**ASSIGNMENT ON FOUNDATIONS OF NATIONAL SECURITY IN**

**A GLOBAL PERSPECTIVE**

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**CHALLENGES TO NATIONAL SECURITY DUE TO THE CHANGING PARADIGM OF MARITIME WARFARE**

**Introduction**

1. The maritime domain comprising the oceans and the seas have been true proponents of ‘***globalisation***’ since ancient times, far before the concept assumed its current dimensions and applicability in the end of the 20th century. Maritime trade with ships plying across the globe, have always acted as ambassadors of nations, connecting cultures, societies and traditions between far away lands. Geographically speaking, the seas are truly global, as waters which touch the shores of one continent, travel thousands of miles to reach the shores of other continents due to ocean currents and winds. Alfred Thayer Mahan (1840-1914), a naval strategist and the author of ‘The Influence of Sea Power Upon History’, argued that national prosperity and power depended on control of the world's sea-lanes, ‘***Whoever rules the waves rules the*** ***world***,’ Mahan wrote. Further, in order to understand the importance and centrality of the role of sea power, Mahan argued that British control of the seas, combined with a corresponding decline in the naval strength of its major European rivals, paved the way for Great Britain's emergence as the world's dominant military, political, and economic power in the 19th and 20th centuries. Conversely, as Great Britain’s ability to control the seas declined in the middle of the 20th Century, its ability to sustain, influence and control its distant colonies also declined, ultimately leading to the end of the British Empire.
2. The roles of the navies with respect to national security matured across the globe till the end of the 20th century with considerable commonality in their stated aims, tasks and responsibilities. These roles mainly focussed on Military, Diplomatic, Constabulary and Benign dimensions encompassing protection of national interests, deterrence, enhance maritime security, influencing affairs on land, protection of sea lanes and trade, power projection, maritime diplomacy, Humanitarian Assistance and Disaster Relief operations etc[[1]](#footnote-1). To elaborate, the official website of the Royal Navy states its role as, ‘in the globalised world, we must have the ability to respond to any event that threatens our economy, our people, our national interests at home or abroad and those of our partners’[[2]](#footnote-2). In order to perform these roles, navies have developed various warfighting platforms ranging from aircraft carriers, destroyers, frigates, corvettes, missile boats, amphibious ships, submarines etc equipped with weapons and sensors (in all three dimensions – air, surface and sub-surface) to be able to undertake ‘***Blue Water Operations***’. According to the Indian Maritime Doctrine, 2015, ‘the ability to undertake distant operations distinguishes a blue-water navy from a brown-water force. It requires strong integral capacity, including logistics, surveillance, networked operations, etc and enabling capability, including equipment design, training, doctrine and organisation’. It states ‘distant operations rely upon the attributes of access, mobility, sustenance and reach in order to show presence, project power and/or accomplish other national objectives in the area of interest’[[3]](#footnote-3). In times of war, the main role of navies therefore focusses on providing own forces the freedom of movement and the ability to undertake unhindered maritime operations while at the same time denying the same to the enemy in the area of interest or operations.
3. **Conventional Military Roles – A Changing Paradigm**. Once again quoting Mahan, ‘a country obtains [command of the sea](https://en.wikipedia.org/wiki/Command_of_the_sea) by concentrating its naval forces at the decisive point to destroy or master the enemy’s battle fleet and the true objective in a naval war is always the enemy fleet[[4]](#footnote-4)’. These Mahanian principles remained relevant throughout the 20th Century until 1988, which witnessed great naval battles during the World Wars as well as the Falklands War in 1982 between Great Britain and Argentina. The Falkland war was followed by the ***last known surface warfare engagement*** in recent history between the US Navy and the Iranian Navy in the Persian Gulf towards the end of the Iran-Iraq war in 1988[[5]](#footnote-5). ***The last three decades, have seen ‘Blue Water Navies’ performing and engaged only in Diplomatic, Constabulary and Benign roles, with no fleet to fleet engagements across the globe***.
4. The relative calm in the oceans was abruptly disturbed on 12 Oct 2000 when USS Cole (*a 1.8 Billion USD Arleigh Burke-class Aegis-equipped guided missile destroyer*) was attacked by Al-Qaeda suicide operatives by ramming a small boat laden with explosives into the destroyer’s mid-section completely crippling it. 17 Sailors lost their lives in the unprecedented and unconventional attack with 39 being injured. Though this incident preceded the 9/11 attack on the twin towers by one year, in many ways ***it was the defining moment in maritime warfare when symmetry was substituted with asymmetry*** giving birth and recognition to the concept of ***Asymmetric Maritime Warfare***. The USS Cole incident highlighted a new challenge to national security in the maritime domain. It also brought into focus the ‘***return on investment***’ or ‘***cost benefit***’ wherein relatively small, inexpensive and rudimentary craft/equipment could damage state of the art platforms worth billions of dollars.
5. 90% of the world trade by volume transits by sea carried by almost 54000 registered merchant ships[[6]](#footnote-6). In addition, various cruise companies operate more than 300 ships across the globe with a passenger capacity of more than 500000 guests[[7]](#footnote-7). The attack on the USS Cole has opened a new chapter of asymmetric warfare at sea with a number of ships having been attacked by non-state actors post the incident. The bombing of the Superferry 14 by the Abu Sayyaf Group in 2004 in Manila bay resulting in the loss of 116 lives[[8]](#footnote-8) as well as numerous other attacks on merchant ships since the year 2000, are indicative of the changed doctrines and strategies of non-state actors to inflict damage to targeted states.
6. **Scope of Asymmetric Maritime Warfare**. Asymmetric terrorist attacks against maritime targets can be realized using explosives-laden suicide boats, light aircraft and gliders; merchant and cruise ships as guided missiles to ram another vessel, warship, port facility, or offshore platform; commercial vessels as launch platforms for missile attacks; underwater swimmers to infiltrate ports; and unmanned underwater explosive delivery vehicles. Further mines or vessel’s legitimate cargo, such as chemicals, petroleum, or liquefied natural gas, can also be utilized as ingredients for explosion. Globally, terrorists have shown an increasing interest in using small boats to attack military and commercial shipping and maritime facilities. The tactics and techniques of using small boats to emplace or deliver improvised explosive devices have proven effective and exportable. Threats from small boats are very viable since they are simple, low cost and effective in evading detection or can act as perfect camouflage among groups of fishing or leisure vessels. The 26/11 Mumbai attacks bear testimony to the lurking danger posed by small boats to maritime security[[9]](#footnote-9).
7. **Use of Asymmetry by State Actors**. The recent conflagration between Iran and the United States of America as well as the United Kingdom in the Persian Gulf, post withdrawal of the US from the Joint Comprehensive Plan of Action (JCPOA) has witnessed utilisation of asymmetric warfare by State actors without having the requirement to acknowledge or stake claim for the same. Four tankers suffered underwater damage off UAE, which initially were attributed to placing of limpet mines, but later, post enquiry by the UAE, was attributed to placing of underwater explosives by trained divers[[10]](#footnote-10). The attacks were blamed on Iran by the US which were denied categorically by the Iranian regime.
8. The Persian Gulf possesses 55 percent of the world’s crude oil reserves. Iran dominates the whole Gulf, from the Shatt-al-Arab on its Iraqi border to the Strait of Hormuz 615 miles away. Deployed from this immense seaboard are the Islamic Republic of Iran Navy and the Iranian Revolutionary Guard Corps Navy (IRGCN) with a firm grip on the entrance to the gulf ie the Straits of Hormuz. The IRGCN has honed its asymmetric capabilities and refined its platforms over the years (especially after the 1987-88 Iran Iraq War) and coupled with the blessings of the geography with a highly indented coastline comprising bays, inlets and islands as well as its heavily armed fast attack boats capable of swarming operations and launching missiles have the upper hand against conventional blue water platforms[[11]](#footnote-11). ***The end-state therefore allows a significant advantage to Iran for effective and successful ‘sea-denial’ in its littorals as against the aim of its adversaries to achieve ‘sea-control***’ ***in these waters to allow uninhibited and unhindered flow of oil and trade through the Persian Gulf and the Straits of Hormuz***. This therefore poses a severe challenge to ‘National Security’ of nations which have ideological and geopolitical differences with the Iranian Regime.
9. The US Navy (USN) realising this new emerging threat, war-gamed the scenario of encounters between its ***blue water platforms*** and the ***swarming speed boats*** of the IRGCN in shallow coastal waters of the Arabian Gulf in 2002. The war game led to the worst (simulated) naval defeat since Pearl Harbour according to the San Francisco Chronicle. Stanley Weeks, a naval specialist at the Institute for Defense Analysis in Washington, stated that, ‘swarming, together with mobile coastal missile batteries aimed at our ships, might overload our combat systems and is, therefore, a real concern and stress. US ships and helicopters with precision guided weapons might destroy most of these small boats, but if even a few boats and missiles get through, they could create psychological and financial havoc.[[12]](#footnote-12)
10. The US Navy along with the other large navies on the globe are still, by and large, conventional blue-water forces designed to patrol vast oceans, win classic sea battles, and pound an enemy with overwhelming firepower from offshore positions. A close-in, dirty war in narrow coastal waters is not something which these navies cannot engage in, but is something which could be avoided due to the rationale highlighted at Para 9 above[[13]](#footnote-13).
11. Thus, came the thought process of development of the Littoral Combat Ship (LCS). In the 1990s, the US Navy embarked upon the LCS programme with the aim of designing small, fast, inexpensive and lightly-manned trucks with the ability to plug in a wide array of ‘modules carrying equipment’ for specific missions including surface warfare, anti-submarine warfare and minesweeping. Thirty years down the line these ships have still not been inducted into operations due to renewed deliberations and discussions on their roles, equipment fit, manning, size, cost over-runs, combat survivability and operating philosophy[[14]](#footnote-14). ***The bottom line is that navies across the globe are still besieged with the operational philosophy of dealing with asymmetric threats in the maritime domain with large conventional and highly expensive platforms designed for Blue water operations***.
12. **Evolving Complexity of Asymmetric Maritime Warfare**. The swarm boat tactics of the late eighties which continue to be seen in the Arabian Gulf today have received a ‘***shot in the arm***’ with the development of new, easily accessible and cheap technology in the form of Drones. When the Houthi rebels in Yemen first used maritime drones in January 2017, the assault on a Saudi frigate highlighted the little-known development of sea-capable semi-autonomous weapons[[15]](#footnote-15). The ever-increasing popularity of Drone Warfare was recently witnessed in Sep 19 when the world’s largest oil processing facility, Saudi Aramco’s Abqaiq Refinery was attacked by drones and missiles claimed once again by the Iran backed Houthi rebels of Yemen. These attacks were preceded by drone attacks on the Shaybah Oil Field and then again on the East-West pipeline which links Saudi Arabia’s eastern production facilities with the Red Sea[[16]](#footnote-16). China has already started exporting killer drone robots armed with machine guns to countries in the middle east[[17]](#footnote-17) heralding the commencement of a new type of an arms race. China, Russia, USA and UK are already in the process of developing Underwater Unmanned Vehicles for creation of an underwater intelligence, surveillance and reconnaissance network,[[18]](#footnote-18) to add to the already available array of midget submarines, torpedo launchers and submarine wolfpacks. Under development by private defence industry, once successfully tested, these modern war machines would join the arms supplier basket.
13. **Resultant Strategic Environment in the Maritime Domain**. The increasing proliferation of advanced force multiplying technologies, including unmanned and autonomous systems, advanced, cost-effective anti-ship ballistic and cruise missiles , midget and chariot submarines as well as high-speed, heavily armed small surface combatants, are providing both state and non-state actors, ranging from extremist organisations to people smugglers as well as organised criminal organisations, with methods to hinder the way traditional maritime powers establish and maintain sea control. ***The resultant end-state therefore allows an advantage to Iran as well as other littorals with similar force structures and doctrines to establish effective and successful ‘sea-denial’ in its littorals as against the aim of its adversaries to achieve ‘sea-control***’ ***in these waters***. The inability to control littoral seas and choke points therefore directly affects the ***uninhibited and unhindered flow of oil and trade*** through these waters as was recently evident from the developments in the ***Persian Gulf and the Straits of Hormuz***.
14. **Primacy of Sea-borne Trade – In the Foreseeable Future**. Sir Walter Raleigh famously stated that, ‘***Whosoever commands the sea commands the trade; whosoever commands the trade of the world commands the riches of the world and consequently the world itself***’. As mentioned above, maritime transport is essential to the world’s economy as over 90% of the world’s trade is carried by sea and it is, by far, the most cost-effective way to move goods and raw materials en-masse around the world. Maritime activity has a key role to play in the alleviation of extreme poverty and hunger as it already provides an important source of income and employment for many developing countries, such as the supply of seagoing personnel and ship recycling, ship-owning and operating, shipbuilding and repair and port services, among others.[[19]](#footnote-19) The World Maritime Trading System sustains the world’s economy by moving over 270 million containers and three billion tons of oil every year providing benefits to all nations, which directly and indirect interact with it[[20]](#footnote-20). The balance of interrelationships of maritime trading nations is essential to the successful delivery and coordination of trade. This is regulated and assured by law, treaties and international organisations. ***Therefore, the primacy of seaborne trade is not likely to diminish for the foreseeable future (even if oil is substituted with other forms of energy in the future***) ***and would continue to be a major contributor and factor for conduct of world trade and consequently impact National Security of participating nations***.
15. **Challenges to National Security Associated with Risks to Maritime Trade**. The flow of maritime trade from source to destination passes through sensitive sea areas which can have potential adverse effects on trade. Such influences can act directly and indirectly on shipping and economies. These effects are: climate change; state and non-state actor aggression; terrorism; piracy; spread of pandemic diseases; mass human migration; natural environmental disasters and the over exploitation of natural resources. Often such friction areas are further complicated by being co-located with geographic constraints, such as maritime choke points (an area where high concentrations of shipping pass a narrow route), mega port vulnerabilities and war zones. Many of these threats are interrelated and tend to be fuelled by global events and gaps in effective maritime law enforcement. ***Disruption of trade due to the changing paradigm of asymmetric warfare in the Maritime Domain therefore is a serious threat to National Security and requires constant monitoring, control and mitigation***.
16. **Mitigation Strategies**. As highlighted in the paper, unfortunately, the developments in the asymmetric segment of the maritime domain are far outpacing the development of counters or mitigating doctrines, technology and tactics. The advanced navies of the world are still utilising their blue water platforms to combat asymmetric maritime threats which due to the arguments presented above are insufficient not only technologically, but also in terms of doctrine, strategy and training. One of the methods which can be considered for mitigating these omnipresent threats in the littorals is fighting ***asymmetry*** with ***asymmetry***. Therefore, drones would need to fight drones, Underwater unmanned vehicles (UUVs) would need to counter enemy UUVs and swarm boats would require to be countered by swarm boats.
17. While deploying this advanced equipment in own waters for ‘Sea denial’ roles would be easier, deploying them thousands of miles away in areas of responsibility or interests would be quite another challenge. ‘***Drone transporting and control Platforms***’ as well as ‘***swarm boat carriers***’ which could undertake sealift over the oceans and then deploy them in the geographical area of interest while remaining outside the ‘sea-denial’ bubble of the enemy would need to be researched and developed. ***In the interim, navies would have to continue to adapt and deal with this new dimension of maritime warfare by development of weapons like lasers, drone killers, drone communication jammers***, ***portable/latch on mine detectors, 360 degree rapid fire attack capability against swarm boats etc which could provide blue water platforms the wherewithal to deal with these threats***. The requirement of undertaking training including development of simulators as well as maritime field ranges for practical training (similar to creation of villages and concrete structures for urban warfare training for the land forces) are the need of the hour. As ‘***land forces***’ across the globe adapted and developed new strategies as well as tactics to deal with terrorism, urban warfare, IEDs, counter-insurgency etc, ‘***maritime forces***’ too would have to adapt, adopt and act to mitigate these new threats in the maritime domain which have direct implications and bearing on national security of nations.
18. Development of navies is a capital-intensive activity which requires years of investment in research and development, human resource, ship building, trials etc. The crucial question therefore which presents itself to all nations with blue water navies, ‘***whether to reequip / reorient existing blue water platforms for asymmetric operations or create niche smaller platforms.***’
19. **Conclusion**. Seaborne trade continues to be and would continue to be a major pillar of the world economy in the foreseeable future. The foundation of the world trade is based on the ability of the mercantile marine to connect suppliers with markets across the globe crossing vast expanses of the oceans. Even if the dependency on oil diminishes in the next few decades with both the reduction or exhaustion of reserves as well as development of alternate sources of energy, sea borne trade would continue to be relevant and critical to world and national economies and thereby directly linked to national security. The changing paradigm of maritime warfare has imbibed asymmetry and the paper sufficiently highlights the challenges to maritime security posed by these developments as well as the inadequacy of the current mitigating measures in respect of platforms, technology, doctrine, strategy and training to deal with these emergent threats. ***Nations therefore face a unique and unprecedented challenge in dealing with this threat to national security in the maritime domain which is here to stay if not till the end of the 21st century but at least till the foreseeable future***. Time has come for nations and their navies to wake up to this man-made contest where asymmetric maritime warfare and technology is fast out – pacing and out-running its counters.
20. A book review in the South African Military Journal of the famous treatise, ‘***Seapower: A Guide for the Twenty-First Century***’ authored by Professor Geoffrey Till summarises the core issue highlighted in the paper wherein ‘***the look towards the future in the last chapter touches on a number of interesting challenges in the maritime domain in general and for navies in particular. These include a rise in the relative importance of the sea and sea power, a change of attitudes towards the sea, a continued focus on the littoral, a likely increase in the range and diversity of naval tasks, and the implication of these factors on how navies should develop and behave in the twenty-first century. The author specifically points out that navies have hard choices to make in their relationship with new technologies and in the trade-off between modern and post-modern missions***’[[21]](#footnote-21).

1. www.indiannavy.nic.in [↑](#footnote-ref-1)
2. www. [https://www.royalnavy.mod.uk](https://www.royalnavy.mod.uk/) [↑](#footnote-ref-2)
3. Indian Maritime Doctrine 2015 [↑](#footnote-ref-3)
4. Influence of Sea Power on History – Alfred Thayer Mahan [↑](#footnote-ref-4)
5. #  U.S. strikes 2 Iranian oil rigs and hits 6 warships in battles over mining sea lanes in gulf *-* By John H. Cushman Jr., New York Times

 [↑](#footnote-ref-5)
6. <https://www.statista.com/statistics/264024/number-of-merchant-ships-worldwide-by-type/> [↑](#footnote-ref-6)
7. <https://cruisemarketwatch.com/capacity/> [↑](#footnote-ref-7)
8. <https://safety4sea.com/cm-superferry14-the-worlds-deadliest-terrorist-attack-at-sea/> [↑](#footnote-ref-8)
9. 2010 Asymmetric threats and their challenges to freedom of navigation - K. R. Deepak Kumar, World Maritime University [↑](#footnote-ref-9)
10. A series of explosions on oil tankers in the Middle East has raised alarm as regional tensions escalate

by [Patrick Wintour](https://www.theguardian.com/profile/patrickwintour) [↑](#footnote-ref-10)
11. [GLOBAL](https://www.theatlantic.com/international/)-Asymmetry at Sea, What war with Iran in the Gulf could be like; [Robert D. Kaplan](https://www.theatlantic.com/author/robert-d-kaplan/) [↑](#footnote-ref-11)
12. [GLOBAL](https://www.theatlantic.com/international/)-Asymmetry at Sea, What war with Iran in the Gulf could be like; [Robert D. Kaplan](https://www.theatlantic.com/author/robert-d-kaplan/) [↑](#footnote-ref-12)
13. [GLOBAL](https://www.theatlantic.com/international/)-Asymmetry at Sea, What war with Iran in the Gulf could be like; [Robert D. Kaplan](https://www.theatlantic.com/author/robert-d-kaplan/) [↑](#footnote-ref-13)
14. The National Interest – Is the LCS the worst warship ever built – David Axe [↑](#footnote-ref-14)
15. The future of Drone Warfare: The Rise of Maritime Drones [↑](#footnote-ref-15)
16. Drones just attacked the world’s largest oil refinery – By Justin Rohrlich [↑](#footnote-ref-16)
17. <https://futurism.com/the-byte/china-selling-autonomous-killer-drones> [↑](#footnote-ref-17)
18. The future of Drone Warfare: The Rise of Maritime Drones [↑](#footnote-ref-18)
19. International Maritime Organisation Profile. [↑](#footnote-ref-19)
20. Fact Sheet 3 – The Royal Navy’s Role – Global Trade and Security [↑](#footnote-ref-20)
21. Scientia Militaria, South African Journal of Military Studies, Vol 38, Nr 1, 2010. doi: 10.5787/38-1-84  [↑](#footnote-ref-21)