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ADDRESSING MARITIME SECURITY ISSUES IN THE STRAIT OF HORMUZ: A COMPARISON OF NAVAL FORCES EMPLOYMENT WITH ISPS CODE IMPLEMENTATION

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To Elizabeth

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ABSTRACT

This paper studies operational interaction of international naval forces and shipping community in the Strait of Hormuz under two assumptions: (i) naval forces operate in full compliance with the international law and (ii) naval forces' operational capabilities are suitable to contribute to efforts for the protection of transiting oil tankers. The international community through the IMO has issued the ISPS Code detailing the minimal security arrangements for states and shipping companies. However, maritime threats in the Strait of Hormuz against tankers present distinctive features that do not fall into ISPS Code provisions. This dissertation will attempt to examine which operational configuration of naval forces would be able to help the reduction of vulnerability for transiting merchant vessels and especially oil-tankers through the Strait of Hormuz.

Keywords: Water Borne Improvised Explosive Devise, Anti-ship missiles, Maritime Security Awareness, naval forces, ISPS Code, Low of the Sea, coastal state, maritime power.

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LIST OF ABBREVIATIONS

AD	Access Denial
AIS	Automatic Identification System
ATP	Allied Tactical Publication
ATWG	Anti-Tank Guided Weapon
BIMCO	Baltic and International Maritime Council
BMP	Best Management Practices
CMF	Combined Maritime Forces
CTF	Combined Task Force
CTL	Constructive Total Loss
DWT	Deadweight Tonnage
EU NAVFOR	European Union Naval Force
ICS	Institute of Chartered Shipbrokers
IGP&I	International Group of Protection and Indemnity
ILO	International Labor Organization
IMO	International Maritime Organization
INTERTANKO	International Association of Independent Tanker Owners
IRGC	Islamic Revolution Guard Corps
IRIN	Islamic Republic of Iran Navy
ISPS	International Ship and Port Facility
ISTAR	Intelligence Surveillance Targeting Acquisition and Reconnaissance
JCPOA	Joint Comprehensive Plan of Action
LNG	Liquefied Natural Gas
LOS	Law of the Sea
MDA	Maritime Domain Awareness
MSA	Maritime Situational Awareness
NATO	North Atlantic Treaty Organization
OCIMF	Oil Companies International Marine Forum
ONI	Office of Naval Intelligence
ROE	Rules of Engagement
SOLAS	Safety of Life at Sea
SSAS	Ship Security Alert System
SUA	Suppression of Unlawful Acts
UAE	United Arab Emirates
UN	United Nations
UNCLOS	United Nations Convention on the Law of the Sea
USS	United States Ship
WCO	World Customs Organization
WBIED	Water Borne Improvised Explosive Devise

CHAPTER 1
INTRODUCTION

1.1 Background

Since 1980, 269 ships of greater than 100 gross tons have been involved in attacks around the world. The great majority of 201 was in the 1980s, of which 184 occurred during the Iran-Iraq war (1980-1988). The great majority of 201 was in the 1980s, of which 184 occurred during the Iran-Iraq war (1980-1988) (O'Rourke 1988). Even though the incident of the double tanker attack in the strategic Strait of Hormuz of June 13, 2019, had the dynamic to trigger a full-blown war between the United States and Iran, in the end, was recorded as a low-level instability (Marcus 2019). It could be argued that isolated tanker attacks in the Strait of Hormuz constitute a pattern that may lead to a severe loss of human lives or damage to the environment. Given the historical background of the Tanker War in the Persian Gulf in the decade of 1980, the Strait of Hormuz came under the spotlight because of the tanker attacks of 2019 (see Appendix 1). There may be no place on the globe more important for the world's oil supply than the Strait of Hormuz. It is a very narrow strait of water between Iran in the north and the United Arab Emirates and Oman in the south linking the Persian Gulf to the Gulf of Oman leading to the Arabian Sea and the Indian Ocean. Persian Gulf countries oil exports, through the Strait of Hormuz, are currently heading to Asia (76%), Europe and others (15%), and the US (9%) (The Strait of Hormuz 2019). Several alternative oil pipeline routes are bypassing the Strait of Hormuz, but not enough to make up the amount of oil transiting through the Strait. About one-fifth of the global oil and one-third of the Liquefied Natural Gas (LNG) supply pass through that key waterway. Dozens of oil tankers pass through the world's most strategic chokepoint daily, each carrying up to millions of gallons of oil. A former Iranian Prime Minister referred to the Strait of Hormuz as "the jugular of the Global Economy" (Haynes 2019). This is particularly true today when tanker attacks reminding us that the real objective of the perpetrators was not losses to seafarers and vessels per se but a shake of the global economy. However, the international shipping community has taken several noteworthy steps to improve maritime security for ships and port facilities. The International Maritime Organization (IMO) as the United Nations' agency responsible for regulating shipping has provided significant guidance mainly through the International Ship and Port

Facility Security (ISPS) Code. This paper attempts to demonstrate the potentialities of the employment of naval forces operating in line with the provisions of international law to help in addressing maritime threats in the Strait of Hormuz.

1.2 Aims and Objectives

Tanker War conducted in the Persian Gulf from 1980-88 will be explored as a case study to help the reader understand the problematic employment of naval forces which led to hundreds of casualties of innocent seafarers and massive ships' damages. On the contrary, since then, naval forces have contributed enormously in peace operations such as the operation of UNIFIL off Lebanon territorial waters or anti-piracy operations off Somali coasts. This leads to the following research question: how could the employment of naval forces contribute to the maintenance of the maritime security environment in the Strait of Hormuz in conjunction with the security framework established by ISPS Code? In other words, the research question could be rephrased as the following research thesis statement: The employment of naval forces along with ISPS Code implementation can reduce the vulnerability of merchant vessels to maritime security challenges in the Strait of Hormuz. Therefore, this thesis will be open to challenge through the remainder of this paper.

1.3 Scope and Limitations

Even though the topic refers to the Strait of Hormuz, the geographic area of interest includes also the adjacent region. The Strait is seen not as a standalone international strait without taking into consideration the strategic Persian Gulf and the Arabian Sea. Regarding the discussion on the ISPS Code, it will be focused rather on ships than port facilities, since the main point is how to address the security challenges of the commercial vessels moving through the wider area of Strait of Hormuz. The research on the security situation in the Strait is restricted to the confines of international law, which should shape commercial shipping activity along with any potential naval operations in the future. It should be noted that in no way is this paper intended to give answers to political questions, for example, who or which country is behind attacks against tankers. This study will remain focused on tanker attacks in the Strait of Hormuz

CHAPTER 2
LITERATURE REVIEW

2.1 Introduction

Anyone interested in gaining a good understanding of current complicate maritime security issues in the Strait of Hormuz will need to start thorough research through available scholarly sources. Even though the concept of "maritime security" seems to be falling within the purview of the shipping industry, it does not belong to it entirely, since over the last decades it appears to be used by scholars on several sciences related to international affairs as well as by political figures. Thus, the following literature search will attempt to disclose any conceptual connection between maritime security and geopolitics. Especially when it comes to one of the most strategic waterways in the world like the Strait of Hormuz, the literature will demonstrate that a good understanding of a complicate geopolitical and legal dispute between coastal and flag States or more accurately between Iran and the United States and its allies, is required. Finally, the review will be focusing on the current naval strategies of key actors, and finally on the constructive role of the shipping industry security regulatory system. Consequently, the goal of this review of literature is threefold: first, to reveal what is known on the concept of maritime security; second, to explore the strait of Hormuz dispute; and finally, to outline the security regulatory system established mainly by shipping industry actors. This review discusses secondary sources of information, made up mainly of books, research papers, and academic journal articles. Much effort has been made to make sure that all the literature was as up to date as possible and maintain a good balance between relevant academic books, and recent journals and articles retrieved mainly from the internet.

2.2 Maritime Security

In the first chapter of her book, Natalie Klein (2011) is attempting to define the term "maritime security" by identifying what interests are at stake and what responses need to be addressed to any problem related to "maritime security". Her starting point is Hugo Grotius's book mare liberum that introduces the principle of the freedom of all nations to use the sea as an international territory for seafaring trade purposes. Based on this principle, she investigates the tension between "inclusive" and "exclusive" interests of mare liberum. "Inclusive interests refer to those that are shared by the international community" promoting the common use of the mare liberum, though "exclusive interests are held by individual states asserted against the rights and responsibilities of all other states". From the presenting discussion, a conflict of interest arises between coastal states claiming sovereignty in adjacent

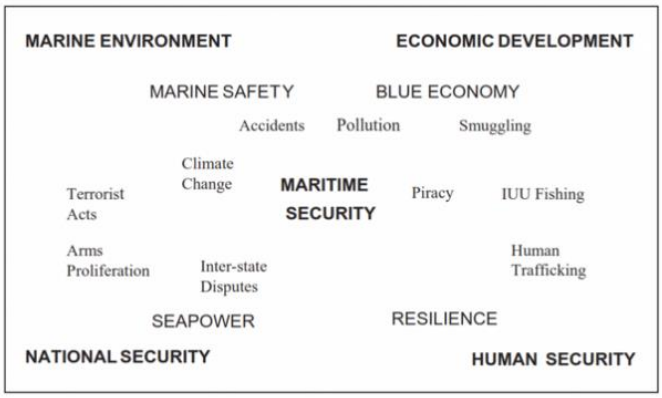

Figure 1 Maritime Security Matrix, Bueger C 2015. "What is Maritime Security?" Marine Policy pp. 161.

waters and maritime powers advocating freedom of navigation everywhere through an inclusive approach. Therefore, she feels that "maritime security" means different things to different people. Natalie Klein notes that even though the term of "maritime security" is widely used by government and military officials, vessel owners and operators, as well as in the academic literature, it is rarely defined in a categorically way, and instead tends to have a context-specific meaning. However, she defines "maritime security" as "the protection of a State's land and maritime territory, infrastructure, economy, environment and society from certain harmful acts occurring at sea". She notes that by the term "certain harmful acts", she means the following maritime threats identified by the UN Secretary-General in 2008: piracy and armed robbery, terrorist acts, illicit trafficking in arms and WMD, illicit traffic in narcotics, smuggling, and trafficking of persons, illegal, unreported and unregulated fishing, intentional and unlawful damage to the marine environment. Natalie Klein's definition of "maritime security" is assessed as being broad and general, in spite of the discussed difficulties. Later on, another Scholar Christian Bueger (2015), coined the term "buzzword" to describe the complexity of the term "maritime security". He is arguing that "maritime security" lacks international consensus, since "it achieves its meaning by actors relating the concept to others, by attempts to fill it with different issues and by acting in the name of it". In his effort to map out the list of meanings of these concepts, Bueger created a matrix that relates the maritime security with four major concept disciplines, namely: marine safety, blue economy, resilience, and sea power. Following Bueger, the broad conceptual framework of "maritime security in a growing number of strategy documents" tends to replace the term "threats" with the term "risks". For instance, "the UK's 2014 Maritime Security Strategy refers to "maritime security risks rather than threats". Based on the above analysis, a question immediately arises: Why the academic literature appears to be unable to define the term "maritime security"? An answer is provided in Germond's paper (2015). He explains that several academics such as lawyers, shipping market scholars, economists, criminologists, etc, appear to approach the "maritime security" from different perspectives overlooking the geopolitical dimension, however, "maritime security is intrinsically geopolitical, since it is about projecting power beyond one's external

boundary within the global maritime domain". The next part of the literature review will be concentrated on the geopolitical situation in the Strait of Hormuz.

2.3 Strait of Hormuz Dispute

Mahmoudi (1991) examines the part of UN Convention on the Law of the Sea (UNCLOS, 1982) also known as Montego Bay Convention, referring to the extension of the territorial seas to 12 nautical miles and the regime of the "transit passage In accordance with the UNCLOS, the privileges of transit passage over innocent passage for the flag State are: 1. The coastal State does not have the right to hinder a passage that is not innocent. 2. The prohibition of the threat to use force is formulated as an obligation of the flag State and not as a right of the coastal State. 3. Concerning warships, the regulatory power of the strait State concerning traffic and protection against pollution is more or less circumscribed either because it is subject to some qualifications or because its exercise requires the sanction of a competent international organization. 4. The remedy against the violations of the rules of the coastal State by a foreign warship is to be sought through diplomatic channels. 5. The question of the "innocent" character of the warships to "engage in exercises so long as these are consistent with their normal mode of continuous and expeditious transit" through international straits such as the Strait of Hormuz. He describes in detail the exchange of arguments during the negotiations stage before the finalization of the UNCLOS between coastal states without blue water navy capabilities and the maritime powers. He notes that at some point during the trade-off among the state representatives, the case of extension of the territorial sea from 3 to 12 nautical miles supported by the coastal states, was linked with the case of transit passage regime through international straits brought up by the maritime powers. Since the extension to 12 miles has been enacted by almost all Convention signatories, Mahmoudi suggests that it can be considered as customary law. Taking that into account, the question that is raised is whether the transit passage regime could be considered as a customary law too, as linked with 12 nautical miles extension of the territorial seas. The author, being unable to provide a clear answer, concludes by saying that coastal States of international straits with sea lanes being in territorial seas such as Iran, Oman and UAE are the losers of the UNCLOS, because the Convention's liberal "transit passage" regime strip them off the authority they used to have over transiting ships. Kraska (2013) is more enlightening regarding the Strait of Hormuz dispute between Iran as a coastal state and the US as a maritime power. First of all, he clarifies that neither Iran nor the United States is a party to UNCLOS. However, Iran has declared that the article 38 transit passage rights of

vessels flagged by countries parties to the Convention only are respected by Iranian authorities. As a result, since the US is not a party of the Convention, Iran does not recognize the privilege of transit passage for any commercial or state vessel that flies the US flag. Second, Iran claims 12 nautical miles territorial sea in line with article 3 of the Convention, because even though it is not a party of the UNCLOS, Iran believes that the extension to 12 miles has been now part of international customary law. Consequently, Iran recognizes its obligation to permit the US ships non-suspendable innocent passage through the territorial sea of Iran, such as the Strait of Hormuz which is a much more restrictive regime than that of transit passage through international straits. The United States, on the other hand, believes that the transit passage regime of the UNCLOS has turned out to be customary law and in virtue of that the US ships enjoy the article 38 transit passage regime through the Strait of Hormuz. Following Kraska the US warships heading to the US Fifth Fleet base in Manama Bahrein (Gresh 2010), Traversing the Persian Gauntlet: US Naval Projection and the Strait of Hormuz (p1), when they enter the Strait of Hormuz, they undertake a non-suspendable innocent passage by Iranian perspective and a much more liberal transit passage under the US perspective. Kraska notes that the Iran-US dispute led to the "tanker war" in the Persian Gulf from 1984-87 with a death toll of about 400 civilian seafarers and about 500 commercial vessels damaged.

2.4 Iran

Iran's naval strategic intentions have been influenced by the experience gained in the sea fighting during the Tanker War 1980-88 (Iranian Naval Forces, 2017). The ONI identifies "asymmetry" as the cornerstone of Iran's Access Denial (AD) strategy, which is further analyzed as passive defense, capitalizing on favorable geography, and the primacy of Iran's moral. First, passive defense capability is based on lessons learned from Iraq's extensive defense infrastructure damages suffered by the US-led coalition dominant airpower during the wars of 1991 and 2003. In this sense, Iranians believe that since they are unable to compete with opponents' overwhelming power projection, "camouflage, concealment, and deception" would be key elements of their passive defense strategy. Second, the narrow waterways of the Strait of Hormuz offer Iran the opportunity to "blackmail" powerful states, by launching sporadic attacks against oil tankers by using mines, coastal or naval missiles, drones, etc. Finally, Iranian leadership praises the religious morality of the navy's personnel that will motivate people to sacrifice themselves if need be. Regarding the command structure of the Iranian Navy, ONI highlights that unlike most of the ordinary navies, Iranian navy is essentially divided into two main branches: the Islamic Revolutionary Guard Corps

(IRGC) operating as a legitimate asymmetric naval force having sole responsibility for the Persian Gulf and the Islamic Republic of Iran Navy (IRIN) responsible for the Gulf of Oman and the Caspian Sea. The question that is raised is: what might be the implications to the global economy if the IRGC takes eventually the step of launching asymmetric warfare operations in the Strait of Hormuz? Cordesman (2019), notes that within hours after two recent attacks against loaded tankers – the "Frontline" and the "Kokuka Courageous" – on June 12, 2019, just outside the Persian Gulf, the price of crude oil raised by 4%. Cordesman (2019) stresses that instead of going to a doomed war against a superior opponent, Iran can easily resort to effective sporadic, low-level attacks against oil-tankers creating havoc in the oil market and international economy. Regarding the US in particular, he argues that at present 20% of its oil imports come from the Gulf, meaning that whatever disruption in seaborne-traded oil supply may happen, it will affect the US internal oil market as much as in any other country in the world. However, he points out that the "top 15" exporters to the US such as China, Japan, South Korea, Taiwan, etc currently providing some 28%-30% of US imports will be forced to increase the price tags of the goods heading to US consumers. That's why Cordesman (2019) concludes that "US energy "independence" is little more than an economic myth".

2.5 United States

Till (2015) explains the new US Maritime Cooperative Strategy for 21st Century Seapower: Forward, Engaged, Ready (CS21). He notes that CS21 creates a forum for navies to work together towards the security of sea trade operations across the seas. In other words, the US Navy is introducing the idea of a "global network of navies" to support international stability and maritime security. Till trying to emphasize his point, quotes Mahbubani: "the real reason why most international waterways remain safe and open – and thereby facilitate the huge explosion of global trade we have seen – is that the American Navy acts as the guarantor of last resort to keep them open". It is important to note that even though the US has not signed UNCLOS yet, remains a strong supporter of the IMO, abiding by its regulations. Undoubtedly, IMO offers the legal background for a maritime power such as the US to employ military force to achieve strategic goals. Regarding the US military stationed in the Gulf, Melvin (2019) states that the US maintains substantial military forces in the Gulf; Two airbases and the US Naval Forces Central Command in Bahrein, 15,000 US personnel at an airbase and three military camps in Kuwait; 10,000 US personnel at an airbase in Qatar, the biggest US base in the Middle East; and 5,000 personnel at an airbase in the UAE. Tensions

between the US and Iran have been grown since May 8, 2018, when the US announced its withdrawal from the Joint Comprehensive Plan of Action (JCPOA), also known as the "Iran Deal" or the "Iran Nuclear Deal (Landler 2018).

2.6 NATO

Similarly, Alliance Maritime Strategy (2011) of the North Atlantic Treaty Organization (NATO) identifies four roles for NATO maritime forces: deterrence and collective defense; crisis management; cooperative security; and maritime security. It is essential to note though that NATO is emphasizing that missions derived from these roles should be undertaken under international law, including any applicable treaties, customary law, and any relevant UN Security Council resolutions. It is worth to note that NATO recognizes the importance of maritime trade business for the economies of alliance country-members. For that reason, NATO has issued the Allied Tactical Publication 02.1 (ATP-02.1) Naval Cooperation and Guidance for Shipping (NCAGS). The purpose of this publication is to provide Ship Owners, Operators, Masters, and Officers with information regarding the interaction between naval forces and merchant shipping. In particular, this publication serves as a handbook for the worldwide application of NCAGS principles and procedures that exist to enhance the safety of shipping in times of tension, crisis, or conflict. NATO ATP 02.1 pp 1-1

2.7 IMO Security Policy

Trelawny (2013) in his "IMO Maritime Security Policy Background Paper", describes the development of the IMO security regulatory system. By his assessment, two major security incidents motivated the IMO to respond accordingly. The first one was the hijacking of the Italian cruise vessel Achille Lauro in October 1985. As a result, IMO took immediate action by reviewing relevant incidents involving terrorism on board ships and in 1988 the Convention for the Suppression of Unlawful Acts against the Safety of Maritime Navigation (SUA) details measures against persons committing unlawful acts against ships. The second one was the terrorist attack of September 11 in New York City. In 2002 the Organization adopted several amendments to the International Convention for the Safety of Life (SOLAS), 1974, that led to the International Ship and Port Facility Code (ISPS) Code. The ISPS Code entered into force in 2004 aiming at guiding to ensuring the security of ships and port facilities through risk management activity. This activity includes two basic functions: risk assessment and required security measures. In addition, Trelawny, notes that IMO has taken a number of initiatives in order to improve the security on ships and ports such as the new seafarer's identity document through cooperation with the International Labor Organization

(ILO) in 2004, the installment of the Automatic Identification System (AIS) and the Ship Security Alert System (SSAS) in 2005 through cooperation with the World Customs Organization (WCO). He is concluding that the ISPS Code implementation, in general, has contributed significantly to enhancing maritime security, however, he notes that there is an alarming lack of stringency of adherence to Codes provisions in some instances. Similarly, International Shipping and Oil Voluntary Associations, Classification Societies and Protection and Indemnity Insurances are encouraging initiatives involving the improvement of maritime security. BIMCO, ICS, IGP&I Clubs, INTERTANKO and OCIMF have issued the "Best Management Practice 5 (2018) to help ships plan their voyage and to detect, avoid, deter, delay and report attacks, deter piracy and enhance maritime security in the Red Sea, Gulf of Aden, Indian Ocean and the Arabian Sea.

2.8 Conclusion

The purpose of this review was to help reader: first to understand what is known on the concept of maritime security; second, to understand the strait of Hormuz dispute; third, to explore the naval strategies of Iran and the US along with NATO; and finally to assess the potentials of the IMO security regulatory system shipping industry best practices. It is becoming clear that even though maritime security has no definite meaning, it remains intrinsically geopolitical. The pattern of the dispute in the Strait generates maritime security challenges that have been influenced enormously by the contradicting maritime strategies between a coastal state and a maritime power and its allies. Apart from that, the review has shown that the geopolitical value of the wider region led to a substantial ramp-up in the number of foreign naval forces operating towards the improvement of the maritime security situation. On the other hand, IMO is providing valuable guidance to the contracting states, towards again the improvement of maritime security of ships and port facilities, through mainly the ISPS Code. However, the reviewed literature revealed a gap of research on the likelihood of effective collaboration between naval forces and the international maritime industry. Contracting governments, navies, shipowners, and masters can come together to develop a solid joint course of action under certain circumstances towards the improvement of maritime security in the Strait of Hormuz and the surrounding region.

CHAPTER 3
RESULTS

3.1 Introduction

The objective of this paper is to prove the research thesis statement of this dissertation claiming that: The employment of naval forces along with ISPS Code implementation can reduce the vulnerability of merchant vessels to maritime security challenges in the Strait of Hormuz. To do so, the remainder of this paper proceeds in four chapters, including this Methodology. The fourth chapter presents quantitative data regarding the Tanker War (1980-88) as described by Cordesman "The Tanker War and the Lessons of Naval Conflict". It briefly includes the background of the Tanker War, focusing on major incidents, the number of vessels attacked, casualties, and weapons used against merchant vessels. Apart from that, it presents qualitative data first, on the current naval forces operating in the wider region of the Strait of Hormuz; second, on the today security environment; and finally, on the security guidance provided by shipping and naval community. The fifth chapter will be challenging the research thesis statement through two questions. The first question examines the legal status of a naval force operating in the Strait and the second question analyzes the role of a naval force in addressing threats to merchant vessels. The discussion in the second question, is carried out through a step by step process leading to the demonstration of the thesis statement.

3.2 Tanker War Review

Tanker War, 1980-88 was the largest naval conflict since World War II and the bloodiest of the late 20th century (Navias 2019). By using the Tanker War case study, it will become evident that the employment of naval power instead of bringing the belligerents to the table of negotiations, can easily escalate a conflict. In 1980, Iran with a population of 50 million mobilized to attack Iraq of 17 million to defend the revolution. By the summer of 1982, Iraq was on the defensive and remained so until August 1988. The death toll overall was an estimated 1 million for Iran and 250,000 – 500,000 for Iraq. (Iran and Iraq 2019) The so-called Tanker War began unexpectedly with an attack, not against tanker vessels but freighters. In fact, on October 7, 1980, three foreign freighters were sunk, and two others damaged by Iranian shells in the Iranian port of Khorramshahr during an exchange of fire with attacking Iraqi forces. At least 20 crew members were killed (Cordesman 1990). Others believe that the Tanker War started in early 1984 when Iraq attacked the oil terminal and oil tankers at Kharg Island. From 1980 until 1984, Iran had little ability to attack commercial

shipping bound for Iraq, but this eventually changed; by 1984 Iran was able to engage tankers bound for Iraq effectively and the Tanker War started coming to full swing. A wide range of naval and air weapon systems was used against tankers, like missiles, mines, and gunfire. In late 1986, Kuwait requested assistance from the international community, including the US. The Reagan administration acceded to the request, and the US reflagged Kuwaiti tankers, making them US ships eligible for US Navy escort. By 1987 the world's largest maritime convoy operation since World War II initiated. It was to be called **Operation Earnest Will**, and it would involve scores of U.S. warships (Peniston 2013). In May 1987, the USS Stark was struck by two Exocet missiles fired from an Iraqi Mirage F1. The main reason for the incident has been identified as human error. USS Stark (Cordesman 1990) was tracking the fighter when it fired on the ship, but it was unable to detect the inbound Exocet. The operator had turned off the audio alert because so many signals were coming in, he could not concentrate on his duties. The evidence cited by the US Navy indicates that if all the systems in the ship had been properly turned on and operated, it would have been able to defend itself. Thirty-seven US crew members were killed and twenty-one injured. On April 14, 1988, the USS Samuel B. Roberts struck an M-08 sea mine, only ten crewmen were injured no one killed (Cox 2019). The crew fought the fire and flooding and saved the ship. In July 1988, the USS Vincennes shot down the Iranian Air Flight 655 by launching two SM-2 surface-to-air missiles. The operational team of the ship instead of identifying Air Flight 655 as a civilian airline, they thought that it was an Iranian F-14. As a result, 290 passengers and crew members were killed. The US recognized the incident as a terrible human tragedy and expressed deep regret over the loss of lives caused by the incident (Cordesman 1990). Eventually, on August 8, 1988, Iran and Iraq agree to a ceasefire.

3.2.1. Intentions of Belligerents

Cordesman (1990) suggests that the intentions of the States involved in the Tanker War were as follows:

Tanker War Phase 1: 1980-1984

a. Iraq: to attack against Iranian flag tankers to weaken its ability to export oil.
b. Iran: to maintain naval superiority in the Gulf by keeping Iraqi naval forces in ports.

Tanker War Phase 2: 1984-1988

a. Iraq: to attack against neutral tankers trading in Iran and oil facilities to force Iran to a settlement.
b. Iran: to attack against neutral tankers to force the West to intervene.

c. US-led Coalition (1987-88): to ensure the freedom of passage for tankers to Kuwait and the overall security of shipping to and from neutral Gulf countries.

3.2.2 Tanker War Data Tables

Robert Strauss Center provides valuable tables of information regarding the tactical level of the Tanker War. The following quantitative information displays the weapon systems used during the Tanker War to challenge the security of ordinary maritime activity through the Strait of Hormuz and the Gulf. Besides, the following tables indicate valuable information on the implications of the loss of seafarers' lives and vessels' damages.

3.2.2.1 Attacks on Ships

The table below provides the most widely published counting in the United States of the number of ship attacks by each belligerent (Lloyd's Shipping Intelligence, cited in O'Rourke 1988). On a cumulative basis, Iraq has accounted for about three-fifths of the attacks. In 1987, however, Iran drew roughly even with Iraq in the number of ships attacked for the first time in the tanker war.

Attacker	1981	1982	1983	1984	1985	1986	1987	Total
Iraq	5	22	16	53	33	66	88	283
Iran	0	0	0	18	14	45	91	168
Total	5	22	16	71	47	111	179	451

Sources: *The Washington Post*, 13 October 1987, p. A12, and *The New York Times*, 10 January 1988, p. E3. (From Lloyd's Shipping Intelligence Unit for 1981 through 1986, and Center for Defense Information for 1986 and 1987).

Table 1. Attacks on Ships in the Persian Gulf by Belligerent

3.2.2.2 Weapon Types

Table 2 shows the United Nations data by the weapon used. Mines were employed last year for the first time since 1984 (Lloyd's Shipping Intelligence, cited in O'Rourke 1988). The first 1987 mine attack occurred near Kuwait, within a day of the Iraqi attack on the USS Stark (FFG-31). The victim of the mining was one of three Soviet-flag ships chartered by Kuwait only weeks earlier. Even counting some of the unknown attacks as mine-related, however, mining accounted for only a small fraction of all attacks in 1987. The significant attention paid to the mining threat in the middle months of the year by both on-scene naval forces and the Western press might thus be seen in part as a reflection of the psychological effect that mines can generate.

The category "missile/rocket/grenade" effectively blurs the distinction between Iraqi attacks, which almost always involve missiles, and Iranian attacks, which more often involve rockets and rocket-propelled grenades. A large share of the 1987 unknown attacks must be missile-related since the 1987 total for the "missile/rocket/grenade" category is not enough to account for Iraq's 1987 attacks. The 1987 data also reflects Iran's decision to begin using the 4.5-inch guns on its frigates.

Type of weapon used	1984*	1985	1986	1987	Total
Missile/Rocket/Grenade	20	37	63	67	187
Mine	2	0	0	8	10
Gunfire	1	1	1	11	14
Other/Unknown	14	12	20	83	129
Total	37	50	84	169	340

Source: Numbers compiled from individual ship attack summaries presented in the United Nations Security Council Document S/16877 of 31 December 1984.
* Data for June through December.

Table 2. Attacks on Ships in the Persian Gulf by Type of Weapon Used

3.2.2.3 Tanker War Casualties

Table 3 shows the United Nations data on people killed, wounded, and missing as a result of the tanker war (Lloyd's Shipping Intelligence, cited in O'Rourke 1988). Some counting of the total number killed is two or three times as high as the figure in Table 5. Iranian speed boat attackers in 1987 reportedly perfected the art of concentrating their fire on the crew compartments of their target ships. The effect of this tactic on total casualties, however, is hard to assess. The 1987 casualty data in Table 3, though incomplete, do not reflect a marked jump in the number of killed, wounded, and missing per attack.

Casualties reported	1984*	1985	1986	1987	Total
Killed	34	7	34	41	116
Wounded	17	20	43	87	167
Missing	9	3	10	15+	37+
Total of above	60	30	87	143+	320+
Attacks with no reported casualties	8	36	55	117	216

Casualties reported	1984*	1985	1986	1987	Total
Attacks where casualty information was not reported	17	4	6	20	47

Source: Same as for Table 2.
* Data for June through December.

Table 3. Casualties Resulting from Attacks on Ships in the Persian Gulf

3.2.2.4 Attacks on Ships

Table 4 provides the most widely published counting in the United States of the number of ship attacks by each belligerent (Lloyd's Shipping Intelligence, cited in O'Rourke 1988). On a cumulative basis, Iraq has accounted for about three-fifths of the attacks. In 1987, however, Iran drew roughly even with Iraq in the number of ships attacked for the first time in the tanker war.

Attacker	1981	1982	1983	1984	1985	1986	1987	Total
Iraq	5	22	16	53	33	66	88	283
Iran	0	0	0	18	14	45	91	168
Total	5	22	16	71	47	111	179	451

Sources: *The Washington Post*, 13 October 1987, p. A12, and *The New York Times*, 10 January 1988, p. E3. (From Lloyd's Shipping Intelligence Unit for 1981 through 1986, and Center for Defense Information for 1986 and 1987).

Table 4. Attacks on Ships by Belligerent

3.2.2.5 Attacks by Type of Ship

Table 5 shows the United Nations data by type of ship attacked. More than three-quarters of the ships attacked have indeed been tankers or product carriers of one kind or another (Lloyd's Shipping Intelligence, cited in O'Rourke 1988). Non-petroleum cargo ships, however, came under much more frequent attacks in 1987.

Type of Ship	1984	1985	1986	1987	Total
Oil Tanker / Product Carrier	21	35	78	125	259
Cargo/Freighter/Container/Combination	11	9	1	31	52
Supply / Support	3	3	0	4	10
Tug	0	3	3	6	12
Other / Not Specific	2	0	2	3	7

Sources: Same as Table 2

Table 5 Attacks on Ships in the Persian Gulf by Type of Ship Attacked

3.3 Lessons Learned

Robert Strauss Center for International Security and Law provides the following list of key takeaways regarding the eight-year Tanker War:

a. Iran and Iraq used anti-ship cruise missiles in more than half of all attacks on shipping during the Tanker War (O'Rourke 1988). Iraq used missiles in approximately 80% of their attacks on commercial ships.

b. Oil tankers are not very vulnerable to damage. 61% of the ships attacked during the Tanker War were oil tankers. In total, only 55 of the 239 petroleum tankers (23%) were completely sunk or declared CTL (Constructive Total Loss), compared to 39% of bulk carriers and 34 percent of freighters.

c. The oil market is likely to adapt to disruption in the Strait of Hormuz. Initially, the Tanker War led to a 25% drop in commercial shipping and a sharp rise in the price of crude oil. But the Tanker War did not significantly disrupt oil shipments. Iran lowered the price of oil to offset higher insurance premiums on shipments, and the real global oil price steadily declined during the 1980s. Even at its most intense point, the Tanker War failed to disrupt more than two percent of ships passing through the Persian Gulf.

d. Iran has little incentive to close the Strait of Hormuz. Despite repeated Iranian threats to close the Strait of Hormuz during the Tanker War, Iran did not follow through with this threat, as they depended on the sea-lanes for vital oil exports.

3.4 IMO Vessel Attack List

The following list of vessel attacks involving explosive devices has taken place from 2000 onwards. This list does not include piracy attacks and hijackings (IMO and Maritime Security Historic Background).

- WBIED attack on the USS Cole in the port of Aden in Yemen, 10 June 2000
- WBIED attack on the oil tanker SS Limburg, in the Gulf of Aden, 6 October 2002
- Timed bomb attack on the Super Ferry 14, in the Philippines, 27 February 2004
- WBIED attack on the VLCC M. Star, in the Persian Gulf, 27 July 2010

3.5 Today's Maritime Security Environment

Since the end of the Tanker War the Strait of Hormuz, the Horn of Africa and the Bab el-Mandeb Strait have experienced a substantial build-up of foreign military deployments. Major powers over the last decades have invested heavily in military installations (such as

land-based facilities, naval bases, naval forces on permanent deployment, airstrips, and logistics hubs). International institutions of the shipping industry have issued a range of publications that provided valuable guidance for safety and security. IMO has issued the ISPS Code in efforts to regulate security issues for ships and ports. NATO has issued a publication to standardize the interaction between NATO ships and merchant vessels. However, the threat to international shipping and freedom of movement through the Straits remains ever-present" (Navias 2019). Judging by the tanker attacks of 2019 as described in Appendix 1, it becomes quite clear that security tension in the Strait of Hormuz remains still a challenge. In this sense, the international community responded by sending more naval forces in the area (in the context of CTF SENTINEL) as an attempt to support the freedom of navigation in the Strait.

3.5.1 Naval Operations in the Strait of Hormuz Region

At present, global and regional maritime security stakeholders are currently undertaking the following multinational naval activities in the wider area of the Strait of Hormuz:

a. CMF (Combined Maritime Forces): *Established in 2001, to establish, promote and protect the freedom of navigation for all legitimate seafarers by countering terrorism, piracy, narcotics, smuggling and any other emerging threats through in an area including the Suez Canal, Bab El Mandeb, Strait of Hormuz, Red Sea, Gulf of Aden Persian Gulf, Gulf of Oman, Arabian Gulf and Indian Ocean. Consists of Australia, Bahrein, Belgium, Brazil, Canada, Denmark, France, Germany, Greece, Italy, Iraq, Japan, Jordan ,Kuwait, Malaysia, Netherlands, New Zealand, Norway, Pakistan, Philippines, Portugal, Qatar, Republic of Korea, Kingdom of Saudi Arabia, Seychelles, Singapore, Spain, Thailand, Turkey, UAE, UK, USA, Yemen.* CMF is *commanded by the US Navy.* Includes three Combined Task Forces, namely CTF 152, CTF 150 and CTF 151. *(Combined Maritime Forces 2019)*

b. CTF 150: *Established in 2002 to conduct intelligence-led, maritime security operations to disrupt terrorism and illegal activities, in the international waters of the Middle East and Northern Indian Ocean. Uses assets from CTF member nations. CTF 152 currently is commanded by the Royal Navy (Coalition Task Force 150 2019)*

c. CTF 151: *Established in 2009 to disrupt piracy and armed robbery mainly in the Gulf of Aden and the Somali Basin. Uses assets from CTF member nations. CTF 152 currently is commanded by the Kuwait Navy (Coalition Task Force 151 2019).*

d. CTF 152: *Established in 2004 to conduct Maritime Security Operations (MSO) and remains prepared to respond to any crisis that may develop. Consists of ships, aircraft, and*

personnel from Saudi Arabia, Bahrein, Jordan, Qatar, Kuwait, UAE, UK, US, Italy, and Australia. CTF 152 currently is commanded by the Royal Jordanian Navy and reports to CMF Commander (Coalition Task Force 152 2019)

e. CTF SENTINEL: Established in 2019, *to deter malign activity, promote maritime security and stability, and ensure freedom of navigation and free flow of commerce in international waters throughout the Arabian Gulf, Strait of Hormuz, the Bab El Mandeb Strait and the Gulf of Oman*. Consists of *ships, aircraft, and personnel Albania, Australia, Bahrein, Kingdom of Saudi Arabia, UAE, UK, and the US (New US-led Coalition 2019).*

f. UKMTO (UK Maritime Trade Operations): *Established in 2001. Operates a Voluntary Reporting Scheme (VRS) for the Red Sea, the Gulf of Aden and the Arabian Sea and acts as the primary point of contact for merchant vessels and liaison with military forces in the region. (UKMTO Reporting 2019).*

3.5.2 Security Guidance by Shipping and Naval Community

The shipping industry and NATO have issued the following publications in support of addressing maritime security challenges applicable to the region of the Strait of Hormuz too.

a. Best Management Practices 5 (BMP5) 2019 issued by BIMCO Maritime Security Committee (BMP5 2018)

Objective: Guidance to be used to Deter Piracy, and Enhance Maritime Security in the Red Sea, Gulf of Aden, Indian Ocean and the Arabian Sea.

b. Ship Security – Hull Vulnerability Study 2019, issued by the OCIMF.

Objective: To determine the consequences of attacks by Anti-Ship Missiles (ASMs), Water-Borne IEDs (WBIEDs) and ATGWs to seafarers and the vessel (Ship Security 2019).

c. NATO Allied Tactical Publication (ATP) 02.1 2014 issued by NATO Standardization Office. Objective: To provide Ship Owners, Ship Operators, Masters and Officers with information regarding the interaction between naval forces and merchant shipping. (NATO ATP-02.1 2018).

CHAPTER 4
DISCUSSION

4.1 Introduction

The primary purpose of this chapter is to challenge the research thesis statement claiming that: The employment of naval forces along with the ISPS Code can reduce the vulnerability of merchant vessels to maritime security challenges in the Strait of Hormuz. The thesis statement will be tested through the following questions. First, what would be the legal framework of naval forces employment in the Strait of Hormuz to avoid escalation? Ideally, the UN "as the legitimate representative of the community of states" is the only international institution capable of calling for any military operation. But is that the case in the Strait of Hormuz? In the following discussion, this will further be elaborated. Second, how naval forces can protect merchant vessels from incoming anti-ship missiles and WBIEDs. The main contribution of this paper is to fill a gap in the existing literature on the role of naval forces in reducing the vulnerability of merchant vessels sailing in the Strait of Hormuz to incoming anti-ship missiles and WBIEDs.

4.2 Legal Framework of Naval Forces Employment

United Nations is the only international institution authorized to employ military force granted by its member-states. However, there is not any United Nation Security Council (UNSC) mandate for naval forces deployed in the Strait and seems that can never be. Geir Ulfstein (2019) claims that a UNSC mandate for military action in the Persian Gulf is in any case unlikely. The reason is that the Security Council can authorize military actions to ensure peace and security, however, protection of shipping might not fall under the Security Council's competencies to maintain peace and security (Ulfstein). Second, the Strait of Hormuz is an *international strait* covered by territorial waters possessed by Iran and Oman. As it has already been analyzed thoroughly in the Review of Literature, Iran as a coastal state claims sovereignty over its territorial waters in the Strait and at the same time, other states claim their extensive right to transit the Strait under the regime termed as *transit passage,* according to UNCLOS. Iran though has not acceded to UNCLOS, claiming that other states' vessels should sail the Strait (and especially the part of the Strait covered by *Iran's territorial waters)* under the restrictive regime of *non-suspendable innocent passage.* But innocent passage regime through territorial waters means that Iran may temporarily suspend the passage of any vessel moving through the Strait of Hormuz. Given that all the above applied to merchant and military vessels alike, there are chances for the argument against the

deployment of naval forces to succeed. While acknowledging the previously mentioned challenges there are mainly two counter-arguments for naval forces to be employed in the international strait of Hormuz, under Ulfstein. First, there is no prohibition in the UNCLOS against military ships escorting merchant vessels, meaning that illegal actions against shipping can also be protected by the employment of countermeasures not involving the use of force. Second, any naval task force can operate in the international strait of Hormuz in full compliance with UNCLOS, other international conventions and customary law. Such a legal framework would imply that naval force vessels have to implement the principle of self-defense only, and not the principle of "collective self-defense" which would require a specific UN Security Council declaration recognizing a situation of *armed aggression* (article 51 UN Charter: Nothing in the present Charter shall impair the inherent right of individual or collective self-defense if an armed attack occurs against a Member of the UN, until the SC has taken the measures necessary to maintain international peace and security. Measures taken by members in the exercise of this right of self-defense shall be immediately reported to the SC and shall not in any way affect the authority and responsibility of the SC under the present Charter to take at any time such action as it deems necessary in order to maintain or restore peace and security), against one member-state. In other words, each nation would be responsible for its own Rules of Engagement (ROE), to protect its flag merchant ships, and perhaps third countries' flagged merchant ships provided that an agreement has been in place. As shown above, Iran and US confrontation constitute a specific case because of the historical background and the withdrawal of the US from the "Iran Nuclear Deal". In this sense, any foreign US-led naval task force meaning such as the CTF SENTINEL would be unwelcome by Iran. However, another naval task force, not including US Navy ships, not reporting to a US Commander, and fully compliant with the UNCLOS would be probable acceptable by Iran, since its very existence may be seen by Iranian side as a competitor maritime security provider to the US-led Coalition Task Force SENTINEL.

4.3 Naval Capabilities Against Tanker Threats

a. As mentioned above during the Tanker War, oil tankers proved to be quite resilient to strikes involving missiles or mines. Only 23% of tankers attacked were completely sunk or declared CTL. It is true, that modern merchant vessels are massive and difficult to disable. Unlike the 1980s, most oil tankers today have double hulls, making them more difficult to sink (Weitz 2019). It likely would take a significant amount of ordnance to sink a ship, or even to damage and disable it. However, it would be noteworthy that the collateral consequences to the environment, of sinking a modern commercial vessel would be huge.

b. OCIMF members have raised concerns about increasing attacks against vessels from missiles, crafts carrying Improvised Explosive Devises (IEDs) and hand-held Anti-Tank Guided Weapons (ATWGs) (Ship Security 2019). In this context, OCIMF through a computer simulation study (Hull Vulnerability Study) attempts to determine the likelihood of injury to seafarers, the effect on crew evacuation routes and the scale of damage after a missile, ATWG, and IED attack. Likewise, BMP 5, apart from piracy introduces new security threats for shipping including the use of anti-ship missiles, sea mines, Water-Borne Improvised Explosive Devises (WBIED). BMP5 proceeds deeper into guiding on planning, reporting, protection measures, and reaction when ships under attack. On the other hand, naval community through NATO has issued a tactical publication (ATP-02.1) focused on guiding to ship owners, operators, and masters on how to interact with naval forces to counter a broad range of threats of shipping in times of tension, crisis, or conflict. Interestingly, ATP-02.1 highlights that the implementation of measures dictated by the ISPS Code is vital for vessels' security. BIMCO, ICS, INTERTANKO, INTERCARGO, and OCIMF suggest to shipping companies and masters to use the ATP-02.1

c. Available data on the Tanker War during Iran and Iraq conflict, shown in the previous chapter indicate that attacks against tankers were carried out mainly by the employment of anti-ship cruise missiles, mines, and gunfire. Iraq carried out approximately 80% of its attacks on merchant vessels by using primarily French-made Exocet missiles. As seen in Tables 2 and 3 above, 187 missile attacks, in conjunction with 10 mines and 14 gunfire, killed and injured more than 320 seafarers and sunk or damaged 451 merchant vessels. In the period from the year 2000 onwards, isolated attacks continued to appear which most of the time involved WBIED. Finally, recent attacks against two tankers off Fujairah and two more tankers in the Gulf of Oman in 2019 by what has been reported employed explosive devices planted on the hull of the ships.

d. Either anti-ship missiles or WBIEDs, reaction time is deemed critical not only for merchant vessels per se but for naval ships too. As discussed above the missile attack on USS Stark could have been avoided if the air defense team stood vigilant watch being able to react rapidly. Similarly, the USS Vincennes incident teaches that reaction procedures in case of an air attack (as USS Vincennes thought it was) let alone missile attack requires a rapid and successful reaction to being taken by well-trained operators. Modern navies have invested substantial resources to procure advanced weapon systems along with training packages to

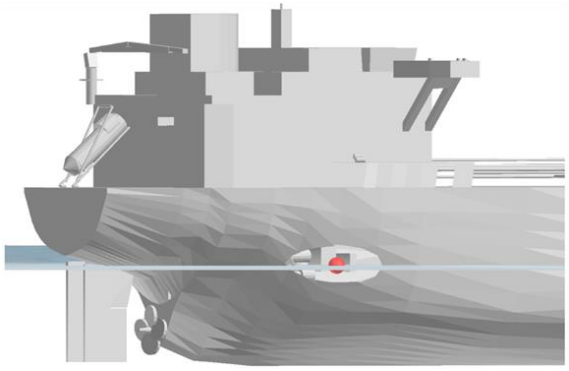

Figure 2 Example of a WBIED detonation on the waterline from the simulation study", pp.7 Hull Vulnerability OCIMF 2019

develop capabilities of rapid response against inbound missiles. However, BMP5 touches on the issue of fast-moving maritime threats. The diagram on page 28 shows of BMP5 an inbound WBIED spotted at 1 nm moving at a speed of 25 knots. The time between WBIED detection and impact is 150 sec (2.5 min). Within 2.5 min, the master needs to alert the crew to move away from the impact side, adopt a brace position or lie flat on the deck. It is necessary to note here, that detection of an incoming WBIED at the distance of 1 nm is possible by experienced lookouts and good weather conditions. Supposing that WBIED detection takes place at less than 1 nm, then available time for the master to alert the crew will be diminished dramatically, resulting in higher casualties. In the event of an anti-ship missile homing on a merchant vessel, BMP5 does not provide any guidance. It simply suggests that **"If no warning is received there will be no time to take any mitigations beyond a PA warning to the crew if a missile is spotted.** But how much time is available for the master to make a PA warning to the crew? In accordance with National Air Intelligence Center, the Exocet anti-ship missile homing on HMS SHEFFIELD during the Falklands War in 1982 was detected visually by ship's lookouts at the distance of 1500 meters meaning that the available time for reaction was just 5 sec, taking into account that the average speed of anti-ship missiles is about 300m/sec.

e. Maritime Domain Awareness (MDA) came about as a result of the Automatic Identification System (AIS) and functions as a tool to improve security at sea. Under the IMO, Maritime Domain Awareness is "the effective understanding of anything associated with the maritime domain and could impact the security, safety, economy, or environment" (Ridgway 2019). MDA mainly follows the patterns of maritime routine within a defined area and analyzes what doesn't follow these patterns. Similarly, NATO and EU naval forces use the MSA (Maritime Situational Awareness) concept focusing on real-time sea picture development made up of recognized vessels and aircraft. The recognition of vessels and aircraft is achieved by ISTAR (Intelligence Surveillance Target Acquisition and Reconnaissance) methods employing electronic intelligence, IR and satellite imaging, and human intelligence. As a result, sea and air contacts inside a defined area are tagged as friendly, hostile or neutral. Besides, any fast-moving object such as missile or boat can be detected early on or even before being launched. Thereafter, MSA recognized picture is

shared among all naval vessels participating in a task force through conventional or satellite data link systems or plain satellite internet. It would be wrong to suggest that it is technically impossible or impermissible for the MSA picture to be shared with oil-tankers transiting the Strait of Hormuz for security purposes. Merchant vessels could have access to MSA through a simple log in an MSA application, it's as simple as that. Transiting masters would be able to receive valuable information and early warning regarding the surrounding sea or air threats with no cost for the company. Only then, will they be alerted of an incoming anti-ship missile more than 1 min before impact. The difference between 5 sec and 1 min may be enough to save several human lives, since by the "Ship Security – Hull Vulnerability Study 2019, OCIMF" an anti-ship missile will most probable hit an oil-tanker on accommodation where the crew live. Naval vessels of course apart from MSA sharing can proceed in engaging anti-ship missiles or WBIEDs heading to merchant vessels to destroy them before reaching their target. Whether an anti-ship missile or a WBIED, will be engaged by a naval ship depends of course on the Rules of Engagement in effect. Potential naval hard killing capabilities against anti-ship missiles heading to merchant vessels could be the medium-range RIM 66 SM 2. As for protection from incoming WBIEDs can be provided by plain gunnery or PCAPS fire.

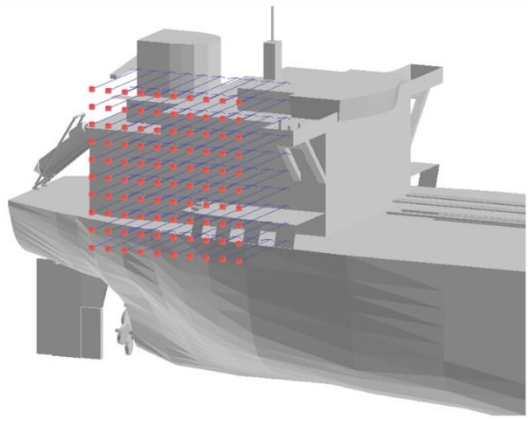

Figure 3 Example from the simulation study showing contact points modeled, showing the contact points where the simulated weapon hit the vessel, pp.5 Hull Vulnerability OCIMF 2019

CHAPTER 5
CONCLUSION

Sinking a modern commercial vessel involves several complexities, whereas seafarers' lives and the environment remain at grave risk. The shipping industry has been taking steps to raise an understanding of contemporary threats. IMO through the ISPS Code provides guidance to counter peacetime threats. On the other hand, naval forces can provide insight and capabilities towards transiting merchant vessels' protection. In high tension periods the type of weapons that are expected to be used is anti-ship missiles, whereas in low tension periods WBIEDs. However, maritime security challenges in the Strait of Hormuz have unique characteristics when it comes to the type of threats. Region's historical background has shown that anti-ship missiles and WBIEDs can be used against merchant vessels depending on the level of tension. In case of an anti-ship missile or WBIED attack, available time for the master to take any mitigations assessed as too short. ISPS Code and shipping community institutions' guidance does not provide any advice on how merchant vessels could be protected from incoming anti-ship missiles and WBIEDs. The gap can be covered by a naval force with a de-escalatory behavior. Operationally, naval forces can protect merchant vessels by the employment of two methods. The first one is the anti-ship missiles or WBIEDs heading to a merchant vessel to be engaged by using naval units' "hard-kill" weapon systems. Under this method, missile or WBIED can be destroyed while flying towards merchant vessels. This method, however, requires naval vessels to be in relatively close distance to the merchant vessel under attack, meaning that "hard-kill" engagement may not effective always. Under the second method, naval ships share the MSA picture to merchant vessels. This method provides the necessary early warning for the master to alert their crew and have them take a brace position or rush to the safe side of the vessel. In other words, naval forces' involvement has the potential to reduce merchant vessels' vulnerability by alerting vessels in time about fast-moving incoming threats. Naval Force can help merchant vessels transiting the Strait of Hormuz by sharing the MSA picture or destroying anti-ship missiles or WBIEDs homing on merchant vessels. The bottom line is that the keys to addressing maritime security challenges for the transiting vessels through the Strait of Hormuz are apart from the ISPS Code implementation, to take advantage of naval forces capabilities when required.

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TABLES AND FIGURES

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APPENDIX 1

Timeline of tensions between Iran and the West

The following timeline cites the events feeding the escalated tension among major state players, like US and Iran (Neely, 2019).

A brief chronology of maritime security events took place in the wider geographical area of the Strait of Hormuz from May to July 2019 can be reviewed as follows:

- **May 12:** two tankers flagged by Saudi Arabia, one flagged by Norway and one flagged by the UAE, were subjected to sabotage operations within the territorial waters less than 12 nautical miles off the coast of Fujairah, UAE without injuries or fatalities.
- **May 14:** the Saudi government announced that "two pump stations on the East pipeline were attacked by armed drones". A Huthi spokesperson subsequently took responsibility for the action.
- **June 13:** the Japanese-owned and Panama flagged KOKUKA COURAGEOUS (27,000 DWT) oil tanker with 23 crew members aboard along with the Norwegian-owned and Marshall Island flagged FRONT ALTAIR (110,000 DWT) oil tanker with 23 crew members aboard were attacked while in the Sea of Oman in a short distance south of the Strait of Hormuz and suffered hull damage and fire. The crew members of both vessels abandoned after the blasts. It remains unclear what caused the blasts. The FRONT ALTAIR was carrying a cargo of ethanol from Qatar to Taiwan and the KOKURA COURAGEOUS was carrying a cargo of methanol from Saudi Arabia to Singapore.
- **June 13:** IMO Secretary-General Kitack Lim condemned the suspected attacks on two tankers off the coast of Oman. "These suspected attacks, coupled with the attacks in the UAE last month, concern me greatly. IMO has developed a comprehensive regime of regulation through the ISPS Code and the SUA Conventions and Protocols to prevent and respond to unprovoked, unlawful attacks on merchant shipping", IMO Secretary-General said among others (International Maritime Organization 2019).
- **June 20:** Iran shot down a US drone which claimed had breached Iranian airspace. IRGC Commander declared that "borders are our red line, and any enemy violating these borders will not go back". The US military asserted that "the aircraft had been operating in international airspace over the Strait of Hormuz". Senior Russian official stated that Moscow shared Tehran's assessment that a US drone shot down by Iran on 20 June, contrary to the US position, entered Iran's airspace.
- **July 11:** the British Defense Ministry in a statement, asserted that "three Iranian vessels attempted to impede the passage of the UK flagged BRITISH HERITAGE (160,000. DWT)

oil tanker through the Strait of Hormuz. Iranian authorities rejected the claim, stating that "there have been no encounters with foreign vessels, including British ones".

- **July 18:** President Trump stated that "a US Navy ship took defensive action against an Iranian drone, which had closed into a very, very near distance…ignoring multiple calls to stand down and was threatening the safety of the ship and the ship's crew. The drone was immediately destroyed".

- **July 19:** the US Central Command announced that it was "developing a multinational marine effort, Operation SENTINEL, to increase surveillance of and security in key waterways in the Middle East to ensure freedom of navigation.

- **July 19:** the Swedish-owned and UK flagged tanker STENA IMPERO (50,000 DWT) was detained by IRGC while passing north through the Strait of Hormuz. Iran's Foreign Ministry spokesman said that the STENA IMPERO was suspected of "violations and damages inflicted on the environment". The ship's owner company, Stena Bulk, said it was not aware of any formal charges.

- **August 1:** The International Chamber of Shipping (ICS), the European Community Shipowners' Association (ACSA) and the Asian Shipowners Association (ASA) jointly urge immediate action by the international community to stop the escalation of tensions and fully respect international law. All countries. It should ensure the safe passage of merchant vessels, by respecting the Freedom of Navigation enshrined in Article 87(1)a and the Right of Innocent Passage defined in Article 19 of the 1082 UNCLOS.

- **September 4:** the Swedish government confirmed "the release of some of the crew members of Swedish-owned and UK flagged STENA IMPERO, which Iranian authorities detained in the Strait of Hormuz on 19 July.