseless Ships," *Naval Institute Proceedings* 31, no. 3 (September 1905): 550-553.

28 Williams Sims, "The Inherent Tactical Qualities of the All-Big Gun, One Caliber Battleship of the High Speed, Large Displacement and Gun Power," *Naval Institute Proceedings* 32, no. 4 (1906), 1337-1366; Benjamin Armstrong, *21st Century Sims: Innovation, Education, and Leadership for the Modern Era* (Naval Institute Press, 2015).

29 Mahan in *Collier's Weekly*, June 17, 1905, cited by Fiske, "Compromiseless Ships."

a “multiplicity of projectiles, is better than individual weight of projectile, because it gives a greater number of hits.”³⁰ At the time, he was commenting against the design of the latest battleship under consideration in 1905 (USS Michigan), which did not have secondary batteries.³¹ The debate was intense, with President Theodore Roosevelt writing to the secretary of the Navy on the matter, hesitating to approve the design given the range of opinions he was receiving.³²

Mahan was correct that the Japanese victory at Tsushima was the product of numerical superiority in aggregate firepower including both main and secondary batteries, but his thinking was rooted in his ingrained cognitive anchor. While he correctly recognized that Togo’s decision to close the range allowed his batteries to quickly induce havoc on the Russian fleet, he largely ignored key technological advances and overlooked the effects of poor training and material condition of the Russian battleships. Repeating Togo’s moves against a better-trained ship with professional gunners could be a fatal generalization.

Sims, for his part, was willing to factor in new metrics for long-range firepower and conceded that speed generated tactical advantage. He attacked Mahan’s emphasis on the total weight of broadside or hits as a metric and insisted the true goal was the volume of penetrating hits.³³

This debate was not merely academic. It directly influenced a decision made by Roosevelt in 1906 on a pending battleship design for the USS South Carolina. Based on Sims’ extensive arguments, Roosevelt eventually approved the design of America’s first all-big-gun Dreadnought, with a main battery of eight 12-inch guns.³⁴ These big-gun ships would ultimately prove a key back-up to Roosevelt’s concept

of “big stick” diplomacy.

Some lessons were overlooked. Few commentators aside from McCully and Capt. William Pakenham noted the contributions of modern communications.³⁵ The cruiser Shinano Maru’s ability to keep Togo informed “in real time” ensured the Combined Fleet deployed and intercepted the Second Pacific Squadron in the strait. By the war’s start, Japan and Russia had deployed radios on all their capital ships. The Japanese used a system similar to Guglielmo Marconi’s wireless, and the Russians used a German product. The U.S. Navy was quite aware of the value of wireless but demurred at Marconi’s cost, eventually buying the Salby-Arco model in 1906, and soon caught up to Japan.³⁶

Finally, from the war’s opening to its climatic ending, the challenges and training implications of night operations were an important lesson to the Japanese, but almost no-one else.³⁷

British Lessons

Many countries sent observers to the war, with the British generating a prolific collection of analyses.³⁸ The Royal Navy, benefiting from Britain’s new alliance with Japan, was allowed to place naval attachés aboard Togo’s ships. Pakenham observed the Battle of Tsushima from the deck of the battleship Asahi, making him well positioned to offer insights.³⁹ His detailed reports about the battle reinforced Adm. Jackie Fisher’s enthusiasm for big-gun battleships and helped confirm the decision to build HMS Dreadnought.⁴⁰

Pakenham was enthusiastic about the impact from 12-inch guns: “While for the respect they instill 8-inch or 6-inch must then just as well be peashooters. By the time the 6-inch guns really came into play the action

30 A. T. Mahan, “Reflections, Historic and Other, Suggested By the Battle of the Sea of Japan,” *Naval Institute Proceedings* 32, no. 2 (April 1906), <https://www.usni.org/magazines/proceedings/1906/april/reflections-historic-and-other-suggested-battle-sea-japan>.

31 A. T. Mahan, “Retrospect Upon the War Between Japan and Russia,” *National Review* (May 1906) reprinted in A. T. Mahan, *Naval Administration and Warfare* (Boston: Little, Brown & Co, 1918), 131–173.

32 Roosevelt Letters, cited in Sterling, *Other People’s War*, 78.

33 Sims, “Inherent Qualities,” 1347–48.

34 However, the USS South Carolina lacked the speed of the forthcoming British design, which featured turbine engines. On the debate, see George W Baer, *One Hundred Years of Sea Power: The U.S. Navy, 1890-1990* (Stanford, CA: Stanford University Press 1994), 23–24; William M. McBride, *Technological Change and the United States Navy, 1865-1945* (Baltimore, MD: Johns Hopkins University Press, 2000), 71–77; Matthew Oyo, *In Command, Theodore Roosevelt and the American Military* (Sterling VA: Potomac Books, 2018), 53–58.

35 McCully, 96. The Russians tested some early Marconi systems, but fielded the German-made Slaby-Arco system according to Semenov, *The Russo-Japanese War at Sea*, 244–245.

36 Linwood S. Howeth, *History of Communications-Electronics in the United States Navy* (Washington, DC: U.S. Government Printing Office, 1963).

37 See the superb chapter on night fighting by Sean McLaughlin, “Stumbling in the Dark,” in Vincent O’Hara and Trent Hone, eds., *Fighting in the Dark: Naval Combat at Night, 1904-1944* (Annapolis, MD: Naval Institute Press 2023).

38 The British War Ministry and Admiralty published collections of observer reports and commissioned a formal historical record of the entire war. They even published an English translation of the Japanese naval history. See British Admiralty, *Reports of the British Naval Attaches*, 5 vols. (London Public Records Office, 1909–1910); Committee of Imperial Defence, *Official History (Naval and Military) of the Russo-Japanese War*, 3 vols. (London: HMSO, 1910–20); Admiralty War Staff, *Japanese Official Naval History of the Russo Japanese War*, 2 vols. (London: HMSO, 1906–1910).

39 Pakenham would go on to flag rank. For a deeper study of his observations and methods see Quentin Barry, *Command of the Sea: William Pakenham and the Russo-Japanese Naval War, 1904-1905* (Warwick: Helion 2019).

40 Pakenham would serve at Jutland later, with his pennant as Commander, Second Battle Cruiser Squadron flying from the battlecruiser HMS New Zealand. HMS New Zealand was heavily involved in the battle and Pakenham’s squadron lost HMS Indefatigable, with all but three hands lost.



was already going against Russia.”⁴¹ He contended “the fate of the day had lain with and had been entirely decided by heavy guns, if not the heaviest only ...”⁴²

The Japanese, despite the evident results, invested more in correcting shortfalls in attack doctrine, fast torpedoes, and improved night operations. The results of those lessons would be applied with lethality against the U.S. Navy decades later at Savo Island.

Oddly, Pakenham was inclined against centralized fire direction despite his emphasis on major-caliber guns. Centralized fire direction and salvos were a

logical implication of the increasing range of naval ordnance. His report played it down and was contradicted by McCully, who did not have the benefit of direct observation of two sea battles between battleships but did interview Russian sailors and his fellow foreign observers. Pakenham’s masters at the Admiralty, especially the First Sea Lord, seized upon his positive comments on big guns and long-range engagements that were the underlying logic behind HMS Dreadnought. They ignored the portion of his reports that eschewed centralized control of salvos.

Pakenham also reported on the introduction of wireless over his tenure, even suggesting the great value of a direction-finding device to better warn ships of the direction of transmissions.⁴³ He also offered astute interpretations for the limited effectiveness of Japanese flotilla attacks by torpedo boats. He blamed cautious tactics and long-range attacks, compounded by torpedoes set to run at maximum range (3,000 meters) but at

41 Pakenham quoted by Arthur J. Marder, *The Anatomy of British Sea Power: A History of British Naval Policy in the Pre-Dreadnought Era, 1880-1905* (New York: Octagon, 1976), 531.

42 Pakenham cited in Barry, *Command at Sea*, 203. From *Reports of the British Naval Attaches*, 167.

43 *Reports of the British Naval Attaches*, 127-128, cited in Barry, *Command of the Sea*, 179.

their slowest speed. This minimized their speed and accuracy.⁴⁴ In one night action, some six months into the war, the Japanese fired 38 torpedoes at a Russian squadron without recording a single hit — this despite the stationary nature of some of the targets.⁴⁵ In an attack on Port Arthur targeting the remaining battleship Sevastopol in December 1904, the Japanese launched over 120 torpedoes and managed to obtain only a single hit on Sevastopol and one on a destroyer. A summation of the war found that the Japanese fired roughly 370 torpedoes yet recorded just 17 hits over 15 months of operations.⁴⁶ Certainly, bad tactics and limited experience in night operations account for some of this performance.

Sir Julian Corbett's analysis of the contest in his classic *Maritime Operations of the Russo-Japanese War* noted the poor results from flotillas, assessing that the Japanese boats operated too independently of each other instead of as coordinated swarms.⁴⁷ Here Corbett reinforced Pakenham's observations and analysis.

The Japanese, despite the evident results, invested more in correcting shortfalls in attack doctrine, fast torpedoes, and improved night operations. The results of those lessons would be applied with lethality against the U.S. Navy decades later at Savo Island.⁴⁸ The Imperial Japanese Navy developed the Type 93 Long Lance torpedo, which was superior to Western models.⁴⁹ This example shows how difficult it is to extract the right lessons from current conflicts and underscores the importance of objective analysis.

One of the key insights from the Russo-Japanese War is the need for objectivity. As one scholar has noted, "Each attaché went to East Asia with his own prejudices and the recipients of the reports also had their own attitudes towards questions of

tactics, logistics and weaponry."⁵⁰ Both the sender and their respective home offices held institutional and individual preferences that impacted what they saw, what they reported, and how those reports were interpreted. We should remain keenly aware of this history as ongoing conflicts are leveraged as a navigational aid into an uncertain future.

Today's Battle for the Black Sea

Today's ongoing contest for control of the Black Sea is an immediate opportunity to see the difficulty of learning from current conflict. This part of the war against Ukraine was largely overlooked until now.⁵¹ Some may think there is little for the U.S. Navy to learn from the Russo-Ukrainian war, since many of the technologies used seem well established. Certainly, the challenge of missile defense, mines, and port security are not new missions, but the introduction of unmanned systems, including aerial swarms and semi-submersible drones, offer new wrinkles for naval planners to consider. These could be those opaque directional "fixes" noted in the epigraph.

Others may object to the need to harvest lessons from the relatively narrow waters of the Black Sea given the emerging focus on large-scale blue-water operations in the Indo-Pacific region. This would be a mistake, as the U.S. Navy will certainly face similar challenges, including plausible scenarios for amphibious raids and maintaining lines of communication to allies.⁵² This includes in littoral regions like the Baltic, the Sea of Japan, and perhaps in the South China Sea.⁵³ The importance of the Baltic Sea should not be underestimated, nor should it be considered a secure "NATO lake."⁵⁴

44 Marder, *Anatomy of British Sea Power*, 525.

45 Captured in McLaughlin, 33. For an overview on flotilla shortfalls, see Corbett, *Maritime Operations in the Russo-Japanese War*, Vol. 2, 105-126.

46 Marder, cited in McLaughlin, 41.

47 Corbett, *Military Operations of the Russo-Japanese War*, 320-322, 382-398. On the history of how Corbett came to write that masterpiece see Andrew Lambert, *The British Way of War: Julian Corbett and the Battle for a National Strategy* (New Haven: Yale University Press, 2021).

48 Evans and Peattie, *Kaigun*, pp. 499-500; Curtis Utz, Nicholas Roland, and Guy Nasuti, "What the Navy Learned from Guadalcanal," *Naval History and Heritage Command*, November 13, 2018, <https://usnhistory.navylive.dodlive.mil/Operations/Article-View/Article/2879600/what-the-navy-learned-from-guadalcanal/>.

49 Thomas G. Mahnken, "Asymmetric Warfare at Sea," *Naval War College Review* 64, no. 1 (Winter 2011): 6-7.

50 Philip Towle, "British Observers of the Russo-Japanese War," Conference Discussion Paper No. IS/98/351, July 1998.

51 Marc Santora and Steen Erlanger, "Turbulent Waters: How the Black Sea Became a Hot Spot in the War," *New York Times*, August 8, 2023, <https://www.nytimes.com/2023/08/08/world/europe/black-sea-russia-ukraine.html>.

52 B. J. Armstrong, "The Russo-Ukrainian War at Sea: Retrospect and Prospect," *War on the Rocks*, April 21, 2022, <https://warontherocks.com/2022/04/the-russo-ukrainian-war-at-sea-retrospect-and-prospect/>; Brett A. Friedman, "The Amphibious Dimensions of the Russo-Ukrainian War," *Fire for Effect* (Substack), December 2, 2022, <https://bafriedman.substack.com/p/the-amphibious-dimensions-of-the>.

53 For a prescient analysis of maritime security concerns in the Baltics see Martin Murphy and Gary Schaub, "Sea of Peace or Sea of War—Russian Maritime Hybrid Warfare in the Baltic Sea," *Naval War College Review* 71, no. 2 (2018): 123-148, <https://digital-commons.usnwc.edu/nwc-review/vol71/iss2/9/>. For a current assessment, see Katrine Westgaard, "The Baltic Sea Region: A Laboratory for Overcoming European Security Challenges," *Carnegie Endowment for International Peace*, December 23, 2023, <https://carnegieendowment.org/2023/12/21/baltic-sea-region-laboratory-for-overcoming-european-security-challenges-pub-91312>.

54 Sebastian Bruns, "From 'Flooded Meadow' to Maritime Hotspot: Keeping the Baltic Sea Free, Open, and Interconnected," *Carnegie Endowment for International Peace*, December 2023, <https://carnegieendowment.org/2023/12/20/from-flooded-meadow-to-maritime-hotspot-keeping-baltic-sea-free-open-and-interconnected-pub-91303>.

As after the Battle of Tsushima, there are many competing observations and claims in the current war in Ukraine, particularly about the operational impact of drones and loitering munitions.⁵⁵ Some contend that technology, particularly around swarming unmanned systems, has not wrought a revolution in the character of war,⁵⁶ while others hold that there is ample evidence of “game-changers” in how wars will be fought.⁵⁷ Splitting the difference, a third chorus finds that drones have demonstrated only evolutionary development in Ukraine, though they recognize that the potential for transformative impact exists.⁵⁸

Some have properly noted that the Ukrainian success benefited from old, poorly maintained, and thinly crewed Russian warships.⁵⁹ The same analysis could have found that the Ukrainian success was generated by inexperienced operators and improvised attack systems that will only mature further. A more comprehensive and objective analysis in the future may perhaps be more discerning about trends and more imaginative about how others can adopt the nascent technologies bearing modest success now.

Ukrainians have used simple techniques and modern missile systems to destroy several Russian vessels, including the Black Sea flagship.⁶⁰ While the Ukrainians have no “afloat” navy to speak of, they

have fielded the unmanned surface craft known as Sea Baby, which successfully attacked a Russian Navy vessel in August 2023.⁶¹

Continuing to adapt, they have managed to destroy over 40 percent of the Russian Black Sea Fleet’s tonnage and forced it to redeploy its headquarters out of Crimea back to Novorossiysk.⁶² Working “jointly,” Ukrainian forces have used missiles and drones (aerial and naval) to successfully destroy or severely damage over 25 naval vessels and other maritime infrastructure,⁶³ including the landing ship Caesar Kunikov on Feb. 14, 2024.⁶⁴ Russian President Vladimir Putin has been so frustrated with the performance of his Black Sea naval force that he has fired its admiral.⁶⁵

Any “instant lessons” coming from the ongoing Russo-Ukrainian War will require more thorough analysis by objective analysts to determine what observers should conclude about Ukraine’s valiant operations and what to internalize. But first, the U.S. naval establishment has to devote some attention to the fight.

Today’s naval services can learn something from the naval component of Ukraine’s valiant defense.⁶⁶ While it may not resemble the pacing threat scenarios in the Pacific, there are implications.⁶⁷ Yet, drawing *valid* lessons will be much harder than it appears. Fortunately, the U.S. Navy is better postured today

55 Rob Lee, “The Tank is Not Obsolete, and Other Observations About the Future of Combat,” *War on the Rocks*, September 6, 2022, <https://warontherocks.com/2022/09/the-tank-is-not-obsolete-and-other-observations-about-the-future-of-combat/>; Stephen Biddle, “Back in the Trenches: Why New Technology Hasn’t Revolutionized Warfare in Ukraine,” *Foreign Affairs* (September/October 2023), <https://www.foreignaffairs.com/ukraine/back-trenches-technology-warfare/>.

56 Eric Schmidt, “The Future of War Has Come in Ukraine: Drone Swarms,” *The Wall Street Journal*, July 7, 2023, <https://www.wsj.com/articles/the-future-of-war-has-come-in-ukraine-drone-swarms-kamikaze-kyiv-31dd19d7>; Stephen Biddle, “Back in the Trenches”. See also the response by T. X. Hammes, “Out of the Trenches,” *Foreign Affairs* (November/December 2023), at <https://www.foreignaffairs.com/out-trenches>.

57 T. X. Hammes, “Game-changers: Implications of the Russo-Ukraine war for the future of ground warfare,” The Atlantic Council, Issue Brief, April 2023, <https://www.atlanticcouncil.org/in-depth-research-reports/issue-brief/game-changers-implications-of-the-russo-ukraine-war-for-the-future-of-ground-warfare/>.

58 Stacie Pettyjohn, *Evolution, Not Revolution: Drone Warfare in Russia’s 2022 Invasion of Ukraine*, (Washington, DC: Center for a New American Security, January 2024), <https://www.cnas.org/publications/reports/evolution-not-revolution>.

59 Steve Wills, “Lessons for the U.S. Navy from the Sinking of Russian Ship by Surface Drones,” *Defense Opinion*, February 2024, <https://defenseopinion.com/lessons-for-the-u-s-navy-from-the-sinking-of-russian-ship-by-surface-drones/536/>.

60 On the sinking of Moskva see “How Ukraine’s Virtually Non-existent Navy Sank Russia’s Flagship,” *1843*, July 27, 2023, <https://www.economist.com/interactive/1843/2023/07/27/how-ukraines-virtually-non-existent-navy-sank-russias-flagship>. More recently, the Ukrainians have used longer-range missile systems to destroy Russian landing ships in Crimea. See “Ukraine Claims it Destroyed Russia’s Tank Landing Ship in Feodosia,” *CNN*, December 2023, <https://www.cnn.com/2023/12/26/europe/ukraine-claims-russian-tank-landing-ship-destroyed-intl-hnk-ml/index.html>.

61 Marc Santora and Christiaan Strieber, “Ukraine Hits a Distant Russian Ship, Showing Reach of Naval Drones,” *New York Times*, August 4, 2023, <https://www.nytimes.com/2023/08/04/world/europe/ukraine-drone-russian-ship.html>.

62 Mark Cancian, “Ukraine’s Victory at Sea,” *Foreign Affairs*, February 8, 2024, <https://www.foreignaffairs.com/ukraine/ukraines-victory-sea>.

63 Adapted from data in Mark Cancian, “Ukraine’s Victory at Sea”; Maria Varenikova and Marc Santora, “Ukraine, Struggling on Land, Claims to Deal Blow to Russian Warship,” *New York Times*, February 14, 2024, <https://www.nytimes.com/2024/02/14/world/europe/ukraine-strike-russia-black-sea.html>.

64 On Ukraine’s use of naval drones see Simon Rushton, “Drone attack sinks Tsezar Kunikov warship on Black Sea, Ukraine claims,” *National News*, February 14, 2024, <https://www.thenationalnews.com/world/europe/2024/02/14/drone-attack-sinks-tsezar-kunikov-warship-on-black-sea-ukraine-claims/>.

65 Julian E. Barnes, Maria Varenikova and Paul Sonne, “After Ukrainian Strikes, Russia Fires Top Naval Commander” *New York Times*, March 12, 2024, <https://www.nytimes.com/2024/03/12/us/politics/russia-navy-commander-fired.html>.

66 George Hageman, “The First Naval Battle of the 21st Century,” *Naval Institute Proceedings* 36, no. 1 (February 2022), <https://www.usni.org/magazines/naval-history-magazine/2022/february/first-naval-battle-21st-century>.

67 “Russian Warship Damaged in Ukrainian Drone Attack,” *New York Times*, August 4, 2023, <https://www.nytimes.com/live/2023/08/04/world/russia-ukraine-news>; Jillian Kay Melchior, “Ukraine’s Counteroffensive Is Stalled, but Not at Sea,” *Wall Street Journal*, November 21, 2023, <https://www.wsj.com/articles/ukraine-racks-up-victories-at-sea-in-counteroffensive-black-sea-navy-grain-6425494a?utm>.



to collect and appropriately interpret lessons than it was at the time of Tsushima.⁶⁸

However, the Navy should ensure that it assigns observers to gain *access* to data on ongoing Black Sea observations, and that it assigns a team of *objective* and credible naval analysts to assess both Ukrainian and Russian tactics and technological capabilities. The team should not be dependent upon Ukrainian inputs. This analysis should not simply judge what worked and what did not. Diligent *analysis* about **why** certain operations were successful will be required. Like Pakenham's analysis of Japanese torpedo shortfalls at the Battle of Tsushima, U.S. policymakers and NATO naval commanders need to understand the specific contextual conditions surrounding both Russian and Ukrainian operations.

We do not believe that the Navy needs to embrace an unmanned systems-centric fleet, but it does need to increase the velocity of experimentation and transition to procurement with greater urgency.

They also need to understand Russian counter-actions and adaptations to prepare NATO's forces, while also studying the Russian Black Sea Fleet's deficiencies for future exploitation. In order to make solid decisions on what investments in weapons and platforms are warranted, or what new doctrine is

required, the study team should carefully determine what can be generalized for application in the future by U.S. naval forces. What lessons are relevant and transferrable to anticipated naval missions including in NATO's area of operations, but also in the Indo-Pacific and Persian Gulf? Just as important, Western and Asian navies should consider what the Chinese navy is learning from contemporary warfare as well, and how it impacts its naval capabilities.⁶⁹

Surface and undersea drones are having an impact. While not yet game-changers, their maturation is likely to continue, and America's competitors are likely to pursue their development.⁷⁰ The U.S. Navy has numerous investments in unmanned undersea vehicles at present that are far more sophisticated than Kyiv's improvised remotely operated armada.

The U.S. Navy is pursuing a hybrid fleet of manned and unmanned ships, and expects to see the new robotic systems operational in the next 10 to 15 years.⁷¹ The Navy's Task Force 59 is continuing a wide range of experiments in unmanned surface vehicles.⁷² The Navy spent \$181 million developing core technologies for robotic unmanned undersea drones in 2024, which represents a sliver of its roughly \$200 billion budget. It has requested only \$121 million for development in 2025.⁷³ The fleet has many deficiencies to fill, but spending less than one tenth of one percent of its budget on developing unmanned systems that will enhance the survivability and lethality of the force appears ill-advised.⁷⁴ The secretary of the Navy's annual posture testimony to Congress this year did not include any substantive statements about robotic surface or subsurface system investments.⁷⁵ That

68 The Naval War College has an excellent faculty and is augmented by the Center for Naval Warfare Studies to conduct adversarial studies and gaming. Another discontinuity is the Center for Naval Analyses, the U.S. Navy's research entity, which has an active field research program.

69 Lyle Goldstein and Nathan Waechter, "What Chinese Navy Planners Are Learning from Ukraine's Use of Unmanned Surface Vessels," Commentary, RAND, April 4, 2024, <https://www.rand.org/pubs/commentary/2024/04/what-chinese-navy-planners-are-learning-from-ukraines.html>.

70 Jared Malsin, "Ukraine's Sea Drones Alter Balance of Power in Black Sea," *Wall Street Journal*, August 11, 2023, <https://www.wsj.com/articles/ukraines-sea-drones-alter-balance-of-power-in-black-sea-391cebee>; David Brennan, "Russia's Black Sea Fleet Suffers Fresh Setbacks," *Newsweek.com*, August 1, 2023, <https://www.newsweek.com/russia-black-sea-fleet-suffers-fresh-setbacks-1816598>; Marc Santora, "How Ukraine, With No Warships, Is Thwarting Russia's Navy," *New York Times*, November 12, 2023, <https://www.nytimes.com/2023/11/12/world/europe/ukraine-navy-admiral-black-sea.html>.

71 Lisa Franchetti, "CNO Delivers Keynote Address at West 2024," February 13, 2024, <https://www.navy.mil/Press-Office/Speeches/display-speeches/Article/3676251/cno-delivers-keynote-address-at-west-2024/>; Patrick Tucker and Lauren Williams, "Navy robot ships on a 15-year path to operating 'at speed and scale,' CNO says," *Defense One*, February 13, 2024, <https://www.defenseone.com/threats/2024/02/navy-15-year-path-operating-robot-ships-speed-and-scale-cno-says/394162/>.

72 Roland Franklin, "U.S. 5th Fleet Launches New Task Force to Integrate Unmanned Systems," U.S. Central Command, September 9, 2021, <https://www.cusnc.navy.mil/Media/News/Display/Article/2768468/us-5th-fleet-launches-new-task-force-to-integrate-unmanned-systems/>.

73 Department of Defense, Fiscal Year (FY) 2025 Budget Estimates, Navy Justification Book Volume 1 Research, Development, Test & Evaluation, Navy, March 2024, pg. xvi.

74 And contrary to the advice of its own research center. See Center for Naval Analyses, *The Department of the Navy and Strategic Competition with the People's Republic of China*, September 2023, 11-12, <https://www.cna.org/reports/2023/09/The-Department-of-the-Navy-Strategic-Competition-PRC.pdf>.

75 "Statement of the Honorable Carlos Del Toro on the Posture of the United States Navy in Review of the Defense Authorization Request for Fiscal Year 2025 and the Future Years Defense Program before the Senate Armed Services Committee," May 16, 2024, https://www.armed-services.senate.gov/imo/media/doc/del_toro_statement.pdf. The statement did formally announce to Congress that the Navy had established a rating/specialty for robotics specialists, which is a good sign, and on May 17, 2024 the Navy stood up Unmanned Surface Vessel Squadron 3 to support testing. See Karil Yeager, "SURFOR Establishes Unmanned Surface Vessel (USVRON) Three," Commander, U.S. Surface Forces, Pacific, May 17, 2024, <https://www.surfpac.navy.mil/Media/News/Article/3779650/surfor-establishes-unmanned-surface-vessel-squadron-usvtron-three/>.

said, the beginnings of an argument — like the Sims versus Mahan debate — is just starting in the Navy's professional journal.⁷⁶

Greater urgency and funding appears warranted. As naval analyst Bryan Clark concludes, "Ukraine has shown how effective they can be and how they can be employed in current operations. The U.S. Navy needs to embrace that lesson and field combat sea drones right away."⁷⁷ We do not believe that the Navy needs to embrace an unmanned systems-centric fleet, but it does need to increase the velocity of experimentation and transition to procurement with greater urgency.⁷⁸ It is doubtful that America's Asian competitor is going to give it 15 years to get its act together. China already dominates the small drone market and has prototypes in development for large undersea vehicles.⁷⁹ The Asia-Pacific region could become far more complex if the People's Liberation Army Navy obtains a dominating position in the undersea domain with drones to support either gray-zone operations or its aggressive posture in the South China Sea.⁸⁰

The application of these systems (both surface and sub-surface variants) should be monitored closely for both offensive and defensive tasks.⁸¹ The U.S. Navy, and its allies and partners, are very likely to face adversaries who will deploy autonomous or remotely directed systems against their naval forces, commercial shipping, and maritime infrastructure. It would certainly behoove U.S. leaders to think hard about what lessons competitors may draw and how these may alter the adoption of technology by potential adversaries.⁸²

Carefully drawn lessons based on access to more information and objective and rigorous analysis are critical in determining the course and speed of the defense establishment's journey into the future. Ultimate success will depend on the U.S. Department of Defense gaining access to operational data and assigning credible and objective analysts to the problem, since the United States appear to have no Navy or Marine Corps observers embedded or postured with Ukrainian forces.⁸³ Properly supported, observers and the intelligence community can yield keen insights to advance naval modernization to counter Russia in the immediate future, as well as other potential competitors in the Indo-Pacific.⁸⁴ While proponents for change should retain a sense of humility about anticipating the future, policymakers should work to ensure that parochial or bureaucratic barriers or aims or fixed operational doctrines do not retard the generation of new insights and necessary course corrections.

Conclusion

Drawing lessons from history is a difficult art, requiring humility and care.⁸⁵ The exploitation of history for lessons is best achieved in a dialectical mode, an interaction of the past, the present, and the future.⁸⁶ History is best employed to prepare policymakers to ask the right questions and to train them to focus on discontinuities rather than shallow

76 See the push back on the Department of Defense's drone initiative in a prize-winning essay by a Navy strategist, Sam Tangredi, "Replicate Ordnance Not Cheap Drones," *U.S. Naval Institute Proceedings* 150, no. 3 (March 2024), <https://www.usni.org/magazines/proceedings/2024/march/replicate-ordnance-not-cheap-drones>.

77 Quoted in Joe Brock and Mike Stone, "Sea Drone Warfare Has Arrived. The U.S. Is Floundering," *Reuters*, May 6, 2024, <https://www.reuters.com/business/aerospace-defense/sea-drone-warfare-has-arrived-us-is-floundering-2024-05-06/>.

78 Scott Savitz, "Creating the Uncrewed-Centric Navy of the Mid-21st Century," RAND blog, November 30, 2023, <https://www.rand.org/pubs/commentary/2023/11/creating-the-uncrewed-centric-navy-of-the-mid-21st.html>.

79 Gabriel Honrada, "China Leaks a Blueprint for Drone War Dominance," *Asia Times*, February 7, 2024, <https://asiatimes.com/2024/02/china-leaks-a-blueprint-for-drone-war-dominance/>.

80 For insights on how the Chinese might apply their unmanned assets short of war, see Prakash Panneerselvam, "Unmanned Systems in China's Maritime 'Gray Zone Operations,'" *The Diplomat*, January 23, 2023, <https://thediplomat.com/2023/01/unmanned-systems-in-chinas-maritime-gray-zone-operations/>.

81 On surface drones see Michael McHugh, "Explosive USVs for Littoral Warfare," *Naval Institute Proceedings* (December 2023): 100-101; and for wider applications in area denial, see Mike Knickerbocker, "Written in Black and Red: Asymmetric Threats and Affordable Unmanned Surface Vessels," *War on the Rocks*, January 3, 2024, <https://warontherocks.com/2024/01/written-in-black-and-red-asymmetric-threats-and-affordable-unmanned-surface-vessels/>.

82 Sterling, *Other People's Wars*, 9.

83 This point has been stressed previously, see Zachary Griffiths, "U.S. Military Observers and Why They are Needed in Ukraine," *War on the Rocks*, May 12, 2023, <https://warontherocks.com/2023/05/u-s-military-observers-and-why-they-are-needed-in-ukraine/>.

84 Imposing costs is an important objective of asymmetric tactics that NATO might exploit with low-cost surveillance or offensive drones. See the insights of Sidharth Kaushal and René Balletta, "An Asymmetric Approach to the Use of NATO's Maritime Forces in Competing with Russia," Royal United Services Institute, Occasional Paper, February 2024, <https://www.rusi.org/explore-our-research/publications/occasional-papers/asymmetric-approach-use-maritime-forces-competing-russia>.

85 Joseph Steib, "History Has No Lessons for You: A Warning for Policymakers," *War on the Rocks*, February 6, 2024, <https://warontherocks.com/2024/02/history-has-no-lessons-for-you-a-warning-for-policymakers/>.

86 Michael Evans, "The Value of a Contemporary Approach to History," in Thomas Mahnken, ed., *Learning the Lessons of Modern War* (Stanford, CA: Stanford University Press, 2020), 18.


analogies.⁸⁷ The same challenges attend to drawing early warning signals from contemporary wars.

Andrew Lambert reminds us that military services cannot innovate without mastering the past, as it informs where they are now and informs the course to be set for the future.⁸⁸ Mahan was at his best in looking at the past, but became too tightly wed to it, while the British Fisher and the American Sims saw more into the future. The same struggle over how to weigh the enduring continuities of war against the onset of disruptive change will challenge modern policymakers, just as it did after 1905. One can see signs of this challenge in the debate over the future of armor and the transformative efforts of unmanned systems today.

For today's U. S. naval strategist, the present centers on peer-level scenarios — large-scale attacks by the People's Liberation Army against Taiwan or Japan, featuring ballistic missiles, anti-ship cruise missiles, and undersea warfare. This is an appropriate priority, but the Russo-Ukrainian war highlights several other specific challenges that naval planners should consider, including asymmetric sea denial, as well as the need to rapidly adapt to emerging technologies and respond to the counteractions of opponents.⁸⁹

Standing still is not an option. As the chief of naval operations noted in a speech at the annual conference of the Surface Navy Association, "We can only become the Navy the Nation needs if we think, act, and operate differently ... if we use data to assess and measure our progress ... if we capitalize on the lessons learned from our past ... and if we unleash the creative power of the American Sailor and American Industry."⁹⁰

The chief of naval operations is spot on. Yet, not all the lessons the U.S. Navy can benefit from have to come from its own past — they can be derived from observations from contemporary wars where the United States is not directly engaged. Rather than overlook events in the Black Sea, the U.S. Navy's leadership should search for the "break in the clouds" and see what can be prudently applied now to gain an edge in a dynamic era of warfare. The signals offered may be appear weak and tentative but can be exploited if the institutional learning process is objective and rigorous. Good observers and solid analysis are key.

The opportunity for a navigational "fix" is there for those willing to carefully interpret events to sail forward prudently into the future. 

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Image: Library of Congress⁹¹

87 For insights on the dangers of analogical reasoning, see Richard E. Neustadt and Ernest R. May, *Thinking in Time: The Use of History for Decision Makers*, New York: Free Press 1988. On the importance of discontinuities see Eliot A. Cohen, "The Historical Mind and Military Strategy," 49, no. 4 *Orbis* (Autumn 2005): 575-588.

88 Andrew Lambert, "Liberal Values and Imperial Evolution," in Alessio Patalano and James A. Russell, eds., *Maritime Strategy and Naval Innovation* (Annapolis, MD: Naval Institute Press, 2021), 71.

89 The efforts of the Houthis in the Red Sea appear to reinforce the game-changer school of thought over the traditionalists. On recent events off Yemen, see Nick Childs, "Red Sea Challenges Give Naval Planners More to Ponder about Future Warfare," International Institute for Strategic Studies, Military Balance blog, January 31, 2024, <https://www.iiss.org/online-analysis/military-balance/2024/01/red-sea-challenges-give-naval-planners-more-to-ponder-about-future-warfare/>.

90 Chief of Naval Operations, Speech at the Surface Navy Association National Symposium, Washington, DC, January 9, 2024 <https://www.navy.mil/Press-Office/Speeches/display-speeches/Article/3641326/cno-delivers-remarks-at-the-surface-navy-association-national-symposium/>.

91 For the image, see <https://www.loc.gov/item/2009631617/>.

