

DESPITE CHANGES IN TECHNOLOGY, IT IS STILL POSSIBLE TO IDENTIFY CONTINUITIES IN NAVAL WARFARE

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ABSTRACT

In this essay, the author elaborates on the relevant continuities in naval warfare within the maritime operating environment which could dictate naval warfare principles. He first defines the maritime operating environment and what it means to attain supremacy within the maritime domain. Then, he highlights how technology has shaped naval warfare tactics. Subsequently, the author discusses emerging naval hybrid warfare. He concludes with a current affair case study regarding the naval activities concerning the South China Sea.

Keywords: *Maritime, Naval, Control, Command, Dominate*

*'Science and Technology revolutionize our lives, but memory, tradition and myth frame our response. Expelled from individual consciousness by the rush of change, history finds its revenge by stamping the collective unconscious with habits, values, expectations, dreams. The dialectic between past and future will continue to form our lives.'*¹

- Arthur M. Schlesinger Jr
American Historian, Social Critic, and Public Intellectual.

INTRODUCTION

In naval history, the 20th century was the most technologically dynamic period where control and application of naval technology was at its peak. Wooden sailing vessels were replaced by steel warships enabled by steam propulsion and fitted with heavy weapons which provide greater speed, manoeuvrability and better fire power. Today, in the 21st century, technology has influenced the maritime domain and naval warfare in a complex manner and will continue to do so in the foreseeable future. The discovery of aircraft carriers and submarines during World War II (WWII) revolutionised naval warfare tactics. Whoever had these capabilities had command of the sea while dominating sea control and sea denial. This enabled superiority in naval warfare and boosted economic development. As scientific and technological advancements continue, it will impact

military, economic, political and societal activities at a global level.

According to *Understanding Modern Warfare*, the nature of the maritime environment is one which is enduring even as technological advancements continue to profoundly impact on naval operations' tactics.² Throughout history, naval strategists such as Mahan and Corbett have developed naval strategies and concepts which have evolved based on the shifting maritime landscape. Today, modern naval strategists are taking advantage of the technological landscape which is growing at a fast pace and through limitless possibilities—to apply and effect change on maritime operations. These technological advancements, coupled with tactics of naval warfare, suggest that continuities in naval warfare may become less relevant.

In this essay, the author elaborates on the relevant continuities in naval warfare within the maritime operating environment which could dictate naval warfare principles. He first defines the maritime operating environment and what it means to attain supremacy within the maritime domain. Then, he highlights how technology has shaped naval warfare tactics. Subsequently, the author discusses emerging naval hybrid warfare. He concludes, with a current affair case study regarding the naval activities concerning the South China Sea.

MARITIME OPERATING DOMAIN

The maritime operating domain consist of the 'oceans, seas, bays, littoral areas and the even the air space.'³ For the ocean and seas, both at surface and underwater level, are operating areas which are part of the maritime domain. Given that three-quarters of the world is covered in water and has an inhospitable environment, this area is really vast. The sea is not suited for human life as it is on land and requires sophisticated platforms to travel far. Nevertheless, Alfred Thayer Mahan referred to this domain as the 'great highway' and 'wide common' for maritime forces and economic development passageways.⁴

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As early as the 15th century, the maritime environment provided the 'highway' for maritime nations to embark on 'exploration voyages in search of knowledge, wealth and new trading routes.'⁵ In the 12th century, Booth claimed that people use the seas for three purposes.⁶ They are mainly for passage of goods and people, 'passage of military for diplomatic purposes or for use against targets on land and sea' and lastly to acquire resources above and below the sea.⁷ During WWII, the importance of naval warfare within the maritime operating theatre rose to great importance, driven together by the Second Industrial Revolution and technological discoveries to boost war capabilities. Today, while most maritime nations are strengthening partnerships so as to maintain maritime security for safe economical sea passageways, some emerging superpower maritime nations are intent on expanding their own political and military agendas.

ACHIEVING MARITIME SUPREMACY

To achieve maritime supremacy, naval force attributes and capabilities such as 'forward presence, deterrence, sea control, power projection, maritime security and humanitarian assistance and disaster relief operations' must be the optimally exercised as the focus areas.⁸ These capabilities are best executed with naval

vessels and strategies to achieve the dominance over the maritime domains.

Beyond naval ships, Mahan argues that there are six elements of naval warfare which contribute to the attainment of maritime supremacy.⁹ These elements are (1) geographical location—proximity of a country to the sea, (2) physical confrontation—waterway access to the sea and ocean, (3) physical layout of the coastline, (4) population of a nation, (5) national approach towards economic growth through trade and commerce and lastly, (6) the character of the government and its relationship with its military. Mahan's argument essentially highlights that the success in maritime supremacy, in addition to naval vessels, also stems from physical and non-physical aspects.

In terms of naval strategies, both Mahan and Corbett similarly defined the command of the sea as the command of the communications at sea through the securing of Sea Lines of Communications (SLOCs) upheld by vessels at sea.¹⁰ Whilst both the maritime strategists' theories were not extremely different through traits, one focused on an offensive approach while the other took a defensive approach. Mahan focuses on winning a decisive naval battle via a concentration of a nation's fleet to destroy an enemy's fleet.¹¹ Corbett, on the other hand, concentrates on the securement of sea command and the preventive measures from losing it.¹² Even though Mahan's theory would usually be the fastest approach to achieve command of communications, it is just one way of achieving that goal.

Command of the sea is said to be the 'primary aim of naval warfare'.¹³ Some examples of this claim would be the naval activities taking place in South China Sea (SCS) and Malacca Straits (MS). China's naval activities in the SCS and its nine-dash-line claim has created much tension and disputes amongst the Southeast Asian countries in the region. Within the Malacca Straits, there is a need to provide maritime security for the economic SLOC against the increased piracy attacks on merchant and goods vessels. Hence, the nature of the maritime environment influences the characteristics and capabilities of naval forces to embrace technological developments and optimise its effectiveness to complement maritime strategies to counter adversarial naval forces.

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Suspected pirates assemble on the deck of a dhow in waters off western Malaysia, January 2006.

TECHNOLOGICAL IMPACT ON NAVAL WARFARE

Naval weapons technology, from the 19th to late 20th century, has evolved from ‘explosive sea mines, long range heavy guns and self-propelled torpedoes’ to the ‘aircraft carriers, nuclear weapons and long-range missiles for anti-air and anti-surface warfare.’¹⁴ Even ‘ancient naval capability such as the naval ram’ still have operational relevance in today’s maritime environment.¹⁵ One such example would be the Republic of Singapore Navy (RSN) *Independence*-class littoral mission vessels. Even though these vessels are designed with high-tech stealth like features, it has also been design-fitted for ramming capabilities given today’s wide range of naval requirements.

In addition to the discovery of the destructive arsenal of weapons, technological developments in improved ship designs for greater distance and manoeuvrability, and Intelligence, Surveillance, and Reconnaissance (ISR) capabilities to obtain a holistic situation picture, greatly shaped how naval tactics and strategies were employed. Having an accurate maritime intelligence picture would deem any superior guns irrelevant as the counterstrategy against the adversary

would have the critical element of surprise first mover advantage.

These technological discoveries played a vital role in shaping maritime warfare tactics and strategies as it acts as a key enabler to dominate SLOCs and doubles up as a force multiplier. Nevertheless, the traditional concepts and broad principles of maritime strategies continue to be relevant in the 21st century. Hence, despite such changes, there are still continuities for existing maritime concepts.

HYBRID WARFARE IN MARITIME DOMAIN

The United States Navy Institute journal article, *Maritime Hybrid Warfare Is Coming* by retired navy admiral, Stavridis, highlights that such warfare will be conducted in the waters of the littorals to maintain ambiguity.¹⁶ Instead of using military naval platforms, ‘civilian vessels such as large fishing vessels, light coastal tankers and small fast crafts would be command-and-controlled’ by naval task forces to mount hybrid warfare.¹⁷ These hybrid warfare platforms would be managed by ‘little blue sailors—individuals who are not exactly uniform personnel’ who would be categorised as nationalist, rogue actors or even terrorists for deniability reasons.¹⁸ A recent and notable example of such a hybrid warfare would be the Annexation of Crimea by Russia where the Kremlin was able to ‘deny any Russian troops present on Ukrainian soil.’¹⁹

According to Stavridis, the advantages of mounting maritime hybrid warfare would (1) allow a nation to conduct intimidating operations without any certain attribution, (2) possess the element of surprise, (3) provides the user an effective control of the tempo and timeline and lastly, (4) require low cost compared to naval platforms.²⁰

Hybrid warfare can be considered a military strategy that fuses conventional warfare with asymmetrical tactics complemented by fake news through cyber means. Murray and Mansoor highlights that though hybrid warfare sounds like it is a new form of combat, it is actually something that existed since ancient times.²¹ In essence it does ‘not change the nature of war but merely changes the way forces engage in its conduct.’²²



The Republic of Singapore Navy Littoral Mission Vessel (LSV).

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Another area of technological advancement to watch out for would be Artificial Intelligence (AI) and autonomous capabilities. According to the book, *Artificial Intelligence and International Affairs: Disruption Anticipated* by Cummings, Roff, Cukier, Parakilas and Bryce, there are many challenges in designing the perfect warfare system while being completely independent.²³ Having said this, much research and development (R&D) efforts are being poured into this area across the government and commercial sectors globally. There are existing military system developments with incremental progress being made such as 'autonomous helicopters and underwater vehicles directed by a smartphone'.²⁴ Based on current estimation, 'it will be many years before AI will be able to approximate human intelligence in high-uncertainty settings—as characterised by the fog of war'.²⁵ However, when it becomes a reality, naval warfare as we know it today, would change form again.

CHINA AND THE SOUTH CHINA SEA

According to the article "A Cooperative Strategy for 21st Century Seapower" by Conway, Roughead & Allen, the expansion of China into the Pacific and Indian Oceans provides a plethora of opportunities and challenges to the global maritime environment.²⁶

In a given instance, China advocates 'counter piracy operations in the Gulf of Aden' and 'conducts humanitarian assistance and distance response missions' which is enabled by its respective hospital ship.²⁷ As such, it becomes a huge participant in 'large scale multinational naval exercises' and a huge morale booster, in addition to the American naval forces, for weaker regional naval forces.²⁸

Despite China's naval expansion advantages, it creates its own set of challenges through its employment of force against other sovereign countries in the attempt to 'assert territorial claims'.²⁹ The developments and disputes arising amongst the member countries of the Association of South East Asian Nations (ASEAN) in the SCS were further complicated when China announced its nine-dash line claim over SCS. The fast economic growth experienced by China has seen her investing heavily in naval expansion as there is an increased dependence on seaborne trade.³⁰



Subi Reef being built by the People's Republic of China and transformed into an artificial island, May 2015.

In addition, China had focused on developing a 'range of joint capabilities across all domains' to ensure its authority over the command of sea.³¹ It utilises an anti-access/area denial (A2/AD) strategy by 'projecting power beyond the first island chain' to 'challenge US access and freedom of manoeuvre.'³² The first island chain stretches from the Japanese archipelago through Taiwan to the Philippines. The island chain plan highlights the 'geostrategic value of Taiwan, postulates Chinese military options at sea, and engages important economic interests.'³³

The A2/AD strategy employed by China includes some hybrid warfare techniques as well. It has prioritised the 'development of anti-satellite and cyber weapons' that could disable the US forces communications network to effectively command and control its forces.³⁴ In China's inventory today, it has 'integrated air defences, anti-ship cruise and ballistic missiles, maritime bombers missile and torpedo carrying submarines and fast patrol crafts', which are all intended to deter any country from operating within proximity of the first island chain.³⁵

In addition to its weaponry developments, it has built artificial islands in the South China Sea to declare Air Defence Identification Zones (ADIZ) over the East China Sea. Chinese military forces have also been ramping up aggressive naval activities to exercise its claimed sovereignty rights. This included dangerously

'close and unprofessional intercepts of US and allied ships and aircraft operating in international waters and airspace.'³⁶

The examples cited earlier would clearly argue that China is a practitioner of the six elements of naval warfare by Mahan while optimising Mahan and Corbett's theories on securing the command of the sea to realise its geostrategic maritime leverage in the SCS region.³⁷ This was a key enabler for it to establish expeditionary forces and have forward presence via its fortified artificial islands within SCS. With their advanced naval technology, China would be able to exercise their sovereign rights claim and enhance their naval attributes and capabilities. China's evolving technology together with proven maritime strategies and theories combine to make a lethal concoction which could threaten and undermine US bases within the region and keep US forces away from Chinese interests.

With the developments mounted by China in SCS, the geostrategic dimension of China's maritime supremacy could possibly dominate the command of sea with lasting implications for regional harmony and stability.

CONCLUSION

Technology continues to be a critical driver for naval warfare in the maritime operating environment. Ultimately, 'technology shapes warfare but not the

war.³⁸ Warfare will be defined by the type of technological developments. Nevertheless, dominant instruments of warfare have ceased to exist over time even though war continues to exist throughout the history of mankind. As such, no matter how much technology can influence warfare, 'it cannot always determine it in terms of its conduct and eventual outcome.'³⁹ Hence, there will be continuities observed in naval warfare based on the existential evidence highlighted in this essay.

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