WNHA

Western Naval History Association

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This issue features the work of Sam J. Tangredi, one of the WNHA's co-founders. Sam is currently the Leidos Chair of Future Warfare Studies at the Naval War College in Newport, R.I. He has published five books and more than 150 articles and has won, among other honors, the U.S. Naval Institute Arleigh Burke Prize and the U.S. Navy League Alfred Thayer Mahan Award for Literary Achievement.

Dr. Sam J. Tangredi speaking at the 2020 Symposium

In his article, Sam's topic is China's quest for western naval technology in the 19th Century and some of the ways that quest foreshadows current efforts to improve its naval forces.

An objective of the WNHA is to promote the work of its members. We are very pleased that member Brian Walter has just published his first book, *The Longest Campaign: Britain's Maritime Struggle in the Atlantic and Northwest Europe, 1939-1945*. Brian, whom many of you met at the 2020 Symposium discusses his work on page 2.

In other member news, check out *Warship 2020*, which was published this May. Member Stephen McLaughlin edited and translated from Russian an article *"Italia* and *Lepanto:* Giants of the Iron Century*"* by Sergei Vinogradov. Michael Whitby, who last issue contributed an excellent article on Operation Tunnel, published "On Barren, Hideous Rocks: the Grounding of HMS *Dauntless,* July 1928." Congratulations!

The Proceedings Podcast is a regular feature of Proceedings magazine. Since our last newsletter the podcast has featured Richard Frank, our 2020 Keynote Speaker, talking about *Tower of Skulls*, on episode 156, 29 April 2020 and Vincent O'Hara talking about the Battle of Okinawa on episode 147, 1 April 2020.

Any member who would like to share news about his or her activities or recent publications please contact the editor at info@wnha.net

Contact the WNHA

Email to info@wnha.net for more information about the Association. Check out our web page at wnha.net. We're interested in members who are interested in naval history. Students are welcome.

The Longest Campaign, Britain's Maritime Struggle in the Atlantic and Northwest Europe, 1939-1945

By Brian E Walter
Oxford & Philadelphia: Casemate Publishers
ISBN 9781612008561

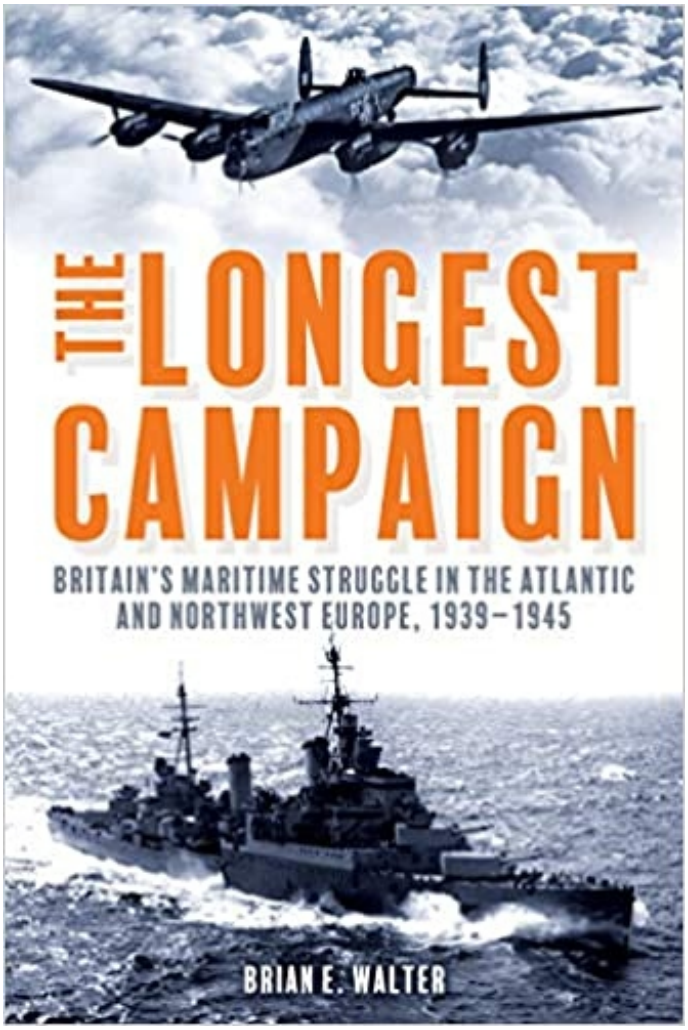
1.Why did you write this book and who is your intended audience?

The origins of this book date back more than 30 years. I have always been a student of military history. Even as a child I remember reading books about the Battle of Britain or the great carrier battles in the Pacific war. Still, it wasn't until the spring of 1988 when, as a 1st Lieutenant in the United States Army Officer Advanced Course, I determined that I too could become a historian and author. Little did I know it would take this long to fulfill my dream, but I think the result was worth the wait as it gave me the opportunity to do extensive research with inputs from hundreds of primary and secondary sources.

My goal in writing this book was to produce the quintessential, single-volume source covering Britain's maritime struggle in the Atlantic theater during World War II. It is written to appeal to both casual consumers of military history as well as more serious students. The Atlantic campaign was a colossal contest waged over a period of six years consisting of many different components. Numerous other books have been written on the subject, but most have only covered specific periods or aspects of the campaign. By comparison, this book looks at the entire gambit of the maritime struggle giving a balanced review to all timeframes and portions without undo bias or commentary. It explores the contributions made by all the participants including the Royal Navy, Royal Air Force and British merchant marine as well as their Allied counterparts. It puts the maritime conflict within the context of the overall war effort and shows how the various operations and campaigns were intertwined. Finally, it provides unique analysis regarding the effectiveness of the British maritime effort and the role it played in bringing about the overall Allied victory.

2. Describe the process you went through to get it published. Any lessons or suggestions to the members?

I quickly learned that writing a book is only part of the process. Finding someone to publish it was an adventure all its own. Originally, the book was a comprehensive history of the entire British maritime effort during World War II. It was 25 chapters and over 300,000 words long. I submitted it to various military publishers only to wait extended periods of time to receive rejections or no responses at all. Finally, one of the



publishers gave me the courtesy of some feedback along with my rejection. They told me it was too long; that books this long were hard to justify economically. Based upon this, I decided to split the book into sections corresponding to

the various theaters of the war. *The Longest Campaign* is the first result of this effort. Fortunately, when I resubmitted it for consideration, I had more success as two publishers expressed interest in publishing it. Of these, I settled upon Casemate, and as they say, the rest is history.

3.What are the major point made in your work? How does it contribute to the literature? What is special about it?

Although arguably less ostentatious in its execution than the concurrent naval conflicts underway in the Pacific and Mediterranean, the Atlantic campaign constituted the war's premier maritime struggle in terms of its size, duration and relevance and was the essential catalyst for the overall Allied victory. More than just another retelling of the U-boat scourge, *The Longest Campaign* reveals all aspects of this colossal struggle in which British maritime power helped dissuade invasion, sustained the nation's logistical needs, degraded German capabilities, provided needed aid to the Soviet Union and fulfilled the army's support requirements. In doing so, the book incorporates extensive specificity regarding the forces involved, results attained and casualties sustained during the various engagements and operations thus wading through the noise of conflicting data and disinformation to present a concise, accurate and informative narrative. Finally, the book provides unique analysis regarding the role and effectiveness of the British maritime effort including a first ever assessment of British warship losses compared to corresponding victories over the competing Axis navies.

One of the biggest things that surprised me in writing this book was the scope of the conflict. Although not normally viewed as a major naval power, the German Kriegsmarine (navy) actually accumulated more principal warships than did the Imperial Japanese Navy during the war. In fact, this wasn't even a close comparison as the Kriegsmarine was twice the size of its Japanese counterpart in terms of raw numbers. While roughly three-quarters of these consisted of U-boats, this force also included 450 surface warships ranging from battleships to fleet minesweepers. Likewise, the Germans suffered more principal warship losses in the Atlantic and waters off Northwest Europe than did all of the participants in the Pacific conflict combined. Although there was substantial American participation in this struggle (which is covered in the book), this was predominately a British effort. Britain's share of total German maritime losses (both sole and partial) included 100 percent of their capital ships, 75 percent of their cruisers, 80 percent of their destroyers and torpedo boats, 77 percent of their U-boats and 73 percent of their merchant vessels. Given these results and the essential nature of this conflict, the book concludes that the Atlantic campaign constituted the finest hour in Britain's long and illustrious maritime heritage.

WNHA Upcoming Events

The plans of the WNHA have been affected by the COVID 19 restrictions and their impact on travel and group meetings. The board has deferred a decision on the location and format of the 2021 Symposium until the end of August, hoping the situation will be clarified by then. However, the rise of video conferencing and the ease of holding online meetings has suggested that the WNHA explore that format for member activities. The board has been holding board meetings online via ZOOM and we are thinking of having general membership meetings using the same format. Other possibilities are holding regular discussion sessions or having single presentations followed by question and answer and group discussion sessions, with the whole program running roughly an hour. We solicit input and would like to know if the membership is interested in such online activities and, if so, any suggestions as to content.

Members who would like to publicize any recent activities, or who wish to share research or who are looking for help in their research may contact the WNHA at info@wnha.net.

All of the Superior Skill of the West would become the Skill of China: The Chinese Adoption of Western Naval Technology: 1840-1894

by Sam J. Tangredi

Let us now, in this time of peace, adopt the superior skill of the barbarians in order to control them with greater effect, as we would before have employed barbarians to fight against barbarians. The barbarians are superior in three ways: firstly, warships; secondly, firearms; and thirdly, methods of military training and discipline of soldiers. (1)

Those are the words of Lin Zexu (Lin Tse-Hsu), Imperial High Commissioner of Guangzhou (Canton) between 1839-1841. He was a Confucian-trained scholar who had caught the Emperor of China's attention with a memorandum proposing the prohibition of the opium traffic, which the British East India Company used as a way to balance their trade with China. Lin arrived in Guangzhou contemptuous of Western naval superiority. In a memorial written upon his first inspection tour of the river forts of Guangzhou in 1839, he proclaimed: "Should any unauthorized foreign ships attempt to enter ...they will find it impossible to go further than the chained timbers... guns from all the forts will fire on them, and the foreign ships may easily become ashes." (2)

After two years in Guangzhou, however, Lin reversed his view—at least in his unofficial writings—suggesting "...[as] we have learnt nothing about their superior skill in manufacturing armaments...let us build a dock and an arsenal... One or two 'barbarian eyes' from France and America should be invited to bring foreign artisans to Canton to supervise the construction of ships and to manufacture firearms. ...western pilots should also be invited to train men in navigation and gunnery. Then there should be a careful selection of clever artisans and good sailors from Fukien and Kwangtung to learn these things... [and] all the superior skill of the West would become the skill of China."(3)

Lin's staff routinely made inquiries of foreign merchants and ship's captains. This caught the foreign community's attention. One account states that, "if the Chinese people are really interested in securing [our] knowledge, it is easy for them to do so. All the experienced merchants doing foreign trade, the interpreters, and the pilots, can be used as sources of information. But [the Chinese] are proud and self-sufficient, despise all foreigners, and ignore them. Commissioner Lin is an exception; his action is completely different than that of the other Chinese." (4) The high commissioner was indeed an exception. He also funded translations of Western books and articles which were later compiled in Chinese in the Haiguo tuzhi (Hai Kuo T'u Chih) or Illustrated Record of the Maritime Nations. His ideas prefigured the way Japan

East India Co ship *Nemesis* destroying Chinese war junks during the First Opium War, 1843. painting by E. Duncan

Lin Zexu, ca. 1843

successfully industrialized. However, while their sense might have become clear to a traditional scholar serving in the entrepot of Guangzhou, they displeased the Emperor and what can only be described in modern terms as the "Confucian Mandarin party" that controlled the government bureaucracy.

When the so-called "First Opium War" broke out in 1841 (in part incited by Lin), British warships broke the chained timbers, destroyed the forts, and won the war, prompting the Emperor to recall Lin and exile him for three years in the far western province of Sinkiang. His unofficial writings were first published during this period of exile. (5) Although later pardoned and restored to an official post, Lin no longer advocated modernization—undoubtedly to avoid another exile, and, thus, is seldom seen by historians as one of the first to recognize China's need to adopt foreign technologies. (6) Nonetheless, Lin's unofficial correspondence inspired a cadre of reformers determined to improve the imperial maritime forces in the three areas of Western advantage he identified: warships, ordnance, and military and naval training.

In the next fifty years, in what would come to be called the "Self-Strengthening Movement," Chinese officials, scholars and military officers, such as Wei Yuan, Den Tinzhen (Teng T'ing-chen), Zuo Zongtang (Tso Tsung-t'ang), Ding Ruchang (Tin Ju-cha'ng), and Li Hongzhang (Li Hung-chang) adopted the methods first proposed by Lin and purchased Western ships, created arsenals run by Western engineers, and employed Western military and naval officers (albeit some of marginal capability). (7) However, imperial Chinese naval defeats by both the French (1884-1885) and Japanese (1894-1895) set back their reform efforts, which were always resisted by the conservatives in the imperial court in Beijing. It is also of interest that the reformers, like the imperial court, sought to limit Western cultural influences even as they benefitted from technology transfer.

American Technology and Ambiguous Policy

The role of the United States in the transfer of Western technology to China has always been important, then, as it is now. Ironically, in fact, one of the first acts of the United States in establishing diplomatic relations with Imperial China was to freely provide technical military information. In 1844, Caleb Cushing was assigned as treaty negotiator for the United States and "brought with him technical works on guns, ships, forts, and military and naval strategy, for presentation to the Chinese government." (8) In light of China's recent defeat in the First Opium War, the U.S. government thought that such generosity would be particularly appreciated and symbolize a "new era" in peaceful relations. (9) However, since the Imperial court did not wish to officially acknowledge it had any need for technology from the West, there is no indication that these books and plans were ever read, let alone implemented.

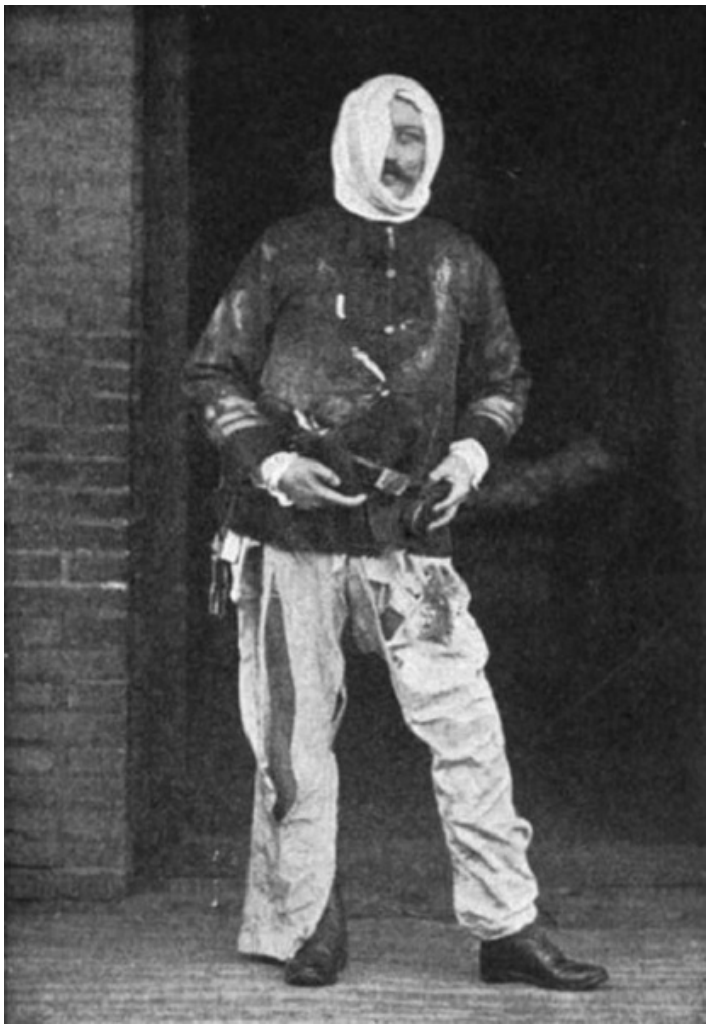
Yet, this beginning is suggestive of an ambiguous American view of China: was it to be an ally, an economic partner, or a strategic competitor? Many analysts maintain that U.S. policies today simultaneously treat China as both a trading partner and strategic rival with indeed ambiguous results.

This ambiguous policy was reflected in American technology transfers during the 1840-1894 period. On the one hand, there was the 'pressure of benevolence,' particularly from missionary societies, to help to build a modern and scientific China and improve the conditions for the people. Buttressing this was the already-established pattern of the 'China trade' and the immense market the burgeoning Chinese population could be for American businesses.(10) The fact that Imperial China's greatest antagonist was Great Britain (actually the British East India Company), America's former greatest antagonist, also influenced American views. Should America not help another nation—particularly one with such a vast potential market—resist colonial powers? (11)

On the other hand, there remained tension between Western distain for the corruption and disorganization of the Chinese Imperial government, especially after it came under effective control of the dowager empress Cixi (Tz'u-hsi) from 1861 to 1908 and the simmering hostility of the Chinese population towards Westerners in general. (12) Moreover, the Emperors of the 1840-1894 period clearly viewed Westerners as racially inferior barbarians. Westerners employed in the service of the Chinese government were never considered true partners, but rather temporary expediencies.

Knowledge from American and other Western Advisors

While individual Chinese officials of the Self-Strengthening Movement desired the new barbarian technologies for use against rebels and the barbarians themselves, the Imperial court itself remained afraid of any serious introduction of Western thought. Nevertheless, Chinese merchants and officials of the coastal provinces tested new technologies and ideas obtained from Westerners.



The first American admiral in the Chinese Navy. Philo McGriffin after the Battle of the Yalu River.

One of the first efforts was to strengthen Chinese coast defenses through the use of "water thunder"—naval mines. Probably encouraged by High Commissioner Lin Zexu, in 1842, wealthy Cantonese merchant P'an Shih-ch'eng hired an American naval officer operating under the name Jen Lei Ssu—possibly J.D. Reynolds of USS *Constellation* (which served in China waters 1842-1843)—at a reported salary of 5,000 taels/month for nine months and a 20,000 taels bonus (worth at least $1.5 million today) to fashion and demonstrate mines. (13) Conducted at a Taoist temple near Canton, the experiments

seem to have successfully tested a mine that would be placed under foreign ships via swimmers and set to detonate when the anchor was weighed. (14)

Pan Shih-ch'eng was ecstatic because the mines would cost much less than ships or forts. He wrote, "The 'water thunder' is so effective that it will blow up any kind of foreign ship... [and] it only takes a few days to make one 'water thunder' at the cost of 40 taels each. If each province would spend 4,000 tael to make one hundred...this would be the most effective way to control the barbarians." (15) Pan's enthusiasm derived from a previous effort to improve war junks with innovations—such as coppered bottoms--based on American ships, a project that cost 19,000 taels. (16) Yet, when the naval mine was presented at the Imperial court, the Mandarins and other provincial governors rejected it due to a lack of training in its use. This was mere excuse, but inadvertently pointed to the need to obtain Western knowledge in Lin Zexu's third area: military training. (17)

Using 'barbarians to control barbarians' was, for the Chinese, a time-honored concept, so the hiring of Western naval advisors was considered less onerous than using technology directly. Since barbarians were not allowed to command Imperial forces, their official roles remained in military training and tactical advice. However, exceptions could be made if the troops under command were mostly foreign mercenaries. An American merchant ship captain, filibuster, and mercenary soldier, Frederick Townsend Ward was one of the first to have this distinction, leading an Imperial force, later be known as "The Ever Victorious Army" against the Taiping rebellion of 1850-1864. Ward's notoriety and publicity about the high salaries the Imperial Chinese were willing to pay caused a flood of Westerners, including many Americans, to seek positions as technical and naval advisors and trainers. Most famous of the Americans was Philo McGiffin, a U.S. Naval Academy graduate who has gone down in midshipmen lore as the "first American admiral of the Chinese navy." McGiffin was hardly an admiral, and was originally hired as a naval instructor in 1885, but he did—according to his own account and that of several observers—take effective command of the Chinese ironclad battleship *Chen Yuen* at the Battle of the Yalu River in 1894 against the Japanese.

Despite their service and sometime willingness to provide 'secret' knowledge in transactions that if legal were ethically questionable, the Chinese always saw Western advisors as nothing more than expedient. This resulted in "unequal partnerships" in which promised or expected promotions, salary raises, or long-term service were rarely achieved. The 'China market' for naval advisors was never as open or lucrative as many perceived. Most of the naval advisors, including McGiffin, returned to their homelands disappointed rather than rich. In most tactical situations—unlike in McGiffin's experience—their advice and experience could be (and were) easily ignored, a factor that contributed to the chain of defeats suffered by the slowly-modernizing Imperial navy.

Perhaps for the Americans and other Westerners, the inferior status and lack of command responsibilities were actually to their advantage: the Empress Dowager ordered the execution of all the defeated Chinese captains. (18)

True to its ambiguous approach, the U.S. government turned a blind eye toward possible conflicts of interests when Imperial China sought to lure American naval officers away from active duty, or even perhaps to provide services on the side. One of those was Commodore Robert W. Shufeldt, USN, nominally naval attaché to Beijing, who actually was approached to obtain a treaty of amity with Korea. According to some sources, Schufeld declined the offer; others imply that he may have provided unofficial advice on a number of occasions. (19)

Technology without Values

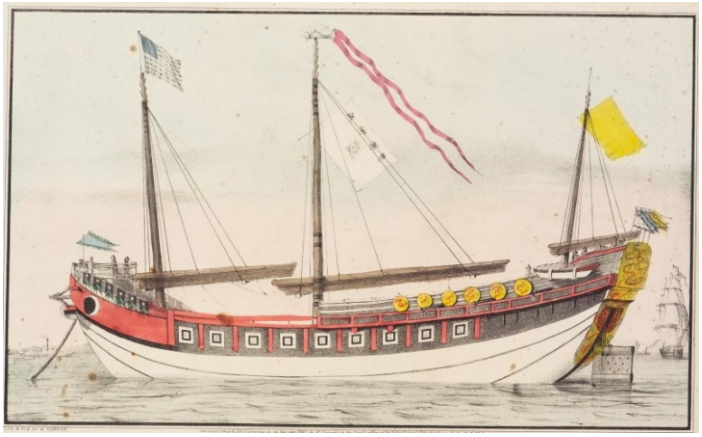
The Chinese defeat at the hands of the nascent Imperial Japanese Navy in 1894-1895 points to an interesting contrast towards the way the Chinese and Japanese adopted Western technology. Imperial Japan opened to Western

trade later than China and was also initially reluctant to adopt Western ideas. However, once Meiji leadership determined that adopting Western technology was essential for Japan, they shed their reluctance to adopt the form, if not the spirit, of Western political and cultural ideas without fearing the loss of their own culture. By 1868 Japan had established a parliament (Imperial Diet) and a constitutional monarchy. Western weaponry, uniforms and discipline were rapidly adopted, and Western clothing followed. (21) This allowance of non-traditional ideas appears to have facilitated adoption of new technologies and Japanese military and naval discipline that were vastly superior to that of the Chinese forces. Yet, measured in terms of ships and armaments, foreign naval authorities considered Chinese naval forces of the 1880s superior to those of Japan. (22)

What convinced the Emperor of the need for Western ships and weapons was yet another defeat at the hands of the British and French (Second China War, 1856-1860). Following this defeat, the Mandarins debated whether to buy foreign vessels or establish dockyards to build modern naval warships in China. (23) Buying the ships directly would be faster and cheaper and it would confine Western political and cultural ideas to a relatively small number of sailors and maintenance workers. In contrast, Western-style Chinese shipyards would diffuse technology to many merchants and individual workers, creating a higher skilled workforce, but could also be a conduit for introducing Western ideas to a larger audience. Western-style shipyards would also be much more expensive to build, require years to gain proficiency, and require Western supervision to develop effectively. The eventual Imperial decision was to hedge by choosing both ways, but with an eye to controlling the diffusion of Western thought. But they bought more ships and heavier ships than Imperial Japan.

A Western-style shipyard was established in Fuzhou (Foochow) in 1866 under the direction of two former French naval lieutenants, one of whom previously served with the Ever Victorious Army. In addition to the shipyard, the first academies for ship constructors and naval officers were launched. As noted, foreign naval advisors proliferated.

Yet throughout, the Mandarins continued to attempt to wall off Western ideas that contradicted the Confucian-based political system. Better military technology was important, but tight political control was more important still. (24) Chinese subjects who associated with Westerners or learned their skills needed strict supervision lest this exposure provoked them to act independently. An Imperial edict in 1843 provides an excellent example. It instructed: "Now there is a Cantonese engineer by the name of Ho Li-kwei who can build steamers and all kinds of warships. He has been ordered to proceed to Hupeh to be questioned in person. ... Do not allow him to associate with foreigners lest he might escape: this is most important." (25)



The junk *Keying* in New York harbor 1847 - 212 days out of Canton. Lithograph by N.Currier

The hierarchal concept of the Confucian political system, requiring absolute obedience, like those of most authoritarian regimes, staunched the independence of thought necessary for Chinese officers and sailors to take the actions necessary for success in battle. A personal letter of Philo McGiffin concerning events at the Battle of the Yalu gives some indication of the extent of this problem.

A message would come up "Captain, the turrets

are jammed." "Capt., we can get no powder up; etc., etc. Several times I have to leave the C.T. [conning tower] and go into the barbettes and cheer the men... Then "Capt., the ship is on fire at the foremast! I said, "Send an officer and fire party and put it out! ...I found, as I suspected, that no officer would go, and the men, of course, never like to go alone, so I... called for volunteers to go with me to the forecastle. (26)

Among the Mandarin officials, conservatism and lack of initiative were reinforced by the punishments routinely meted out by the imperial court for failure or even the appearance of deviating from approved methods. It is hard to adopt unproven technologies or take unorthodox actions when the inevitable failures are automatically (and often severely) punished.(27) Banishment was frequent; execution occasional. When failure or deviation could not be pointed to directly, there was always reason for a charge of corruption in running dockyards or buying ships. The recent detention of Sun Bo, the general manager of China Shipbuilding Industry Corporation and "man behind China's new aircraft carrier" on suspicion "of serious violations of the law and party discipline," would fit well in the history of Imperial China. (28)

Reflections on the Present?

Can shining a searchlight on Chinese history really illuminate lessons for the present or future? That is a continuous debate, with many doubters claiming that the world is "all different now." Yet, it may be that the (1) ambivalent attitude of recent U.S. administrations towards strategic competition, (2) ultimately poor results of unequal partnerships between China and Western corporations (particularly concerning intellectual property), and (3) determination of the Chinese Communist Party (CCP) to avoid Western political ideas or cultural values all reflect the endless loop of authoritarianism with a Chinese face. How that might affect the performance of the People's Liberation Army Navy (PLAN) in a conflict is a question worth examining. Despite the adoption of high technologies, would a conflict with another maritime power have results similar to the Sino-French or Sino-Japanese wars? It is clear that the CCP seeks to build a global-capable PLAN on the model of the United States Navy. (It is important to remember that the PLAN is pledged to the CCP, not the Chinese state.) Recently, the PLAN has introduced new naval platforms, such as their own version of the Mobile Landing Platform/Expeditionary Transfer Dock (MLP/ETD), that appear as direct counterparts to vessels that only exist in the U.S. Navy. (29) If imitation is indeed the highest form of flattery, then the U.S. defense establishment should feel greatly honored that the fleet most likely to be its opponent will eventually be composed of ships most like its own. With perhaps more of them.

Despite the doubters, there are some who do believe that the reflections of the past remain important in the present. As CCP leader and Chinese President Xi Jinping firmly stated in discussing South China Sea disputes with U.S. Secretary of Defense Jim Mattis: "We cannot lose one inch of the territory left behind by our ancestors." (30) That statement—and Xi's increasing dominance over Chinese thought and actions—would also fit well in Imperial China of 1840-1894. Perhaps the results of the current strategic competition will be similar. #end

Note: In this article, the Pinyin version of transliterated names and places are listed first, followed by the previous Wade-Giles system version in parenthesis. Names for which it was difficult to discern the proper Pinyin are retained in Wade-Giles without parenthesis. Although the Mainland Chinese government officially changed its texts to Pinyin in 1979, most of the scholarly research on this topic was conducted and translated in earlier years. Thus, many of the names can be found in Western references primarily in Wade-Giles.

1. From *Illustrated Record of the Maritime Nations* (Hai Kuo T'u Chih), published 1844 with authorship ascribed to Wei Yuan, an associate of Lin Zexu (Lin Tse-Hsu), as quoted in Gideon Chen (Chen Ch'i-tien), *Lin Tse-Hsu: Pioneer Promoter of the Adoption of Western Means of Maritime Defense in China* (Peking: Yenching University, 1934; reprinted New York: Paragon Book Gallery, 1961), pp. 4-5. Chen maintains that Lin should be credited as the author or compiler.
2. Chen, pp. 3-4.
3. Ibid, pp. 5-6.
4. Ibid, p. 7.
5. According to some sources, Lin regained high positions again after 1845, but always in interior provinces away from

the coast and maritime trade. He died in 1850 just prior to reporting to a significant post for the suppression of the Taiping rebellion.

6. Chen, pp. iii-iv.

7. An excellent source on Wei Yuan, the named author of Hai Kuo T'u Chih, is Jane Kate Leonard, *Wei Yuan and China's Rediscovery of the Maritime World* (Cambridge, MA: Council on East Asia Studies, Harvard University, 1984). For the others (with the exception of Yen Pot'ao), the standard reference in English remains Arthur W. Hummel, ed., *Eminent Chinese of the Ch'ing Period (1644-1912),* two volumes, (Washington, DC: Government Printing Office, 1944).

8. John L. Rawlinson, *China's Struggle for Naval Development, 1839-1895* (Cambridge, MA: Harvard University Press, 1967), p. 28.

9. Ibid.

10. Today, American companies' thirst to penetrate the China market continues to be overwhelming.

11. A Chinese memorial (letter) to the Emperor states that Cushing "said they would not venture to follow the example of the English barbarians in appropriating islands." Translated text in Earl Swisher, *Chinese Management of the American Barbarians: A Study of Sino-American Relations, 1841-1861, with Documents* (New York: Octagon Books, 1972), p. 153.

12. Dowager Empress Cixi remains a historic bane of all navalists, draining most of China's naval funds in 1889 to build a lakeside retirement palace including a marble houseboat officially referred to as the "K'un-ming naval academy." Rawlinson, pp. 140-142.

13. Chen, p. 44. Bruce Swanson, *Eighth Voyage of the Dragon: A History of China's Quest for Seapower* (Annapolis, MD: Naval Institute Press, 1982), p. 64. One Tael was 40 grams of silver worth roughly $75.

14. This is my own interpretation based on a diagram from P'an Shih-ch'eng's 1843 document, Shui Lei T'u Shou, reproduced in the Hai Kuo T'u Chih and in Chen, p. 45.

15. Chen, p. 46.

16. Ibid, p. 36.

17. Swanson, p. 64. Although the knowledge may have circulated among Chinese engineers and influenced later weapons

18. After some of the captains were executed, the Dowager Empress, in a better mood, suspended the order. Rawlinson, pp. 195-196. Many, including Admiral Ding Ruchang who commanded the Chinese naval forces in the Sino-Japanese war, chose to commit suicide. Ibid, pp. 191-194.

19. Swanson includes the text of a letter from Schufeldt to Senator Aaron Sargent of California criticizing China's employment of foreign advisors and the poor results (Swanson, p. 94). Rawlinson implies that the frequent visits Shufeldt made to the Beiyang (Peiyang; "northern ocean") fleet may have been to secure future employment or provide unofficial advice. (Rawlinson, p. 93). In 1889, five years after he retired from active duty, Shufeldt was offered the post of U.S. Minister (Ambassador) to China but declined that appointment.

20. Commodore Matthew Perry and the "Black Fleet's" first visit to Japan was in 1853.

21. For example, though not particularly welcomed, Christian missionaries did not suffer the threat of execution (as they frequently did in China).

22. My own interpretation in surveying Chief Engineer J. W. King, USN, T*he War-Ships and Navies of the World,* originally published 1880 (Greenwich, UK: Conway Maritime Press, 1982), pp. 417-432.

23. Rawlinson, pp. 45-46.

24. Given the Taiping and other rebellions, perhaps an appearance rather than a reality.

25. Quoted in Chen, p. 57.

26. Lee McGiffin, *Yankee of the Yalu: Philo Norton McGiffin, American Captain in the Chinese Navy (1885-1895)* (New York: E.P. Dutton, 1968), pp 134-135.

27. Which is perhaps why reverse engineering of proven systems have been a feature in Chinese technological development, rather than due to a lack of creative potential.

28. Keegan Elmer, "Man behind China's new aircraft carrier detained in corruption investigation," South China Morning Post, 17 June 2018, http://www.scmp.com/news /china/policies-politics/article/2151173/.

29. "PLA Receives its First Mobile Landing Platform," Want China Times, June 30, 2015, http://www. wantchinatimes .com/news-subclass -cnt.aspx?cid=1101& MainCatID=11&id=20150630000086

30. Thomas Gibbons-Neff and Steven Lee Myers, "China Won't Yield 'Even One Inch' of South China Sea, Xi Tells Mattis," New York Times, June 27, 2018, https://www.nytimes.com/2018/06/27/world/asia/mattis -xi-china-sea.html.

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