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**Security on Board Energy Carrying Vessels: An Analysis of International and
Regional Regulatory Measures**

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DECLARATION

I, Theone Theodorou, do hereby declare that this dissertation is the result of my investigation and research and that this has not been submitted in part or full for any degree or for any other degree to any other University.

Theodorou.

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22 June 2018

Date

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LIST OF ABBREVIATIONS

2050 AIMS	The 2050 Africa’s Integrated Maritime Strategy
AIS	Automatic Identification System
BMP	Best Management Practices
CCTV	Closed Circuit Television
DWT	Deadweight Tonnage
EIA	Energy Information Administration
GoG	Gulf of Guinea
ICC	International Chambers of Commerce
ICS	International Chamber of Shipping
IEA	International Energy Agency
IGC Code	International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk
ISC	Information Sharing Centre
IMB	International Maritime Bureau
IMO	International Maritime Organisation
ISPS Code	The International Ship and Port Facility Security Code
LNG	Liquefied Natural Gases
LPG	Liquefied Petroleum Gases
LRIT	Long-range Identification and Tracking System
MARPOL 73/78	The International Convention for the Prevention of Pollution from Ships, 1973 as modified by the Protocol of 1978
MR	Medium range
MSC	Maritime Safety Committee
NATO	North Atlantic Treaty Organisation
NGO	Non-governmental Organisations
PCASP	Privately Contracted Armed Security Personnel

ReCAAP	The Regional Cooperation Agreement on Combating Piracy and Armed Robbery Against Ships in Asia
SASS	Ship Security Alert Systems
SC	Security Council
SOLAS	The International Convention for the Safety of Life at Sea 1974
SPM	Ship Protection Measures
SUA	The Convention for the Suppressions on Unlawful Acts against Safety of Maritime Navigation
SUA PROT	The Protocol for the Suppression of Unlawful Acts against the Safety of Fixed Platforms Located on the Continental Shelf, 1988
VLCC	A Very-Large Crude Carrier
ULCC	Ultra Large Crude Carrier
UN	United Nations
UNCLOS	the United Nations Convention on the Law of the Sea 1982

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ABSTRACT

Although the overall number of piracy incidents has decreased over the past few years, almost half the incidents that are reported, involve energy carrying vessels. Given the important role that energy plays in society and the fact that approximately 90% of the world's energy is transported by sea, an adequate framework is essential to ensure energy security. To determine whether the current framework is sufficient, a survey of all the relevant international, regional and domestic instruments is conducted. What becomes evident is that there are no provisions that relate specifically to energy carrying vessels. Energy carrying vessels are used to carry valuable cargo, they are large and slow moving, they travel specific routes and are manned with few crew. For those reasons, energy carrying vessels require additional protections to bridge their vulnerabilities. The need is emphasized by the vast negative effects an attack on an energy carrying vessel can have, which threatens the environment, the economy and the safety and security of crew. A key instrument focusing on maritime energy security is the Luanda Declaration on Maritime and Energy Security (Luanda Declaration). The Luanda Declaration is an African initiative with a regional application. The declaration, however, is merely a guideline and is not binding. The continued high number of incidents affecting energy carrying vessels shows that states have not taken sufficient positive steps in accordance with the Luanda Declaration and that the current framework is insufficient to ensure maritime energy security.

CHAPTER 1: INTRODUCTION

1. INTRODUCTION AND BACKGROUND

On the morning of Saturday the 15th November 2008, Somali pirates made news headlines when they attacked the Liberian flagged MV *Sirius Star*, a very-large crude carrier (VLCC) spanning 333 metres in length and 60 metres in beam.¹ With a deadweight tonnage (DWT) of 319 430 tons, the super tanker was carrying approximately 2 million barrels of crude oil and was en route to the United States of America when armed pirates boarded the vessel over 450 nautical miles off the southeast coastline of Mogadishu.² The 25 crewmembers on board were taken hostage and the vessel was anchored off the Somali coast while negotiations took place.³ A reported ransom of US\$3 million was paid and the vessel was released in January 2009.⁴ This incident demonstrated the advanced technique and precision used by pirates and stands out for two reasons: first, it was the largest ship to ever be seized by pirates at that time, and second, it was the farthest out to sea Somali pirates had ever struck.

Piracy has plagued the oceans since the beginning of trade and the MV *Sirius Star* is only one example of numerous pirate attacks that occur each year. In 2000, there was a drastic upsurge in the number of pirate attacks, which increased from 300 in the previous

¹ 'VLCC hijacked by pirates' *International Chambers of Commerce (ICC) Commercial Crime Services (CCS)*, 18 November 2008 available at <https://www.icc-ccs.org/index.php/news/349-vlcc-hijacked-by-pirates>, accessed on 25 March 2017.

² *Ibid*

³ ICC-IMB Piracy and Armed Robbery Against Ships Report for the period 1 January – 31 December 2008 pg. 56.

⁴ C Liss 'The maritime dimension of energy security' in B K Sovacool (ed) *The Routledge Handbook of Energy Security* (2011) 122.

year to 469.⁵ In 2003 and in 2009 to 2011 the number of pirate attacks spiked once again, as depicted in figure 1 below. This upsurge was a major concern to the international community which reacted quickly, by:

i. Improving the relevant legal framework

At the time of the resurgence of piracy, the legal framework in place was inadequate to combat the fierce and sophisticated tactics used by modern pirates. Piracy of this magnitude had never existed in the past and there was only one international convention, the United Nations Convention on the Law of the Sea 1982 (UNCLOS) that included provisions on piracy. UNCLOS proved to be inadequate because most of the crimes committed fell outside of its scope, which resulted in states not having the necessary jurisdiction to take action. This was due to the definition of piracy as set out in UNCLOS and will be discussed in more detail in Chapter 3. UNCLOS merely establishes jurisdiction and sets out certain rights and obligations on states parties. These obligations are phrased in such a way as to not be too onerous on states and it therefore fails to clearly obligate states to prosecute pirates and ensure that their domestic legislation is sufficient to act in accordance with international jurisdiction. In an attempt to fill the apparent gaps in the legal framework further Conventions, such as the Convention for the Suppressions on Unlawful Acts against Safety of Maritime Navigation 1988 (SUA Convention) and the 2005 Protocol were created. Further, various Resolutions were passed by the United Nations (UN) Security Council (SC) and

⁵ ‘ Number of cases of piracy and armed robbery against ships worldwide from 1998 to 2016’ *Statista* available at <https://www.statista.com/statistics/262930/piracy-and-armed-robbery-against-ships-since-1998/>, accessed on 7 May 2017.

General Assembly (GA) as well as the International Maritime Organisation (IMO).⁶

ii. Implementing vessel hardening tactics

Due to the continued increase of piracy during 2000 to 2012, it became apparent that ships could no longer rely on purely external forces to prevent piracy and as a result the focus turned to internal mechanisms to prevent piracy. The international maritime community introduced the Best Management Practices⁷ (BMP) which sets out various passive defense measures and includes ship hardening tactics such as fencing ships with razor wire or electric fencing, increasing security on board, improving watch keeping, enhancing protection of the ships bridge and other weak or targeted areas, making use of water sprays and foam monitors, using alarm systems and Closed Circuit Television (CCTV), improving lighting, ensuring that tools, equipment, weapons and valuables are kept in secured rooms or safes that cannot be easily accessed by pirates and having a safe place/Citadel for the Master and crew to hide out in when under attack.⁸

iii. Increasing the use of private security by ship owners

Previously, the use of armed guards on board ships was a rare occurrence due to various difficulties. Some of which complexities exist due to the cross-border nature of maritime trade as ships will be required to abide by the laws and

⁶ The relevant Resolutions will be discussed in more detail in Chapter 4.

⁷ The latest version of the Best Management Practices is available at http://eunavfor.eu/wp-content/uploads/2013/01/bmp4-low-res_sept_5_20111.pdf, accessed on 6 May 2017.

⁸ Albatross Ltd. 'Ship Protections Measures' available at <http://mscalbatross.com/ship-protection-measures>, accessed on 6 May 2017.

regulations of each state whose territorial waters they enter. Apart from those difficulties, the lack of framework relating to the use of private armed security has resulted in uncertainty and it is unclear in what circumstances force can be used and the degree of force justified. However, in February 2011 the International Chamber of Shipping (ICS) declared its change of view with regards to the use of private armed guards.⁹ The popularity of this practice rapidly increased and according to an article published in *The Maritime Executive* at least 80% of container ships and tankers make use of armed guards.¹⁰ Private security companies claim to be the largest contributory factor to the decrease in pirate attacks.¹¹ Yet, the use of armed guards remains a highly controversial topic due to “frequent reports of security contractors’ impunity for ... human rights abuses, criminal misconduct, or aggressive behaviour.”¹² That being said, the controversy of this topic goes beyond the scope of this dissertation.

iv. Increasing security at sea

In an attempt to combat piracy and secure shipping lanes certain states, such as China,¹³ have deployed military forces to hot spot areas¹⁴ while other states have

⁹ Ince & Co ‘Piracy: Issues arising from the use of armed guards’ available at https://www.skuld.com/upload/Publications/Piracy/Ince_Piracy-issues-arising-from-the-use-of-armed-guards.pdf, accessed on 18 September 2017.

¹⁰ ‘Armed Guards Now Deployed on 80% of Container Ships, Tankers’ *The Maritime Executive* 18 September 2013 available at <http://maritime-executive.com/pressrelease/Armed-Guards-Deployed-Container-Ships-Tankers-2013-09-18>, accessed on 6 May 2017.

¹¹ ‘Repelling pirate attacks: the measures to protect a ship’ *The Telegraph* 10 February 2014 available at <http://www.telegraph.co.uk/sponsored/culture/captain-phillips-film/10367534/security-against-pirate-attacks.html>, accessed on 6 May 2017.

¹² E. L. Gaston ‘Mercenarism 2.0? The rise of the modern private security industry and its implications for international humanitarian law enforcement’ (2008) 49(1) *Harvard International Law Journal* 221 – 248 at pg. 121.

¹³ ‘China begins anti-piracy mission’ *BBC News* 26 December 2008 available at <http://news.bbc.co.uk/2/hi/africa/7799899.stm>, accessed on 7 May 2017.

joined forces to combat piracy. Some examples are Operation MALSINDO, a joint operation between Malaysia, Singapore and Indonesia,¹⁵ the Combined Maritime Forces (CMF), is a joint operation between 31 member nations¹⁶ with Combined Task Force 150 (CTF 150) focused on maritime security and Combined Task Force 151 (CTF 151) focused on counter-piracy. International Organisations have further created various task forces, some of which include the North Atlantic Treaty Organisation (NATO) Operation Ocean Shield and the European Union Operation Atlanta.¹⁷

v. Creating private non-governmental organisations

States actors alone could not fight the epidemic and the international maritime community had to act jointly. Several non-governmental organisations (NGO's) tasked with combating piracy have been formed over the past years and some of which include the International Chambers of Commerce (ICC) International Maritime Bureau (IMB), Oceans Beyond Piracy, a program of the One Earth Future Foundation¹⁸ and The Contact Group on Piracy off the Coast of Somali.

¹⁴ According to the International Chambers of Commerce, Commercial Crime Services hot spot areas include South East Asia and the Indian Sub-Continent, Africa and the Red Sea and South and Central America and the Caribbean Waters. Available at <https://icc-ccs.org/piracy-reporting-centre/prone-areas-and-warnings>, accessed on 7 May 2017.

¹⁵ P. S. Anabraba *Multinational counter-piracy operations: how strategically significant is the Gulf of Guinea to the major maritime powers?* (Unpublished M.Sc thesis, Naval Postgraduate School, 2015)

¹⁶ Member states include Australia, Bahrain, Belgium, Canada, Denmark, France, Germany, Greece, Iraq, Italy, Japan, Jordan, Republic of Korea, Kuwait, Malaysia, the Netherlands, New Zealand, Norway, Pakistan, The Philippines, Portugal, Saudi Arabia, Seychelles, Singapore, Spain, Thailand, Turkey, UAE, United Kingdom, United States and Yemen. Available at <https://combinedmaritimeforces.com/about/>, accessed on 7 May 2017.

¹⁷ L. R. Blank 'Rules of engagement and legal frameworks for multinational counter-piracy operations' (2013) 46(1) & (2) *Case Western Reserve Journal of International Law* 397 – 409 at pg. 397 & 398.

¹⁸ J N Mak 'NGO's, piracy and maritime crime in Southeast Asia' (2013) *Centre for Security Studies* available at <http://isnblog.ethz.ch/international-relations/ngos-piracy-and-maritime-crime-in-southeast-asia>, accessed on 7 May 2017.

vi. Promoting and improving information gathering and sharing

Due to the fact that there are numerous actors involved in the fight against piracy, information sharing is vital for co-operation and success. In fact, there is a duty on states to co-operate in the repression of piracy¹⁹ and therefore it has been argued that there is a duty on states to share information that is not classified.²⁰ Some examples of information gathering and sharing initiatives are the Shared Awareness and Deconfliction (SHADE), which is a forum for military commanders of counter-piracy operations which is dedicated to the exchange of information relevant to combating piracy,²¹ the Regional Cooperation Agreement on Combating Piracy and Armed Robbery Against Ships in Asia (ReCAAP) which created an information sharing centre in Singapore and further Codes which establish information sharing centres, such as the Djibouti Code of Conduct.²²

All of the above have led to a decrease in pirate attacks and according to the ICC IMB 2016 annual piracy report, 2016 had the least number of pirate attacks reported over the past decade. However, although the overall number of attacks has decreased, energy carrying vessels appear to be at risk as nearly half the attacks that occurred

¹⁹ Article 101 of the United Nations Convention on the Law of the Sea (UNCLOS) states “All States shall cooperate to the fullest possible extent in the repression of piracy on the high seas or in any other place outside the jurisdiction of any State” and Article 13 of the Suppression of Unlawful Acts against the Safety of Maritime Navigation (SUA) 1988 states that “States Parties shall co-operate in the prevention of the offences set forth in article 3 [...]”.

²⁰ Y Gottlieb ‘Combating maritime piracy: inter-disciplinary cooperation’s and information sharing’ (2013) 46(1) & (2) *Case Western Reserve Journal of International Law* 303 – 333 at page 304 & 305.

²¹ European Union Institute for Security Studies (Report No 20) *Fighting piracy off the Coast of Somalia: Lessons learnt from the contact group* (2014) pg. 16.

²² Y Gottlieb (2013) *supra* at n.20.

during 2016 involved energy carrying vessels.²³ Further, we are yet to see what 2017 holds considering Somali pirates carried out their first successful attack since 2012 on the MT *Aris 13*, a Bunkering Tanker. During the first quarter of 2017²⁴ there have been a total of 43 attacks, 18 of which involved energy carrying vessels. ²⁵ It is noteworthy that the total number of attacks for the first quarter of 2017 has increased by 6 incidents compared to the first quarter of 2016, which had a total of 37 attacks.²⁶ The high number of incidents involving energy carrying vessels and the consequential threat to energy security, the environment and the safety of crew is a great concern and a basis to study the relevant framework to establish whether it is sufficient.

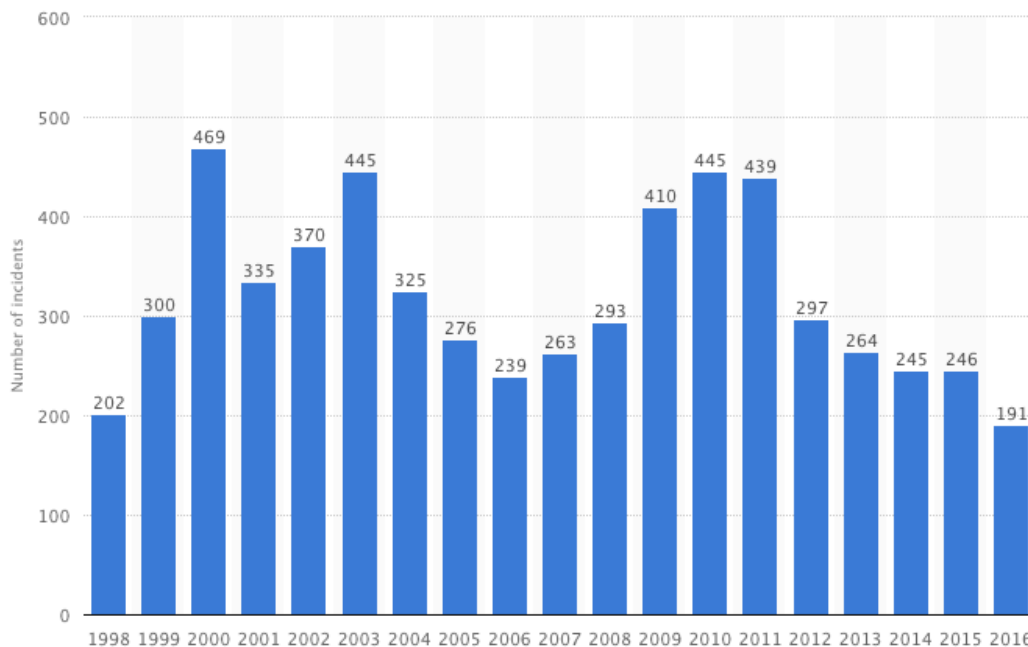


Figure 1: Number of cases of piracy and armed robbery against ships worldwide from 1998 to 2016 (Source: Statista)

²³ ICC-IMB *Piracy and Armed Robbery Against Ships Report for the period 1 January - 31 December 2016*.

²⁴ The first quarter is from 1 January 2017 to 31 March 2017

²⁵ ICC-IMB *Piracy and Armed Robbery Against Ships Report for the period 1 January – 31 March 2017*

²⁶ Ibid.

2. AIM AND OBJECTIVE

There are various contributory factors to the high number of attacks on energy carrying vessels, such as, the high value of the cargo and the specialised vessel, which can be used to procure a high ransom. For example, the ransom paid for the release of the MV *Sirius Star* was US\$3 million. When compared to the value of the ship, which was approximately US\$150 million and to the value of the cargo, which was approximately US\$100 million, the ransom paid was a relatively small price to pay for the safe return of the vessel, cargo and crew.²⁷ Energy carrying vessels may also be more susceptible to attack because of their structure, speed and specific routes travelled which make them vulnerable and therefore easier targets.²⁸ As stated by Palmer, “their slow speeds and low freeboards, when laden, makes these huge ships very vulnerable.”²⁹

This dissertation will provide a study of the above-mentioned vulnerabilities of energy carrying vessels and assesses the legal framework in place, including the international conventions and regional instruments, as well as industry guidelines and recommendations. This dissertation will also survey relevant literature to further assist in recognising any gaps that may exist in the legal framework applicable to energy carrying vessels. The aim of the study is to establish whether the framework takes into consideration those vulnerabilities and provides a sufficient framework to ensure energy security. This dissertation will highlight the adequacy of the framework and point out any deficiencies and shortcomings.

²⁷ C Liss ‘The maritime dimension of energy security’ in B K Sovacool (ed) *The Routledge Handbook of Energy Security* (2011) 122

²⁸ ‘Threats to oil transport’ *Institute for the Analysis of Global Shipping* available at <http://www.iags.org/oiltransport.html>, accessed on 7 May 2017.

²⁹ A Palmer *The New Pirates: Modern Global Piracy from Somalia to the South China Sea* (2014) 148

3. PARAMETERS AND LIMITATIONS OF THE STUDY

This dissertation will specifically focus on security on board energy carrying vessels and will not be concerned with security of pipelines used to transport energy sources or offshore oil platforms. It will focus solely on the framework in place, which is applicable to energy carrying vessels. It will not take into account various factors that affect the implementation of the framework, for example, various states, more specifically African states, are rife with corruption and civil and political tension, and are unable to effectively implement the framework. This however falls outside the ambit of this dissertation. Further, this dissertation does not take into account the difficulty in creating binding provisions that are acceptable to most states. Different states have different cultures, ideologies and political systems and it is extremely difficult to provide for all states so that an instrument will be widely adopted. Also, states are hesitant to adopt instruments that are too onerous. Further, it does not provide an analysis of the root causes of piracy and permanent solutions. Further, energy carrying vessels are susceptible to many perils when out at sea, such as natural and navigational perils, terrorists and piracy. This dissertation will only focus on piracy and the applicable legal framework in place to combat it. Although the laws of an act of piracy and acts of armed robbery against ships is different, for the purpose of the dissertation, the term “piracy” includes armed robbery as defined by Resolution A.1025 (26) of the IMO.³⁰ The above limitations are complex

³⁰ Article 101 of The United Nations Convention on the Law of the Sea (UNCLOS) 1982 defines piracy as follows:

Piracy consists of any of the following acts:

- (a) any illegal acts of violence or detention, or any act of depredation, committed for private ends by the crew or the passengers of a private ship or a private aircraft, and directed:
 - (i) on the high seas, against another ship or aircraft, or against persons or property on board such ship or aircraft;

and fall outside the scope of this dissertation. The aim of this dissertation is solely to establish what framework is in place and whether it was sufficient.

4. RESEARCH METHODOLOGY

This dissertation will be based on desktop research of all relevant primary resources such as Conventions, protocols, official reports and statistics as well as secondary resources such as books, journals and media reports and it will include a qualitative review of relevant secondary sources by analysing, discussing and comparing them. This dissertation will not include empirical research or quantitative research, save for an analysis of various reports and statistics, which have been published.

5. STRUCTURE

This dissertation consists of five chapters. The current chapter is an introduction, setting out the background of the topic, the aims and objectives of this dissertation, the parameters of the research and the research methodology used.

Chapter two is a contextual chapter setting out the definition of maritime energy security, the different types of energy carrying vessels, their size and other specifications.

-
- (ii) against a ship, aircraft, persons or property in a place outside the jurisdiction of any State;
 - (b) any act of voluntary participation in the operation of a ship or of an aircraft with knowledge of facts making it a pirate ship or aircraft;
 - (c) any act of inciting or of intentionally facilitating an act described in subparagraph (a) or (b).

The IMO defines piracy as those acts contained in article 101 of UNCLOS and further defines “armed robbery against ships” as:

1. any illegal act of violence or detention or any act of depredation, or threat thereof, other than an act of piracy, committed for private ends and directed against a ship or against persons or property on board such a ship, within a State’s internal waters, archipelagic waters and territorial sea;
2. any act of inciting or of intentionally facilitating an act described above.³⁰

This chapter will further look at the commodity carried, various chokepoints situated around the globe which are commonly traversed by energy carrying vessels, as well as other high-risk areas, ship vulnerability and the possible dangers that could result from an attack.

Chapter three sets out the international framework in place focusing on the three main conventions applicable to piracy. These include the UNCLOS, the SUA Convention and the 2005 Protocol and the International Convention for the Safety of Life at Sea 1974 (SOLAS Convention). It will analyse those frameworks by identifying provisions that apply specifically to energy carrying vessels to determine whether there are sufficient and adequate provisions to combat the high rate of attacks on these special vessels.

Chapter 4 provides a study of the regional framework and industry regulations, as well as international provisions that have a regional application. This chapter focuses on the framework in South East Asia and West and East Africa as these areas are most affected by piracy. The regional framework will cover various instruments, some of which are ReCAAP, the ReCAAP Guide for Tankers Operating in Asia Against Piracy and Armed Robbery Involving Oil Cargo Theft (ReCAAP Guidelines), the Code of Conduct concerning the Repression of Piracy and Armed Robbery against Ships in the Western Indian Ocean and the Gulf of Aden (Djibouti Code of Conduct), the Best Management Practices for Protection against Somalia Based Piracy (BMP), the Guidelines for Owners, Operators and Masters for Protection Against Piracy in the Gulf of Guinea Region (version 2, June 2016) (the GoG Guidelines), the 2050 Africa's Integrated Maritime Strategy (2050 AIMS), The Luanda Declaration on Maritime and Energy Security (Luanda Declaration), the African Charter on Maritime Security Safety

and Development in Africa (the Lomé Charter) and The Code of Conduct Concerning the Repression of Piracy, Armed Robbery Against Ships, Illicit Maritime Activity in West and Central Africa (the Yaoundé Declaration).

Finally, chapter five contains an analysis of the findings of previous chapters and concludes this dissertation in finding that the international framework is insufficient to ensure energy security as it fails to take into consideration the inherent vulnerabilities of energy carrying vessels. This dissertation will show that an African initiative, the Luanda Declaration, provides an optimistic framework for energy security; however, it merely lays the foundation for states to take the necessary steps and promulgate domestic laws to achieve energy security.

CHAPTER 2: UNDERSTANDING MARITIME ENERGY SECURITY

1. INTRODUCTION

Thousands of energy carrying vessels travel the seas each day transporting more than half of the world's energy across the globe.³¹ At sea, these giants must travel through pirate high-risk areas while laden with valuable cargo and are slow moving and low to the water when fully loaded. Their cargo offers a profitable return to pirates and therefore they make alluring targets. On 13 February 2015, eight armed pirates boarded the MT *Lapin* with one goal in mind, stealing her fuel cargo. Once the crew had been taken hostage another pirate ship was brought alongside the MT *Lapin*. All of her fuel oil cargo and some of her bunker oil were siphoned from her tankers to the pirate ship alongside her. The pirates fled once their job was complete.³² The MT *Lapin* is only one example of several attacks using a similar *modus operandi*³³ and provides evidence that energy carrying vessels are in fact being targeted for their cargo. Attacks on energy carrying vessels threaten both energy security and maritime security and have rippling consequences, affecting not only ship and cargo owners but also states and end users worldwide.

This chapter will set out the definition of maritime energy security by looking at the meaning of energy security and maritime security and by explaining how those two concepts are interlinked, forming the concept of maritime energy security. Although

³¹ B Wilson, 'Maritime Energy Security' (2012) NATO SPS sponsored Critical Energy Infrastructure Protection (CEIP) Advanced Research Workshop (NATO ARW) in 2012 in Ankara, Turkey available at <https://ssrn.com/abstract=2229989> accessed on 8 May 2017.

³² International Chamber Of Commerce (ICC) International Maritime Bureau (IMB) *Piracy and Armed Robbery Against Ships Report for the period 1 January – 31 December 2015* at 22.

³³ 'Pirates steal fuel from Malaysian-flagged tanker' *World Maritime News* 18 May 2015 available at <http://worldmaritimeneeds.com/archives/161131/pirates-steal-fuel-from-malaysian-flagged-tanker/>, accessed on 8 May 2017.

maritime energy security is concerned with the security of all things related to energy at sea, this dissertation will only focus on security on board energy carrying vessels. It follows that this chapter will explain what is meant by the term ‘energy carrying vessel’ and for the purpose of elucidation, will set out the different types of energy carrying vessels, their sizes and other specifications. Energy carrying vessels travel along very specific routes leading them through chokepoints situated around the globe. This chapter will set out all the major chokepoints around the globe, the quantity of oil that passes through each chokepoint and the degree of risk faced by energy carrying vessels when transiting each chokepoint. Other high-risk areas will also be discussed. These specific routes and high-risk areas are a major vulnerability of energy carrying vessels as well their size, speed and their few crewmembers. This chapter will discuss these vulnerabilities to establish what factors set these vessels apart from other vessels and it will therefore highlight weaknesses that may require improved legislation and further security. Lastly, this chapter will analyse the various potential consequences of attacks on energy carrying vessels in order to emphasize the importance of security on board energy carrying vessels.

2. KEY CONCEPTS: ENERGY SECURITY IN THE MARITIME CONTEXT

In order to understand what is meant by maritime energy security one must first understand several different terms. Firstly, the term *energy* refers to natural resources such as petroleum, coal, gas, wind, water, nuclear fuel and oil and which is used to create electricity, heat,³⁴ and power transport systems. For the purposes of this dissertation,

³⁴ N Webster *Webster’s New Twentieth Century Dictionary of the English Language* unabridged 2 ed (1979) 601.

energy refers to crude oil and its by-products, coal and gas, which are transported by sea. Energy has been described as the “lifeblood of society because of the essential role it plays in sustaining life on earth.”³⁵ Secondly, *energy security* relates to the availability of natural energy resources and is defined by the International Energy Agency (IEA) as the “uninterrupted availability of energy sources at an affordable price.”³⁶ Approximately 90% of the world’s energy is transported by sea and therefore, the free and safe movement of energy at sea is essential to ensure energy security.³⁷ In essence, maritime energy security is energy security within the maritime domain. The third term that must be understood is *maritime security*. Maritime security does not have a universally agreed definition,³⁸ however, two predominant definitions have evolved over the years, namely, a positive definition and a negative definition.³⁹ The former defines maritime security as a positive state that should be achieved by maritime security; for example, a “good or stable order at sea”⁴⁰, while the latter defines it by the absence of named threats that exist within the maritime domain.⁴¹ The 2008 UN Secretary General’s Report on Oceans and the Law of the Sea sets out specific threats, which the absence of can be used to define maritime security, namely, piracy and armed robbery against ships, terrorist acts involving shipping, offshore installations and other maritime interests, illicit trafficking in arms and weapons of mass destruction, illicit traffic in narcotic drugs and psychotropic

³⁵ Institute of Energy Research *Energy Overview* available at <http://instituteforenergyresearch.org/topics/encyclopedia/energy-overview/> accessed on 20 April 2016.

³⁶ International Energy Agency *What is Energy Security?* available at <http://www.iea.org/topics/energysecurity/subtopics/whatisenergysecurity/> accessed on 20 April 2016.

³⁷ R Herbert-Burns ‘Tankers, specialized production vessels and offshore terminal: vulnerability and security in the international maritime oil sector’ in R Herbert-Burns... et al (ed) *Lloyd’s MIU Handbook of Maritime Security* (2009) 142.

³⁸ United Nations General Assembly *Secretary General’s Report on Oceans and the Law of the Sea* (10 March 2008) A/63/63, see also A/70/74Add.1.

³⁹ C Bueger ‘What is maritime security?’ (2015) 53(1) *Marine Policy* 159 – 164 at 159.

⁴⁰ *Ibid* 159.

⁴¹ *Ibid* 159.

substances, smuggling and trafficking of persons by sea, illegal, unreported and unregulated fishing and intentional and unlawful damage to the marine environment.⁴² The Lomé Charter defines maritime security to mean “the prevention of and fight against all acts or threats of illicit acts against a ship, its crew and its passengers or against the port facilities, maritime infrastructure, maritime facilities and maritime environment”.⁴³

In light of the above definitions, maritime energy security refers to the security of energy within the maritime domain, which includes the transport of energy sources by ship or pipeline, the protection of platforms and oilrigs at sea and other infrastructure related to energy, to ensure the uninterrupted availability of energy sources. Liss states, “Many countries around the world today rely on (imported) oil, gas and other energy resources transported by sea. This makes the safety of shipping and sea lines of communications (SLOC) crucially important, linking maritime security closely to energy security.”⁴⁴

3. ENERGY CARRYING VESSELS

The term ‘energy carrying vessels’ refers to ships which are used to transport energy sources across the ocean and which vary depending on the energy source being carried and include oil tankers, bulk carriers and gas carriers. These vessels make up a large portion of the world’s fleet and in 2016 oil tankers accounted for 27.9% of the world’s fleet, gas carriers accounted for 3.0%, chemical tankers accounted for 2.5% and

⁴² United Nations General Assembly *op cit* note 8.

⁴³ African Union, *The African Charter on Maritime Security, Safety and Development in Africa*, 15 October 2016, available at https://au.int/sites/default/files/treaties/33128-treaty-0060_-_lome_charter_e.pdf, accessed on 9 January 2017.

⁴⁴ C Liss ‘The maritime dimension of energy security’ in B.K. Sovacool (ed) *The Routledge Handbook of Energy Security* (2010) 113.

bulk carriers accounted for 43.1%, of which a smaller percentage would be used for transporting coal.⁴⁵ Energy is transported on energy carrying vessels from production sites to refineries and finally to points of consumption and in 2016, 1930 million metric tons of the world's crude oil was transported by sea.⁴⁶ This amounts to nearly 90% of the world's oil, which is transported by sea on energy carrying vessels. In 2015 oil and gas shipping alone accounted for 29.3% of global maritime trade.⁴⁷ Main bulk commodities accounted for 29.4%⁴⁸ of global maritime trade of which coal accounted for about 27.7% of that.⁴⁹ This emphasises the importance of energy carrying vessels and the transport of energy by sea.

Energy carrying vessels are large and slow moving and as stated by Jenkins, “except for their size and inherent strength, these things are virtually unprotected.”⁵⁰ Similarly, Patrick states, “oil tankers are highly vulnerable to pirates, who could potentially disrupt global energy supplies.”⁵¹ Herbert-Burns states that that some inherent vulnerabilities include “limitations in speed, manoeuvrability, visual blind spots, radar sector-blanking astern and on the quarters for both S and X bands (particularly for tankers with large funnel casings), low freeboards (when laden), dangerous cargoes

⁴⁵ United Nations Conference on Trade and Development (UNCTAD) *Review of Maritime Transport 2016* (November 2016) at 6 table 1.3.

⁴⁶ Statista ‘Transport volume of crude oil in global seaborne trade from 2010 to 2016’ available at <https://www.statista.com/statistics/264013/transport-volume-of-crude-oil-in-seaborne-trade/>, accessed on 2 September 2017.

⁴⁷ UNCTAD *Review of Maritime Transport 2016 op cit* note 15.

⁴⁸ *Ibid.*

⁴⁹ Statista ‘Transport volume of coal in global seaborne trade from 2010 to 2015 (in million metric tons)’ available at <https://www.statista.com/statistics/264017/global-seaborne-trade-of-coal-since-1985/> accessed on 9 January 2017.

⁵⁰ B M Jenkins ‘A chronology of terrorist attacks and other criminal actions against maritime targets’ (S1983 P-6906) *The Rand Paper Series* (1983) at 4.

⁵¹ S Patrick *Weak Links: Fragile States, Global Threats and International Security* (2011) 160.

(flammable/toxic), and small crews.”⁵² Not all authors share the view that tankers are vulnerable and on the other hand, Luciani states, “... it is clear that crude oil tankers (and LNG tankers) are among the least vulnerable categories of ships transiting the strait.”⁵³ The researcher tends to agree with the views of Jenkins, Patrick and Herbert-Burns and believes that energy-carrying vessels are vulnerable and therefore susceptible to attack. This is supported by the fact that in 2016 nearly half of the reported attacks, 42.4%, were on energy carrying vessels.⁵⁴ This includes attacks on bunkering tankers, chemical tankers, product tankers, crude oil tankers, liquefied natural gases (LNG) tankers and liquefied petroleum gases (LPG) tankers but excludes coal carrying bulk carriers as it is unclear how many of the 52 bulk carriers that were attacked were carrying coal. In the first quarter of 2017 that trend continued and 42% of the attacks that occurred were on energy carrying vessels. The particulars of each vessel type will be discussed briefly below and will include the commodity carried, the various sizes, weight and special features.

3.1 Oil tankers

Tankers are designed specifically for transporting liquid cargos in large quantities⁵⁵ and more specifically, oil tankers are used to transport crude oil and refined products from points of extraction to refineries and end users. The term ‘oil tanker’ is defined in the International Convention for the Prevention of Pollution from Ships, 1973

⁵² R Herbert-Burns *op cit* at note 7 at 146.

⁵³ G Luciana ‘Restrictions of passage, accidents and oil transportation norms: impact on supply security’ *Working Document, Brussels: Centre for European Policy Studies* (2011).

⁵⁴ ICC IMB *Piracy and Armed Robbery Against Ships Report for the period 1 January – 31 December 2016* at 7.

⁵⁵ Rodrigo ‘Bulk carrier and oil tanker ship construction’ (2012) *The Write Pass Journal* available at <https://writepass.com/journal/2012/12/bulk-carrier-and-oil-tanker-ship-construction/>, accessed on 13 May 2017.

as modified by the Protocol of 1978 (MARPOL 73/78) as “a ship constructed or adapted primarily to carry oil in bulk in its cargo spaces and includes combination carriers and any “chemical tanker” as defined in Annex II of the present Convention when it is carrying a cargo or part cargo of oil in bulk.”⁵⁶ According to MARPOL 73/78, ‘oil’ means “petroleum in any form including crude oil, fuel oil, sludge, oil refuse and refined products (other than those petrochemicals which are subject to the provisions of Annex II of the present convention)...”⁵⁷ Oil tankers can broadly be categorised as crude oil tankers and product tankers.⁵⁸

Crude oil tankers are defined as “an oil tanker engaged in the trade of carrying crude oil”⁵⁹ and are predominantly used to transport unrefined crude oil from oil platforms to refineries.⁶⁰ Crude oil is defined as “any liquid hydrocarbon mixture occurring naturally in the earth whether or not treated to render it suitable for transportation and includes: (a) crude oil from which certain distillate fractions may have been removed; and (b) crude oil to which certain distillate fractions may have been added.”⁶¹ Oil tankers can be categorised according to the following sizes, however, these sizes may vary slightly and they are not strictly applicable to oil tankers only:

- i. Panamax tanker ranging from 50 000 to 75 000 DWT;⁶²

⁵⁶ The International Convention for the Prevention of Pollution from Ships, 1973 as modified by the Protocol of 1978 (MARPOL 73/78) Annex I at 67.

⁵⁷ Ibid.

⁵⁸ Ibid.

⁵⁹ Ibid 69.

⁶⁰ Maritime Connector ‘Oil tankers’ available at <http://maritime-connector.com/oil-tanker/>, accessed on 3 September 2017.

⁶¹ MARPOL 73/78 Annex I *op cit* note 26 at 69.

⁶² DWT (dead-weight tonne) refers to a measure (normally in metric tons) of a ship’s carrying capacity, including bunker oil, fresh water, crew and provisions.

- ii. Aframax (Average Freight Rate Assessment) tanker ranging from 80 000 to 120 000 DWT;
- iii. Suezmax tanker ranging from 120 000 to 200 000 DWT;
- iv. Very Large Crude Carrier (VLCC) ranging from 200 000 to 320 000 DWT; and
- v. Ultra Large Crude Carrier (ULCC) ranging from 320 000 to 550 000 DWT.⁶³

Usually the route travelled and the quantity to be carried will determine the size of the vessel that will be used. Due to the large scale of production at oilrigs, crude oil tankers are required to carry large amounts of crude oil and are usually VLCC's and ULCC's, also referred to as supertankers. ULCC's have diminished in popularity due to the fact that very few ports, canals and passages can accommodate their large size and at present only two ULCC's are still in operation.⁶⁴ Nevertheless, crude oil carriers are still among the largest ships at sea and are known as "the giants of the sea".⁶⁵

Product tankers are defined as "an oil tanker engaged in the trade of carrying oil other than crude oil"⁶⁶ and are used to transport refined petroleum products⁶⁷ from refineries to end users. Product tankers are usually smaller than crude oil tankers but are more complex as they are required to transport various different petroleum products of

⁶³ China Classification Society (GD26-2013) *Survey Guidelines for Oil Tankers in Service* (2014) at 2.

⁶⁴ J Shaw 'The world's biggest ships' (2016) 34(11) *Pacific Maritime Magazine* available at <http://www.pacmar.com/story/2016/11/01/features/the-worlds-biggest-ships/466.html>, accessed on 3 September 2017.

⁶⁵ T Akaki *The Transportation of Oil by Sea* (2011) 89.

⁶⁶ MARPOL 73/78 Annex I *op cit* note 26 at 69.

⁶⁷ According to the US EIA Petroleum products "are obtained from the processing of crude oil (including lease condensate), natural gas, and other hydrocarbon compounds. Petroleum products include unfinished oils, liquefied petroleum gases, pentanes plus, aviation gasoline, motor gasoline, naphtha-type jet fuel, kerosene-type jet fuel, kerosene, distillate fuel oil, residual fuel oil, petrochemical feedstock's, special naphtha's, lubricants, waxes, petroleum coke, asphalt, road oil, still gas, and miscellaneous products." See EIA *Petroleum and other Liquids* available at https://www.eia.gov/dnav/pet/TblDefs/pet_move_ptb_tbldef2.asp, accessed on 3 September 2017.

different grades, nature and consistency.⁶⁸ Petroleum tankers can be categorised according to the following sizes:

- i. GP (General Purpose) ranging from 10 000 to 25 000 DWT;
- ii. MR (Medium Range) ranging from 25 000 to 45 000 DWT;
- iii. LR1 (Long Range 1) ranging from 45 000 to 80 000 DWT; and
- iv. LR2 (Long Range 2) ranging from 80 000 to 160 000 DWT.⁶⁹

The LR1 and LR2 product tanker size overlaps with the Panamax, Aframax, and Suezmax crude oil carriers and the main difference between them is the coating used on the tanks.⁷⁰ Further, the MR, LR1, Aframax and LR2 sizes can generally be used for both crude oil and refined products provided the vessel meets the necessary requirements for the carriage of both products as required by MARPOL Annex 1, which sets out various structural and other requirements that these vessels must comply with.⁷¹

Tankers can travel at speeds between 10 – 18 knots, but usually average a speed of about 12 knots, depending on the size of the vessel, whether the vessel is fully or partly laden, the age of the vessel, the weather and ocean current.⁷² The number of crew on board a tanker will depend on various factors⁷³ and can range from approximately 8 to

⁶⁸ R Herbert-Burns *op cit* at note 7 at 145.

⁶⁹ Fearnley Consultants AS *The Product Tanker Segment* available at http://www.torm.com/uploads/media_items/fearnleys-industry-section.original.pdf, accessed on 3 September 2017.

⁷⁰ *Ibid.*

⁷¹ China Classification Society *op cit* note 33 at 2.

⁷² Shippedia ‘Tanker’ available at <http://www.shippedia.com/ships/ship-types/tanker/>, accessed on 13 May 2017.

⁷³ According to IMO Resolution A.1047 (27) on Principles of minimum safe manning the following factors should be taken into account: (1) size of the ship; (2) number, size and type of main propulsion units and auxiliaries; (3) level of ship automation; (4) construction and equipment of the ship; (5) method of maintenance used; (6) cargo to be carried; (7) frequency of port calls, length and nature of voyages to be undertaken; (8) trading area(s), water and operations in which the ship is involved; (9) extent to which

25 crewmembers.⁷⁴ The speed, structure and small number of crew all contribute to the vulnerability of tankers and other energy carrying vessels discussed below and will be discussed in more detail under section 5 on ship vulnerability.

3.2 Bulk carriers

Bulk carriers, often called the “workhorses of the international fleet”,⁷⁵ are used to transport large quantities of dry bulk cargo. A *bulk carrier* is defined in SOLAS as “a ship which is constructed generally with single deck, top-side tanks and hopper side tanks in cargo spaces, and is intended primarily to carry dry cargo in bulk, and includes such types as ore carriers and combination carriers.”⁷⁶ However, this definition was revised by MSC.170 (79) and excludes the structure type requirement.⁷⁷ The five main dry bulk cargoes are iron ore, coal, grain, bauxite and alumina and phosphate rock.⁷⁸ This dissertation is only concerned with bulk carriers used for the purpose of transporting coal. Bulk carriers can be categorized according to the following sizes, however, the below sizes may vary slightly and there are further sub-classes:

- i. Mini Bulk carriers used for short distance voyages and coastal trade and ranging from 3000 to 10 000 DWT;

training activities are conducted on board; (10) degree of shore side support provided to the ship by the company; (11) applicable work hour limits and/or rest requirements; and (12) the provisions of the approved Ship’s Security Plan.

⁷⁴ N. Winchester ... et al ‘An analysis of crewing levels: findings from the SIRC Global Labour Market Survey’ (2006) *Cardiff University* at 12 available at <https://orca-mwe.cf.ac.uk/64731/1/Analysis%20of%20crewing%20levels.pdf>, accessed on 14 May 2017.

⁷⁵ IMO Maritime Knowledge Centre ‘International shipping facts and figures – information resources on trade, safety, security, environment’ (2012) available at <http://www.imo.org/en/KnowledgeCentre/ShipsAndShippingFactsAndFigures/TheRoleandImportanceofInternationalShipping/Documents/International%20Shipping%20-%20Facts%20and%20Figures.pdf>, accessed on 2 September 2017.

⁷⁶ SOLAS Regulation 1.6/IX.

⁷⁷ SOLAS Regulation 1.1/XII.

⁷⁸ UNCTAD *Review of Maritime Transport 2016 op cit* note 15 at 15.

- ii. Handies, consisting of Handysize and Handymax carriers, ranging from 10 000 to 55 000 DWT;
- iii. Panamax carriers ranging from 55 000 to 80 000 DWT;
- iv. Capesize carriers ranging from 80 000 to 200 000 DWT;
- v. Large Capesize carrier ranging from 200 000 to 300 000 DWT; and
- vi. Very Large Bulk Carrier (VLBC) ranging from 300 000 DWT upwards.⁷⁹

Bulk carriers sail at an average speed of 13 to 15 knots⁸⁰ depending on the same factors as mentioned above under oil tankers. Similarly, the size of the crew will depend on various factors⁸¹ and can range from 8 to 30 crewmembers.⁸²

3.3 Gas carriers

Gas carriers are used to transport various gases such as LNG, LPG, liquefied ethylene gas (LEG), Ammonia (NH₃), Chlorine (Cl₂) and chemical gases. A gas carrier is defined in the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code) as “a cargo ship constructed or adapted and used for the carriage in bulk of any liquefied gas or other products listed in the table of chapter 19.”⁸³ Gas carrier can be categorised into the following types:

- i. Pressurised LPG carriers;

⁷⁹ MAN Diesel & Turbo *Propulsion Trends in Bulk Carriers: Two-stroke Engines* (2014) 7 available at <http://marine.man.eu/docs/librariesprovider6/technical-papers/propulsion-trends-in-bulk-carriers.pdf?sfvrsn=16>, accessed on 14 May 2017.

⁸⁰ Shippedia *Bulker* available at <http://www.shippedia.com/ships/ship-types/bulker/>, accessed on 14 May 2017.

⁸¹ IMO Resolution A.1047 (27) considerations *op cit* note 43.

⁸² Maritime Connector *Categories* available at <http://maritime-connector.com/bulk-carrier/>, accessed on 14 May 2017.

⁸³ Maritime Safety Committee Amendments to the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code) Resolution MSC.370 (93).

- ii. Semi-pressurised LPG carriers;
- iii. Ethylene carriers;
- iv. Fully refrigerated LPG carriers; and
- v. LNG carriers.⁸⁴

The two main gas carriers are LNG carriers and LPG carriers and are among the most sophisticated and specialised vessels due to the fact that gas is not carried in its vapour form but in liquid form.⁸⁵ LPG gases require pressurisation or refrigeration, and in some cases a combination of the two, to be maintained in liquid form and LPG carriers are generally classified as follows:

- i. Fully pressurised with a cargo capacity of up to 2000 m³;
- ii. Semi-pressurised and semi-refrigerated with a cargo capacity of up to 5000 m³;
- iii. Semi-pressurised and fully refrigerated with a cargo capacity of up to 15 000 m³;
- iv. Fully refrigerated with a cargo capacity of 15 000m³ – 85 000m³, the three common sizes being 30 000m³, 52 000m³ and 80 000m³.⁸⁶

LNG gases are refrigerated at boiling temperature to maintain liquid form and are not pressurised much. LNG carriers are fully refrigerated and range from about 1000 m³

⁸⁴ UK P&I Club *The Carriage of Liquefied Gases* at 1 available at https://www.ukpandi.com/fileadmin/uploads/uk-pi/LP%20Documents/Carefully_to_Carry/Carriage%20of%20liquefied%20gases.pdf, accessed on 8 September 2017.

⁸⁵ Seamanship International Discussion Paper *Types of – Liquefied Gas Carriers* (2007) available at <http://img1.eeworldship.com/2012/0919/20120919044518692.pdf>, accessed on 14 May 2017.

⁸⁶ *Ibid.*

to 267 000 m³.⁸⁷ Gas carriers can travel at speeds of up to 21 knots but usually travel at an average speed of 12 knots.⁸⁸ The number of crew required by a gas carrier, likewise to above, will depend on various factors and the number of crew on board can range from 14 to 20 crew members.⁸⁹ Gas carriers are advanced with many automated and electronic mechanics and feature, and as a result require even less crew.

4. CHOKE POINTS

Fossil fuels occur naturally in certain areas across the globe and according to the EIA, approximately 100 countries manufacture crude oil.⁹⁰ Figure 2 below reflects world oil production and consumption, oil refinery capacities and throughput and world natural gas production and consumption. It can be seen that the highest consumers do not produce enough oil and that producers do not have sufficient refinery capacities and throughput and therefore oil and gas have to be transported across the entire globe. As stated by Rodrigue, “[t]he geography of the production and consumption is characterized by a strong spatial differentiation of supply and demand. Because of geographical and geological factors, oil is mainly produced far from where is consumed...”⁹¹ To cut

⁸⁷ The International Group of Liquefied Natural Gas Importers LNG Information Paper No. 3 *LNG Ships* (2009) 1 available at http://www.giignl.org/sites/default/files/PUBLIC_AREA/About_LNG/4_LNG_Basics/Ing_3_-_Ing_ships_7.3.09-aacomments-aug09.pdf, accessed on 2 September 2017.

⁸⁸ Ibid.

⁸⁹ M Corkhill ‘Tackling the human element in the LNG ship-shore interface’ *LNG World Shipping* 31 May 2016 available at http://www.lngworldshipping.com/news/view,tackling-the-human-element-in-the-lng-shipshore-interface_43133.htm, accessed on 8 September 2017.

⁹⁰ U.S. Energy Information Administration (EIA) Country Analysis Brief *Where Oil Comes From* (2017) available at https://www.eia.gov/energyexplained/index.cfm?page=oil_where#tab1, accessed on 19 May 2017.

⁹¹ J. Rodrigue ‘Straits, passages and chokepoints a maritime geostrategy of petroleum distribution’ (2004) *Les Cahiers de Géographie du Québec* 357 – 374 at 360.

distance and save time oil is transported by tankers via specific routes and sea-lanes.⁹² These routes lead ships through strategic passages known as straits or chokepoints. Chokepoints are defined as: “narrow channels along widely-used global sea routes, some so narrow that restrictions are placed on the size of the vessel that can navigate through them.”⁹³ The European Commission defined chokepoints as:

“... Narrow channels used for transit of large volumes of international sea trade including oil. The concerns related to chokepoints can be different: geopolitical in the case of transit through potentially unstable areas, environmental and in particular in relation to damage from an accident, economic if transit through a chokepoint requires long waiting times, security in connection to possible terrorist attack etc.

Chokepoints therefore represent critical bottlenecks in the energy transport network since they transit high volumes of crude and products and the impact of interruptions of transit through them would affect severely the global oil market.”⁹⁴

There are seven major choke points around the globe, some of which pose a danger to energy carrying vessels. These seven major chokepoints and other high-risk zones around the globe will be discussed briefly below.

⁹² Y Guzansky ... et al ‘Power, pirates and petroleum: maritime choke points in the Middle East’ (2011) 14(4) *Strategic Assessment* 85 – 98 at 85.

⁹³ U.S. EIA Country Analysis Brief *World Oil Transit Chokepoints* (July 2017) available at <http://www.eia.gov/beta/international/regions-topics.cfm?RegionTopicID=WOTC>, accessed on 14 January 2017.

⁹⁴ European Commission, Network Oil Infrastructures – An assessment of the existing and planned oil Infrastructures within and towards the EU, Commission Staff Working Document accompanying the Green Paper “Towards a secure, sustainable and competitive European energy” (COM (2008) 737), SEC (2008) 2869, Brussels, 13 November 2008.

World oil production		World oil consumption	
Western Asia	32	Asia–Pacific	34
North America	19	North America	23
Transition economies	15	Europe	13
Developing America	11	Western Asia	11
Africa	10	Developing America	9
Asia–Pacific	9	Transition economies	6
Europe	4	Africa	4
Oil refinery capacities		Oil refinery throughput	
Asia–Pacific	33	Asia–Pacific	34
North America	21	North America	22
Europe	15	Europe	16
Western Asia	10	Western Asia	10
Transition economies	9	Transition economies	8
Developing America	8	Developing America	7
Africa	4	Africa	3
World natural gas production		World natural gas consumption	
North America	26	North America	25
Transition economies	22	Asia–Pacific	20
Western Asia	17	Transition economies	16
Asia–Pacific	15	Western Asia	14
Europe	7	Europe	13
Developing America	7	Developing America	8
Africa	6	Africa	4

Figure 2: Major producers and consumers of oil and natural gas, 2015 (Source: UNCTAD)

4.1 The Straits of Hormuz

According to the Organization of the Petroleum Exporting Countries (OPEC) annual report, the Persian Gulf region holds 50% of the world’s oil reserves.⁹⁵ The only route available by sea from this region⁹⁶ to the rest of the world is through the Straits of

⁹⁵ Organization of Petroleum Exporting Countries (OPEC) *Annual Statistical Bulletin* (2015) 22 available at http://www.opec.org/opec_web/static_files_project/media/downloads/publications/ASB2015.pdf, accessed on 14 January 2017.

⁹⁶ There are alternate pipelines available to move oil from this region. For a detailed list of those alternate pipelines, see U.S. EIA Country Analysis Brief *The Strait of Hormuz is the World’s Most Important Oil*

Hormuz, which is situated between Iran and Oman and connects the Arabian Gulf to the Oman Gulf and the Arabian Sea.⁹⁷ Approximately 17 million barrels pass through this strait daily equating to about 90% of the oil produced in the Persian Gulf.⁹⁸ Also, a large quantity of natural gas passes through this strait, mainly from Qatar to the rest of the world. Due to the high volumes of oil and gas that pass through this strait, it has been labelled “the most important chokepoint” in the oil trade by the EIA.⁹⁹ The Strait of Hormuz spans 33.8 kilometres at its narrowest point,¹⁰⁰ however, both shipping lanes, to and from, only span 3.2 kilometres each. The main concern with regards to this strait is not piracy but closure due to tensions between Iran and Western Countries. Piracy in this strait is uncommon and only four attempted attacks have been reported in this region since 2000, two in the Straits of Hormuz and two in the Gulf of Oman. One of the four attacks was on a product tanker, the *Zhong Chi*.¹⁰¹

During 2009 - 2010 piracy off the coast of Somalia reached its peak and Somali pirates would venture further away from the Somali coastline, north towards the Straits of Hormuz. Pirates were reported travelling up to 26°N miles, which is just south of this strait.¹⁰² The ICC IMB annual report warned against attacks near to the Strait of Hormuz, reporting that mother ships and skiffs spotted “in the Gulf of Oman, Southern Red Sea and the Somali basin, with a number of attacks close to the Straits of Hormuz and the

Transit Chokepoint (2012) available at <http://www.eia.gov/todayinenergy/detail.php?id=4430>, accessed on 14 January 2017.

⁹⁷ Ibid.

⁹⁸ C Talmadge ‘Closing time: assessing the Iranian threat to the Strait of Hormuz’ (2008) 33(1) *International Security* 82 – 117 at 82.

⁹⁹ U.S. EIA Country Analysis Brief *World Oil Transit Chokepoints* *op cit* note 63.

¹⁰⁰ U.S. EIA Country Analysis Brief *The Strait of Hormuz is the World’s Most Important Oil Transit Chokepoint* *op cit* note 66.

¹⁰¹ See generally ICC IMB *Piracy and Armed Robbery Against Ships Report for the period 1 January – 31 December 2005, 2007, 2009 and 2012*.

¹⁰² Ibid 2012 at 22.

energy routes out of the Arabian Gulf.”¹⁰³ Increased security off the coast of Somalia has prevented pirates from wandering north and there have been no reported incidents in the Straits of Hormuz or its close surroundings since 2012. Although there have been no reported incidents for the past five years, a single incident could cause a collision and shut this strait down. A closure of this strait could cause the price of oil to drastically increase, which could increase by up to 50% within a few days.¹⁰⁴ Sea is the most cost-effective means of transport. Oil would have to be transported by pipeline alone and transportation costs would thus increase drastically. As stated by Sadad Ibrahim Al-Husseini, the former head of exploration and development at Saudi Aramco, “to close the Strait of Hormuz would be an act of war against the whole world...”¹⁰⁵

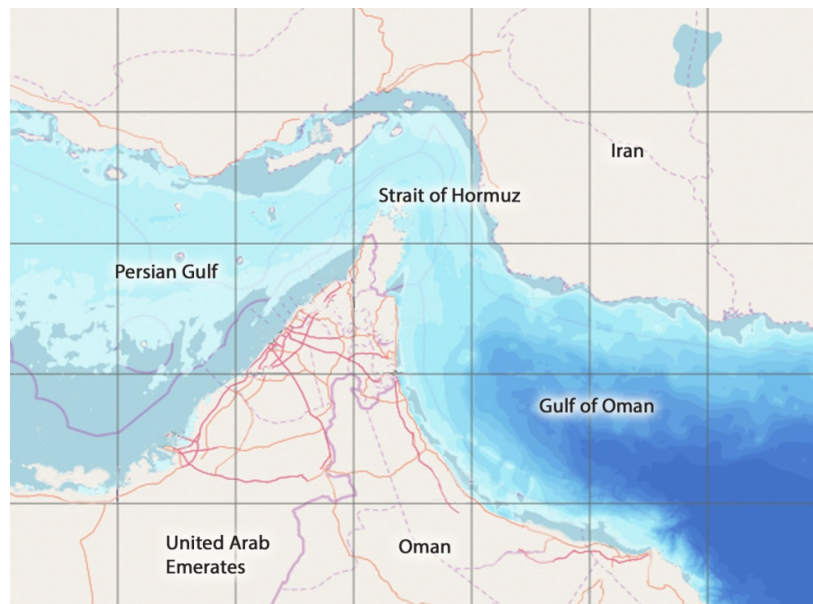


Figure 3: The Strait of Hormuz (Source: Openseamap)

¹⁰³ Ibid at 24.

¹⁰⁴ “Oil price would skyrocket if Iran closed the Strait of Hormuz” The New York Times available at <https://mobile.nytimes.com/2012/01/05/business/oil-price-would-skyrocket-if-iran-closed-the-strait.html?referer=https://www.google.co.za/>, accessed on 14 January 2017.

¹⁰⁵ Ibid.

4.2 The Strait of Malacca

The Strait of Malacca links the Indian Ocean to the South Chinese Sea and Pacific Ocean.¹⁰⁶ It is situated between Singapore, Malaysia and Indonesia and is only 2.7 kilometres wide at its narrowest point. This strait is the main passage leading from the Middle East to Asia and approximately 15.2 million barrels of oil pass through this strait daily. The Strait of Malacca is labelled as a “piracy and armed robbery prone area” by the ICC-IMB, however, it was noted that incidents in this region had decreased as a result of intensified patrols and security.¹⁰⁷ In 2015 there were five reported attacks in the strait, four of which involved product tankers.¹⁰⁸ In 2016 and in the first half of 2017 there were no reported incidents in the strait.¹⁰⁹ However, as stated by ReCAAP “there is no room for complacency.”¹¹⁰ The surrounding waters remain a major concern and ships entering and exiting the Malacca strait have to travel through these waters, which according to the ICC-IMB reports, has the highest number of reported incidents. In 2016 a total of 49 attacks occurred in the waters of Indonesia, 7 attacks occurred in the waters of Malaysia, 10 attacks occurred in the waters of the Philippines and 2 attacks occurred in the Singapore straits. 25% of those attacks were on energy carrying vessels.¹¹¹ In the first half of 2017 there were a total of 36 attacks in the above-mentioned areas of which 41.6% were on energy carrying vessels.¹¹²

¹⁰⁶ U.S. EIA Country Analysis Brief *Maritime Chokepoints Critical to Petroleum Markets* (March 2011) available at <http://www.eia.gov/todayinenergy/detail.php?id=330>, accessed on 8 September 2017.

¹⁰⁷ ICC IMB *Piracy and Armed Robbery Against Ships Report 2015* op cit note 2 at 18.

¹⁰⁸ Ibid at 31.

¹⁰⁹ ICC IMB *Report 1 January – 31 December 2016* op cit note 24 and ICC IMB *Piracy and Armed Robbery Against Ships Report for the period 1 January – 31 June 2017*.

¹¹⁰ The Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia (ReCAAP) *Monthly Piracy and Armed Robbery Against Ships in Asia Report for April 2017* at 1.

¹¹¹ ICC IMB *Report 1 January – 31 December 2016* op cit note 24 at 31 – 39 and 55.

¹¹² ICC IMB *Report 1 January 2017 – 30 June 2017* op cit note 79 at 29 – 34 and 40 – 41.

The common *modus operandi* used by pirates in this region is similar to that of the MT *Lapin* discussed above. Pirates board their target in the cover of night, restrain the crew and siphon the fuel cargo from the hijacked vessel to another pirate ship, which is brought along side. The pirates destroy communication and navigation equipment before escaping.¹¹³ The ReCAAP Special Report on Incidents of Siphoning of Fuel/Oil at Sea in Asia stated:

“Illegal siphoning of fuel/oil has become a lucrative business owing to the market price and taxes imposed on fuel/oil. With continued demand for fuel/oil in underground markets, siphoning incidents are here to stay.”¹¹⁴

Other incidents in this region involve theft of the ships and crew’s properties. The high number of incidents affecting energy carrying vessels provides evidence that they make easier targets and are vulnerable to attack.

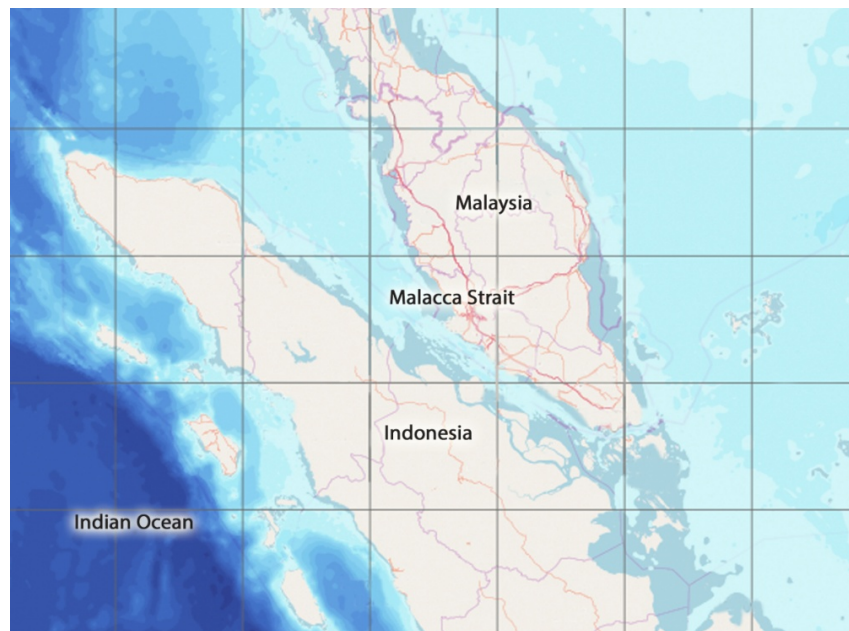


Figure 4: The Malacca Strait (Source: Openseamap)

¹¹³ ReCAAP Annual Report 2015 at 20.

¹¹⁴ ReCAAP Special Report on Incidents of Siphoning of Fuel/Oil at Sea in Asia (Part II) 2015 at 1.

4.3 The Strait of Bab el-Mandeb

Situated between Djibouti and Yemen at the Horn of Africa, the Strait of Bab el-Mandeb links the Mediterranean Sea, through the Suez Canal and the Red Sea, to the Gulf of Aden and the Indian Ocean.¹¹⁵ This is an important passage between the Persian Gulf and the Suez Canal and sees approximately 3.8 million barrels of oil transported through it every day.¹¹⁶ The Bab el-Mandeb Strait, the Red Sea and the Gulf of Aden are within close reach of Somalia pirates and are listed as high-risk zones by the ICC-IMB.¹¹⁷ These waters made headlines for the unprecedented number of attacks that occurred from 2008 to 2011.¹¹⁸ As a result, security was increased in this area and after 2012 there was a drastic decline in the number of reported incidents in this region. There were no reported incidents during 2015¹¹⁹ and in 2016 there were only three attempted attacks, one off the coast of Somalia, one by off the coast of Yemen and one in the Gulf of Aden, two of which were on energy carrying vessels.¹²⁰

On the 15th December 2016 the NATO Operation Shield, one of the anti-piracy projects situated off the coastline of Somalia, was terminated. Spokesperson Oana Lungescu stated:

¹¹⁵ U.S. EIA Country Analysis Brief *World Oil Transit Chokepoints* op cit note 63.

¹¹⁶ G Lubin 'The 7 biggest oil chokepoints in the world – seen like never before' *Business Insider* 3 November 2016 available at <http://www.businessinsider.com/biggest-oil-chokepoints-2016-11>, accessed on 8 September 2017.

¹¹⁷ ICC IMB *Report 1 January – 31 December 2016* op cit note 24 at 18.

¹¹⁸ ICC IMB *Piracy and Armed Robbery Against Ships Report for the period 1 January – 31 December 2011* at 57 & 60.

¹¹⁹ ICC IMB *Report 1 January – 31 December 2015* op cit note 2 at 5.

¹²⁰ ICC-IMB *Report 1 January – 31 December 2016* op cit note 24 at 7.

“Operation Ocean Shield has been a great success – making an essential contribution to combating piracy in the seas off Somalia and therefore keeping one of the world’s most important waterways safe and secure.”¹²¹

Only three months after its terminations, the first attack occurred in that region since 2012 on the MT *Aris 13*, a bunkering tanker.¹²² Since then there has been 6 other reported incidents, three off the coast of Somalia, one off the coast of Yemen, one in the Gulf of Aden and one in the Red Sea.¹²³ The increase of incidents since the terminations of NATO’s Operation Shield shows that Somali pirates are still present in that region and they were only deterred by the strong security presence. Once that presence is gone or decreased, piracy in this region may multiply once again. The *modus operandi* of Somali pirates does not involve stealing fuel cargo, however, energy carrying vessels may be preferred as they are valuable and vulnerable.

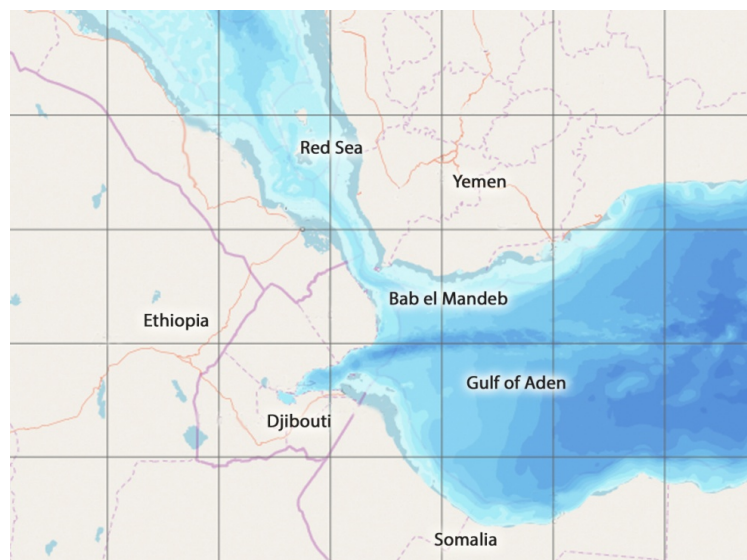


Figure 5: The Strait of Bab el-Mandeb (Source: OpenseaMap)

¹²¹ North Atlantic Treaty Organization (NATO) Newsroom *NATO Concludes Successful Counter Piracy Mission* (2016) available at http://www.nato.int/cps/en/natohq/news_139420.htm, accessed on 9 September 2017.

¹²² ICC-IMB *Report 1 January 2017 – 30 June 2017 op cit* note 79 at 37 – 38.

¹²³ *Ibid* at 6.

4.4 The Suez Canal

The Suez Canal runs through Egypt and is situated on the North West side of the Red Sea opposite to the strait of Bab el-Mandeb, which is South East of the Red Sea. This strait joins the Mediterranean Sea to the Gulf of Aden and the Indian Ocean. This is a major rout from the Persian Gulf, which leads through the Bab el-Mandeb Strait and the Suez Canal to America and Europe. In 2015 the canal was extended from 60km to 95km to allow an expected 97 ships to pass through the canal each day.¹²⁴ An alternate route to the Suez Canal is around the Cape of Good Hope and is somewhat 4345.2 kilometres longer.¹²⁵ In 2013 approximately 3.2 million barrels of oil were transited through the Suez Canal each day, equating to about 20% of all cargoes passing through the canal and about 5.7% of the world's oil.¹²⁶ From 2000 to 2017 there have only been seven reported incidents in the Suez Canal and only two were on energy carrying vessels.¹²⁷ Although the number of incidents is low in this strait, it only takes one incident to result in a collision.

¹²⁴ UNCTAD *Review of Maritime Transport 2016* op cit note 15 at 20.

¹²⁵ U.S. EIA Country Analysis Brief *World Oil Transit Chokepoints* op cit note 63.

¹²⁶ Ibid.

¹²⁷ See generally ICC IMB *Piracy and Armed Robbery Against Ships Report for the period 1 January – 31 December 2000 – 2017*.

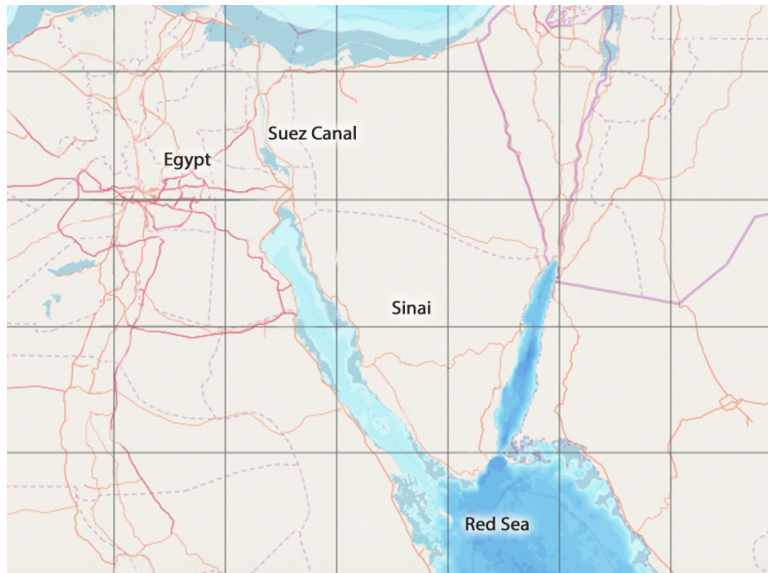


Figure 6: The Suez Canal (Source: Openseamaps)

4.5 The Panama Canal

The Panama Canal runs through the Isthmus of Panama, a country situated in Central America. It joins the Pacific Ocean to the Caribbean Sea and Atlantic Ocean.¹²⁸ The Panama Canal is a man-made structure designed to avoid the lengthy trip around the Southern tip of South America and was originally only 33.5 metres wide. The largest ship that could fit through this canal was a Panamax-size vessel.¹²⁹ Due to the size limitation, approximately only 0.8 million barrels pass through the Panama Canal every day and according to the EIA this route is not significant in global oil and petroleum shipping due to the fact that most tankers are too large to fit through this canal.¹³⁰ Panama undertook an expansion project of the canal to enable larger ships to pass through it. The canal reopened on the 26th June 2016 and is now able to accommodate 90% of the world's gas

¹²⁸ U.S. EIA Country Analysis Brief *World Oil Transit Chokepoints* op cit note 63.

¹²⁹ Vessel sizes are set out in paragraph 2.3.1 above.

¹³⁰ U.S. EIA Country Analysis Brief *World Oil Transit Chokepoints* op cit note 63.

carriers,¹³¹ however, the expansions are unlikely to radically affect the flow of oil and petroleum.¹³² In 2003 there were only four reported attacks in the Caribbean Ocean, which ships wishing to pass through the Panama Canal would have to traverse. There have been no reported incidents since then and it appears that energy vessels are not targeted in this region.

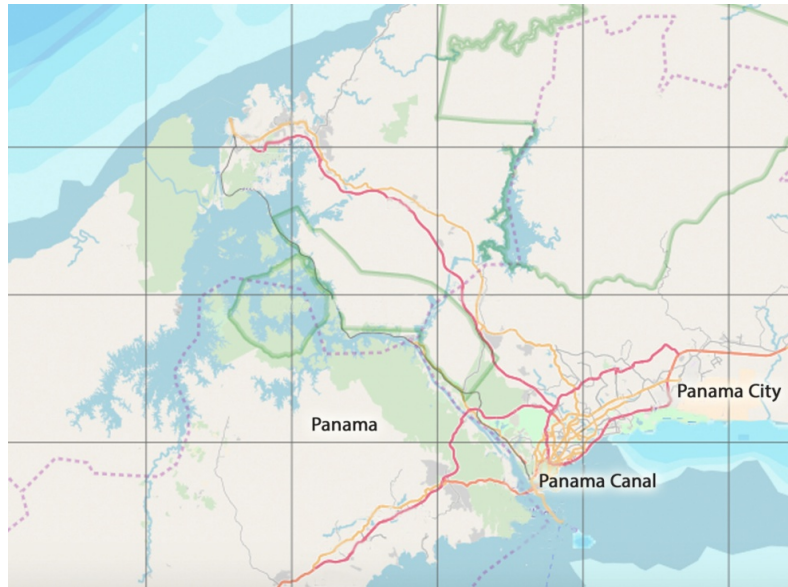


Figure 7: The Panama Canal (Source: Openseamaps)

4.6 The Danish Straits

The Danish Straits are situated between Sweden, Denmark and Germany and join the Baltic Sea to the North Sea.¹³³ This route is important for oil being transported from Russia to European countries and approximately 3.3 million barrels pass through this

¹³¹ U.S. EIA Country Analysis Brief *Expanded Panama Canal Reduces Travel Time for Shipments of U.S LNG to Asian Markets* (30 June 2016) available at <https://www.eia.gov/todayinenergy/detail.php?id=26892>, accessed on 14 January 2017.

¹³² U.S. EIA Country Analysis Brief *Panama Canal Expansion Unlikely to Significantly Change Crude Oil, Petroleum Product Flow* (23 June 2016) available at <https://www.eia.gov/todayinenergy/detail.php?id=26792>, accessed on 14 January 2017.

¹³³ U.S. EIA Country Analysis Brief *World Oil Transit Chokepoints* *op cit* note 63.

strait every day.¹³⁴ Piracy has not threatened energy carrying vessels in this region and a study of the ICC-IMB reports from 2000 to 2017 reveals that there are no reported incidents of piracy in the Danish Straits.¹³⁵

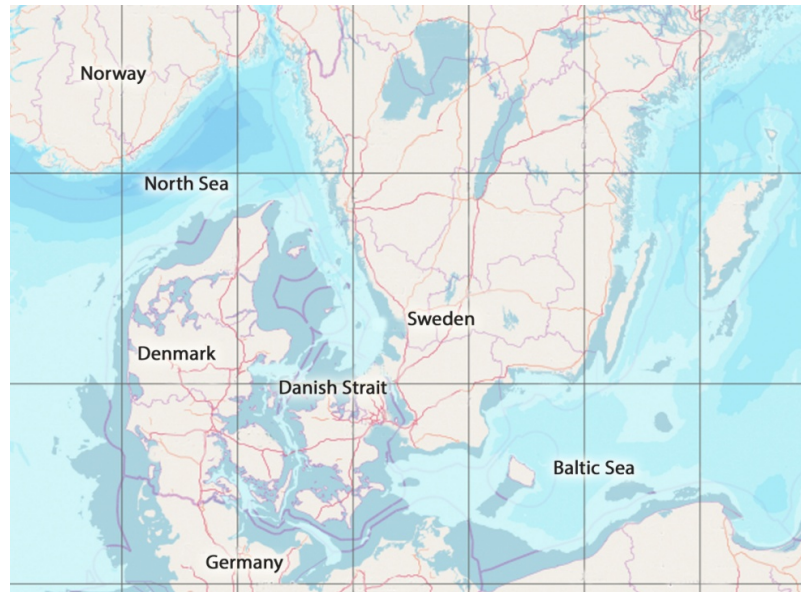


Figure 8: The Danish Straits (Source: OpenseaMap)

4.7 The Turkish Straits

The Turkish Straits consists of the Istanbul Strait (The Bosphorus), The Canakkale Strait (The Dardanelles) and the Sea of Marmara¹³⁶ and connects the Black Sea with the Mediterranean Sea. The Turkish Straits are situated in Turkey's territorial waters between Asia and Europe, however, although the straits are within Turkey's territorial waters, the Montreux Convention 1936 allows for free passage through the straits. This is a key route

¹³⁴ U.S. EIA Country Analysis Brief *World Oil Transit Chokepoints Critical to Global Energy Security* (1 December 2014) available at <https://www.eia.gov/todayinenergy/detail.php?id=18991>, accessed on 14 January 2017.

¹³⁵ ICC IMB *Reports for 2000 – 2017* *op cit* note 97.

¹³⁶ Oil Companies International Marine Forum (OCIMF) Briefing paper for OCIMF Member companies *Guidelines for Transiting the Turkish Straits* (2007) available at <https://www.ocimf.org/media/8922/turkist%20Straits.pdf>, accessed on 9 September 2017.

for oil moved by sea from Russia and other Eurasian countries with Approximately 2.9 million barrels of oil being transported through the straits each day. The layout and geography of these Straits has caused them to be labelled “among the world’s most difficult waterways to navigate because of their sinuous geography.”¹³⁷ The Turkish Straits are reasonably safe from piracy and the main concern with regards to these straits pertains to terrorism and collision.

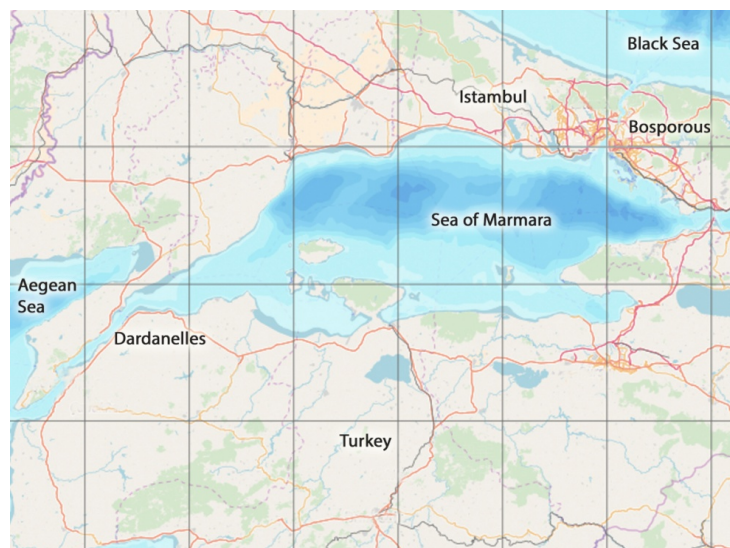


Figure 9: The Turkish Straits (Source: OpenseaMap)

4.8 Other high-risk zones

From the above overview, it is apparent that piracy is not as prevalent in chokepoints as it was in the past. This is due to the high concentration of navy forces in those areas as well as other security tactics. Pirates have therefore moved away from these areas to waters with fewer armed forces. A study of the ICC-IMB 2016 annual report reveals two areas of major concern, the Gulf of Guinea (GoG) and the coastal

¹³⁷ U.S. EIA Country Analysis Brief *World Oil Transit Chokepoints* op cit note 63.

waters of India. The GoG extends over approximately 6000 kilometres and consists of several different states, which includes the coastlines of Senegal, Sierra Leone, Liberia, Cote d'Ivoire, Nigeria, Ghana, Togo, Benin, Cameroon, Equatorial Guinea, Gabon, the island state of Sao Tome and Principe, Central African Republic, The Republic of the Congo, the Democratic Republic of Congo, and Angola. In the GoG there were a total of 53 reported incidents. A total of 51% involved energy carrying vessels.¹³⁸ Nigeria has a total of 36 reported incidents alone and is highest worldwide.¹³⁹ A total of 61% of those incidents were on energy carrying vessels.¹⁴⁰ In the first half of 2017 there were a total of 16 reported incidents in the GoG of which 37.5% involved energy carrying vessels.¹⁴¹ The three models of piracy in this region are theft of oil cargo, kidnapping for ransom and common theft of onboard property. Theft of oil cargo has decreased in the past three years and in 2016 there was only one reported incident that involved the theft of the fuel cargo.¹⁴² Yet, energy carrying vessels remain the most targeted vessel type. The second area of concern is the water off the coast of India, which had a total of 14 incidents of which 57% were on energy carrying vessels. In this region there were no reported incidents that involved the theft of fuel cargo.¹⁴³ A study of the 2016 ICC-IMB report reveals that the predominant *modus operandi* of pirates in the above two regions to board tankers and steal the ships stores and other valuables. This supports the contention that these vessels are not only targeted for their cargo but also because they are vulnerable

¹³⁸ ICC-IMB *Report 1 January – 31 December 2016 op cit* note 24 at 47 – 54 and 57 – 60.

¹³⁹ *Ibid.*

¹⁴⁰ *Ibid.*

¹⁴¹ ICC-IMB *Report 1 January 2017 – 30 June 2017 op cit* note 79 at 38 – 41 and 43 – 44.

¹⁴² Four armed pirates boarded the *MV Harley*, a product tanker, and took the duty pump man hostage. They submerged two hoses into the forward tank dome and stole the fuel cargo. See *ibid* at 52.

¹⁴³ *Supra* at 42 – 44.

and make easier targets. Their structure, size, speed, the number of crew and the routes travelled all contribute to their vulnerability and will be discussed below.

5. SHIP VULNERABILITIES

The energy transportation system has been labelled the “Achilles heel” of the oil trade due to the fact that these giants have several vulnerabilities and are mostly unprotected when at sea.¹⁴⁴ Security is both internal and external. Internal security refers to security measures implemented by ship owners whereas external security refers to navies and patrols. Providing sufficient external security at sea is an almost impossible task. The oceans cover a great deal of surface area, approximately 70% of the earth¹⁴⁵, and apart from insufficient means, it would be impractical to have every inch of the ocean protected. Security is located strategically in high-risk zones; however, security is “stretched too thin in some cases “to meet its own self-imposed security standards such as escorting ships carrying liquefied natural gas””.¹⁴⁶ Therefore, security, to the most part, is left in the hands of the ship owner who must act in accordance with rules and regulations in place to ensure the safety of the vessel. The rules and regulations that apply to energy carrying vessels are the same for all vessel types and therefore it fails to take into consideration their vulnerabilities. From the above information it is evident that the route travelled, the cargo carried and the structure of energy carrying vessels makes them vulnerable. The vulnerabilities of energy carrying vessels and will be discussed below.

¹⁴⁴ Institute for the Analysis of Global Security *Threats to Oil Transport* available at <http://www.iags.org/oiltransport.html>, accessed on 31 October 2016.

¹⁴⁵ M Williams ‘What percent of earth is water?’ *Universe Today* 1 December 2014 available at <https://www.universetoday.com/65588/what-percent-of-earth-is-water/>, accessed on 31 October 2016.

¹⁴⁶ H Josef Hebert ‘Oil, LNG tankers vulnerable’ *USA Today* 1 September 2008 available at http://usatoday30.usatoday.com/news/washington/2008-01-09-4173632017_x.htm, accessed on 31 October 2016.

Firstly, energy carrying vessels are often very large and slow moving and as set out above, these vessels generally travel at an average speed of about 12 knots when fully laden. Pirate skiffs on the other hand often travel at speeds over 30 knots and are able to catch up to their targets with relative ease.¹⁴⁷ Their size and speed also prevent them from being able to outmanoeuvre any attackers in small skiffs or speedboats, which are agile and easily manoeuvrable.¹⁴⁸ Secondly, the size of these vessels does not act as a deterrent to attackers as pirates have developed skills for boarding large vessels while moving. Due to the fact that these vessels are slow moving it makes boarding the vessel easier and when fully loaded they are low to the water. Pirates attack VLCC's with relative ease, for example, the MV *Sirius Star*.¹⁴⁹ The spokesperson for the U.S. Navy's Fifth Fleet stated about the attack of the MV *Sirius Star* that:

“The hijacking was shocking because it highlighted the vulnerability of even very large ships and pointed to widening ambitions and capabilities among ransom-hungry pirates who have carried out a surge of attacks this year off Somalia. To attack so large a vessel and so far south of Somalia presents a nearly impossible security problem for the anti-piracy naval task force.”¹⁵⁰

Thirdly, energy carrying vessels and their cargo are extremely valuable and offer a rewarding return. Pirates have a few options available to them; they can use the oil cargo for the furtherance of their own operations, they can sell it on the black market or procure a high ransom for the release of the very valuable tanker, crew and cargo. This makes energy carrying vessels a worthwhile target where the reward outweighs the risk. Lastly, energy carrying vessels have few crew on board and pirates can easily board a tanker

¹⁴⁷ P Bruno 'Tactics of Modern Sea Pirates' *ThoughtCo*. 1 March 2017 available at <https://www.thoughtco.com/tactics-of-modern-sea-pirates-2293170>, accessed on 13 May 2017.

¹⁴⁸ A Misra 'Contours of India's energy security: harmonizing domestic and external options' in M. Wesley (ed) *Energy Security in Asia* (2007) 68.

¹⁴⁹ Discussed in Chapter 1.

¹⁵⁰ 'Sirius Star becomes largest ship ever captured' *History* 15 November 2008 available at <http://www.historychannel.com.au/articles/sirius-star-becomes-largest-ship-ever-captured/>, accessed on 31 October 2016.

unnoticed. This also makes overpowering the crew a lot easier. Lastly, energy carrying vessels are often forced to transit chokepoints and high-risk areas. Chokepoints limit manoeuvrability for big ships and are busy, which allows pirates to blend in.

6. THE IMPACT AND CONSEQUENCES OF ATTACKS ON ENERGY CARRYING VESSELS

Piracy impacts negatively on various spheres and according to Bento it “impacts on global shipping, world trade, and the tourist industry.”¹⁵¹ Due to the vast ramifications caused by piracy and its cross-border nature, it was labelled as a “crime against all humanity”, also referred to as *hostis humani generis*. The impact caused by piracy on energy carrying vessels is similar to the impact caused by piracy on other vessels, apart from the fact that the impact may be amplified due to the nature of energy sources. With reference to economic impact, the nature refers to the high value and high demand of energy sources, its inherent price volatility as well as the key role energy plays in all societies. With reference to the impact on the environment and the safety of crew, the nature refers to the physical nature of energy sources. Broadly, piracy impacts three spheres, namely: (i) the economy; (ii) the environment; and (iii) safety of life at sea. Each will be discussed briefly below.

¹⁵¹ L Bento ‘Toward an international law of piracy sui generis: How the dual nature of maritime piracy law enables piracy to flourish’ (2011) 29 *Berkeley Journal of International Law* 399.

6.1 Impact of piracy on the economy

The exact economic impact of attacks on energy carrying vessels is almost impossible to quantify due to the numerous variables.¹⁵² Furthermore, studies by organizations¹⁵³ on economic loss caused by piracy are not limited to pirate attacks on energy carrying vessels but focus on piracy as a whole. Studies on economic loss range from one billion to twenty-five billion dollars.¹⁵⁴ Further, many incidents go unreported which consequently affects the accuracy of studies.¹⁵⁵ The One Earth Future Foundation categorizes the impact on the economy into two sub-categories, namely, direct economic cost of piracy and secondary (macroeconomic) costs.¹⁵⁶ Direct economic costs include the cost of ransom, insurance, re-routing, deterrent security equipment, naval forces, prosecution and piracy-deterrence organisations. Secondary costs include costs to regional trade, food price inflation, and in this case, oil and fuel price inflation and the cost of reduced foreign revenue.

¹⁵² Captain P.S. Anabraba states: “The global cost of piracy ... remains uncertain, with existing assessments providing divergent estimates and conclusions. Existing studies tend to primarily focus on calculating first order costs such as the cost of ransoms, security deterrence equipment and naval forces deployment. The secondary costs of piracy, such as the effects on foreign investment in the affected and neighbouring regions, or on commodity prices appear so far to have benefited from much less attention. Existing studies differ in terms of their methodology and approach and, therefore, are neither directly comparable, nor provide a definite authoritative assessment of piracy related costs.” See Captain P.S. Anabraba ‘Multinational counter-piracy operations’ *African Defence* 12 July 2016 available at <http://www.african-defense.com/interesting-post/multinational-counter-piracy-operations/>, accessed on 8 September 2017.

¹⁵³ Studies have been done by, among many others, UNCTAD, the International Growth Centre, The One Earth Future Foundation, Oceans Beyond Piracy, the Royal Economic Society and academics such as L.M. Johnson, B.H. Dubner, R. Raturi and L.R. van der Meijden.

¹⁵⁴ L Bento *op cit* note 121.

¹⁵⁵ A Bowden ‘The economic costs of maritime piracy’ (2010) *One Earth Future Foundation Working Paper* at 7 – 8.

¹⁵⁶ *Ibid* at 6.

6.1.1 Direct economic costs

6.1.1.1 Ransom

Somali pirates often take control of vessels and kidnap crew to procure ransom money from Ship owners and charterers for the release of the vessel and crew. Ship owners and charterer can pay millions in ransom and the highest recorded ransom to date is US\$13.5million, which was paid for the release of the *Irene SL*, a VLCC carrying approximately two million barrels of oil.¹⁵⁷ The One Earth Future Foundation notes the drastic increase in ransoms, which averaged approximately \$150 000 in 2005, approximately \$3.4 million in 2009 and a predicted average of approximately \$5.4 million in 2010.¹⁵⁸ It is also noted that the cost of ransom does not include the cost of communication and negotiations, the cost of delivering the ransom money, the cost of repair of any damage caused by the pirates, the cost of medical help for physical or mental trauma and the cost of loss of income due to the vessel being out of operation.¹⁵⁹

6.1.1.2 Insurance

As a result of increased risk, insurance companies have increased their shipping rates and premiums. General insurance covers loss or damage due to certain risks. Risks that are not covered by the general insurance will be covered by a sub-category, which incurs an additional charge. ‘War risk’ insurance covers ships transiting through war risk areas. Certain areas affected by piracy have been categorised as war risk areas, some of which include the Gulf of Aden, the Malacca Straits and the waters off the Coast of

¹⁵⁷ Guinness Book of Records available at <http://www.guinnessworldrecords.com/world-records/highest-hijack-ransom>, accessed on 16 June 2017.

¹⁵⁸ Supra at 9.

¹⁵⁹ Ibid at 9 – 10.

Nigeria.¹⁶⁰ The other main sub-categories are kidnap and ransom insurance, cargo insurance and hull insurance. All of which increased drastically with the up rise in piracy in previous years.¹⁶¹ Due to increased security and the decrease in piracy in recent years, insurance has decreased since 2011.¹⁶²

6.1.1.3 Re-routing

To avoid passing through high risk zones vessels can re-route. However, re-routing means avoiding strategic chokepoints that make the voyage shorter. Re-routing around the Cape of Good Hope, avoiding the Gulf of Aden, the Strait of Hormuz, the Red Sea and the Suez Canal, adds approximately 4346 kilometres to the voyage, adding between fifteen to twenty days to the voyage.¹⁶³ Re-routing increases costs and as a result increases the price of oil and impacts of the economy. Re-routing costs the shipping industry an estimated \$2.3 to \$3 billion per year.¹⁶⁴

6.1.1.4 Deterrent equipment and security

Ship owners and charterers may opt to hire private security, install security equipment or modify their ships with certain pirate deterrents such as razor wire, electric fencing or water sprayers. The One Earth Future Foundation estimates that the shipping

¹⁶⁰ War Risk Insurance 2016 *The Swedish Club* 17 December 2015 available at http://www.swedishclub.com/media_upload/files/Circulars/408-2015%20Marine-war_2015Dec.pdf, accessed on 16 June 2017.

¹⁶¹ A Bowden *op cit* note 125 at 10 – 11.

¹⁶² J Bellish ‘The economic cost of Somali piracy, 2012’ (2012) *Oceans Beyond Piracy* Working Paper at 34.

¹⁶³ ‘Calculating the cost of piracy’ *Cleaner Seas* 18 June 2014 available at <http://www.cleanerseas.com/calculating-the-cost-of-piracy/>, accessed on 16 June 2017.

¹⁶⁴ A Bowden *op cit* note 125 at 14.

industry spends anywhere between \$363 million to \$2.5 billion on vessel hardening and security.¹⁶⁵

6.1.1.5 Naval forces

Numerous states around the globe have contributed to the fight against piracy by providing funds or Naval Forces. The One Earth Future Foundation estimates that approximately \$228.3 million was spent on naval forces in the Horn of Africa alone in 2016.¹⁶⁶ This is significantly less than the estimated approximate of \$2 billion for 2010.¹⁶⁷

6.1.1.6 Prosecution

Piracy involves many different states such as the state of victims, the state of the crew, the state of the accused, the state whose waters the crime may have occurred in, the state of the ship owner, the state where the ship is registered, the state of the exporter, the state of the importer and the state of the insurance company. Due to the various states affected, in terms of UNCLOS any state may arrest and prosecute pirates. This principle is known as universal jurisdiction. Article 105 of UNCLOS provides that:

“On the high seas, or in any other place outside the jurisdiction of any State, *every State may* seize a pirate ship or aircraft, or a ship or aircraft taken by piracy and under the control of pirates and arrest the persons and seize the property on board. The courts of the State which carried out the seizure may decide upon the penalties to be imposed and may also determine the action to be taken with regard to the ships, aircraft or property, subject to the rights of third parties acting in good faith.” [Emphasis added]

Somalia, for example, lacks a functional government, the necessary resources and the infrastructure to prosecute Somali pirates. As a result, it has become the responsibility of

¹⁶⁵ Ibid at 15.

¹⁶⁶ Ocean Beyond Piracy Org. *Report 2016* available at <http://oceansbeyondpiracy.org/reports/sop/summary>, accessed on 16 June 2017.

¹⁶⁷ A Bowden *op cit* note 125 at 16.

neighbouring states to take the necessary steps to capture and prosecute pirates. The international community provides financial aid to other regional countries to encourage participation and assist alleviate undue financial costs on states prosecuting piracy crimes.¹⁶⁸ The estimated average cost of prosecuting a piracy case is approximately \$246 000 in Europe.¹⁶⁹ It is estimated that prosecutions costs were approximately \$31.3 million in 2010.¹⁷⁰

6.1.1.7 Piracy deterrence organisations

As a result of piracy, many anti-piracy organisations have been established over the years. Some of which include the UN Contact Group on Piracy off the Coast of Somali, IMO Djibouti Code, ReCAAP and United Nations Office of Drugs and Crime (UNODC). In 2010 the total budget of the aforementioned organisations amounted to approximately \$24.5 million and in 2012 it amounted to approximately \$24.08 million.¹⁷¹

6.1.2 Secondary Costs

6.1.2.1 Regional trade

Neighbouring countries to piracy hotspots may be affected by piracy in that traders may be unwilling to enter their risky waters to trade and traders that are willing to take the risk will usually have to pay increased insurance and implement alternate security measures which increases the price for consumers. Several countries have reported a decrease in their fishing sector, among other sectors. Oil trades have been

¹⁶⁸ Ibid at 17.

¹⁶⁹ F Lorenz and L Eshback 'Transfer of suspected and convicted pirates' in M.P. Scharf ... et al (ed) *Prosecuting Maritime Piracy: Domestic Solutions to International Crimes* (2015)

¹⁷⁰ A Bowden *op cit* note 125 at 19.

¹⁷¹ Ibid.

affected and according to the One Earth Future Foundation oil production in Nigeria has decreased by approximately 20% since 2006.¹⁷²

6.1.2.2 Inflation

Inflation refers to the increase of price in products. Pirate attacks disrupt supply and demand and can cause a rapid increase in prices. In June of 2011 the price per barrel of oil reached a record high of \$240 in Somalia due to the increased number of attacks.¹⁷³

6.1.2.3 Reduced foreign revenue

Foreign revenue may decrease as a result of investors withdrawing from regions affected by piracy as piracy will negatively affect their investments. Piracy may also cause ship owners to avoid certain ports and canals. Certain canals, like the Suez Canal and the Panama Canal, charge a fee to transit. Owners re-routing their vessels will avoid canals and consequently canal authorities will suffer from a decrease in income. According to the One Earth Future Foundation, Egypt may lose approximately \$642 million per year as a result of ships re-routing to avoid piracy high-risk zones.¹⁷⁴ The Suez Canal has been closed in the past, namely, from July 1956 to April 1957 and from June 1967 to June 1975.¹⁷⁵ Although the closure was not caused by piracy, it demonstrates the possible economic loss that could be caused in the event of a canal

¹⁷² A Bowden *op cit* note 125 at 22.

¹⁷³ Y Hagi 'Somalia's Fuel prices reach record high' *Somalia Report* 2 July 2011 available at http://piracyreport.com/index.php/post/1076/Somalias_Fuel_Prices_Reach_Record_High, accessed on 16 June 2017.

¹⁷⁴ A Bowden *op cit* note 125 at 24.

¹⁷⁵ G Luciana *op cit* note 23.

being closed due to pirates. During the latter closure, trade fell by approximately 20% between countries that ordinarily made use of the Suez Canal.¹⁷⁶

6.2 Impact of piracy on the environment

Pirate attacks on energy carrying vessels pose a greater risk to the environment than attacks on a grain carrier for example or other ships carrying non-toxic or water-soluble products. Although there have been no incidents where pirates have caused major environmental damage, the risk of collision, spillage, grounding and explosion exists and the risk is particularly high in cases where pirates board a vessel and later escape leaving the bridge unmanned. For example, pirates attacked the *Valiant Carrier*, a tanker, and later escaped leaving the bridge unmanned. The carrier was left drifting with the current until the crew were able to free themselves and re-take control of the tanker.¹⁷⁷ The chances of an accident occurring in such circumstances are significantly high and a collision would most likely result in the vessel being ruptured and oil leaking into the ocean. Any collision could easily lead to an explosion, as fuels are highly flammable. Furthermore, pirates are untrained and working under stressful circumstances. One mistake could result in a fire or any other accident as these huge vessels are advanced and complex and require highly trained crew. The possible damage caused by the discharge of energy sources into the ocean will depend on the energy source. This section will now briefly set out the dangers associated with oil (including crude oil and oil by-products), coal and natural gases.

¹⁷⁶ J Feyrer 'The 1967 – 75 Suez Canal closure: lessons for trade and the trade-income link' 23 December 2009 available at <http://voxeu.org/article/1967-75-suez-canal-closure-lessons-trade>, accessed on 16 June 2017.

¹⁷⁷ R C Beckamn ... et al 'Acts of piracy in the Malacca and Singapore straits' (1994) 1(4) *Maritime Briefing*

6.2.1 Oil cargo

Oil spills can cause severe damage to the environment as demonstrated by the *Exxon Valdez* oil spill in 1989. The *Exxon Valdez* collided with a reef, causing severe damage to the hull and resulting in approximately 11 million gallons of oil leaking into the ocean.¹⁷⁸ The aftermath of the spill was disastrous and thousands of animals died.¹⁷⁹ Although the Exxon Valdez spill was not caused by piracy, it showcases the extent of damage that could be caused to the environment in the event of an energy vessel being left unmanned after an attack and colliding with a reef or other ship. The severity of damage is due to the fact that oil is mostly water insoluble and toxic. When birds and sea mammals come into contact with it, it creates an oil coating over their feathers and fur, which hinders their ability to keep warm and often causes death by hypothermia.¹⁸⁰ The oil coating may also affect birds' ability to fly resulting in them drowning. Oil toxicity can cause death, irritation or internal damage by contact to the skin and eyes, by ingestion or by the inhalation of fumes. Finfish and shellfish are not affected as much as sea mammals, turtles and birds as they remain under water whereas oil floats. Oil can destroy fish and turtle eggs and disrupt reproductive hormones.¹⁸¹ Other animals of prey can also be affected if they eat sea life that is contaminated. Once the oil reaches the shoreline it coats the sand and rocks and causes harm to sea creatures living in the sand, like crabs, as well as other coastal life. Oil spills are not only a danger to sea life but also to humans

¹⁷⁸ A Taylor 'The Exxon Valdez oil spill: 25 years ago today' *The Atlantic* 24 March 2014 available at <https://www.theatlantic.com/photo/2014/03/the-exxon-valdez-oil-spill-25-years-ago-today/100703/>, accessed on 16 June 2017.

¹⁷⁹ Ibid.

¹⁸⁰ National Ocean Service 'How does oil impact marine life?' available at <http://oceanservice.noaa.gov/facts/oilimpacts.html>, accessed on 7 September 2017.

¹⁸¹ J Kennedy 'Effects of oil spills on marine life' (2016) *About Education* available at <http://marinelife.about.com/od/conservation/tp/effectsofoilspills.htm>, accessed on 7 September 2017.

that come into contact with it either directly by coming into contact with contaminated soil or water or indirectly by ingesting contaminated sea life.¹⁸²

6.2.2 Coal cargo

Coal, also referred to as “black gold”, is conveyed across the globe by bulk carriers and is a black sedimentary rock that occurs naturally.¹⁸³ There is a major lacuna in research on the effects of unburnt coal on the marine environment.¹⁸⁴ An experiment conducted in June – July 2015 revealed that coral tissue died from exposure to coal sediment and the higher the exposure to coal the more tissue mortality occurred.¹⁸⁵ Fish exposed to coal had lower growth rates, however, only the fish exposed to the highest coal treatment died. Sea grass that was exposed to coal had considerable inhibited growth with visible difference in leaf elongation and shoot density. There have been no major coal spills caused by piracy but similarly to above, the risk does exist and the potential danger to the environment, although not as dangerous as oil, is vast.

6.2.3 Natural Gases

Highly advanced gas carriers are used to transport natural gases due to the fact that they are volatile, meaning they vaporize easily at normal temperature, resulting in them dissipating completely once they exposed to air and warm up.¹⁸⁶ Due to the fact that

¹⁸² C Embach ‘Oil Spills: Impact on the Ocean’ *Water Encyclopedia* available at <http://www.waterencyclopedia.com/Oc-Po/Oil-Spills-Impact-on-the-Ocean.html>, accessed on 7 September 2017.

¹⁸³ National Geographic’s ‘Coal’ available at <https://www.nationalgeographic.org/encyclopedia/coal/>, accessed on 7 September 2017.

¹⁸⁴ K.L.E Berry... et al. ‘Simulated coal spill causes mortality and growth inhibition in tropical marine organisms’ (2016) *Scientific Reports* 6: 25894 DOI: 10.1038.

¹⁸⁵ Ibid.

¹⁸⁶ E Dodge ‘How dangerous is LNG?’ *Breaking Energy* 22 December 2014 available at <http://breakingenergy.com/2014/12/22/how-dangerous-is-lng/>, accessed on 7 September 2017.

gas dissipates, there is no major threat to the environment apart from contributing to global warming. Vapours are, however, flammable and fire and explosion could be a threat to crewmembers.

6.3 The impact of piracy on safety at sea for crewmembers

Pirates have evolved with the times and often make use of advanced weapons and equipment. Being lawless, they are able to avoid regulations and obtain weapons easily on the black market. For example van der Merwe stated, “We found that Libyan weapons are being sold in what is the world’s biggest black market for illegal gun smugglers, and Somali pirates are among those buying from sellers in Sierra Leone, Liberia and other countries.”¹⁸⁷ According to the 2016 annual IMB report, Somali pirates are usually “well armed with automatic weapons and RPG”.¹⁸⁸ The ICC IMB categorises the weapons used by pirates into the following categories: guns, knives, not stated and other weapons. During 2016, 48 attacks involved the use of guns, 44 involved the use of knives, 96 attacks did not state the weapons used and 3 attacks involved the use of other weapons.¹⁸⁹

During 2016 a total of 5 crew were assaulted, 151 were taken hostage, 8 were injured, 62 were kidnapped for ransom and 10 were threatened.¹⁹⁰ Although the sum total of all of the above is the lowest it has been since 2003, according to the ICC-IMB report, the number of kidnappings is the highest it has been in 10 years.¹⁹¹ The ICC-IMB report states “a total of 151 crew were taken hostage and 62 kidnapped from their vessels in 15

¹⁸⁷ ‘Analyst says Somalia pirates have new weapons from Libya’ *Defence Web* 12 April 2012 available at http://www.defenceweb.co.za/index.php?option=com_content&view=article&id=24909:analyst-says-somali-pirates-have-new-weapons-from-libya&catid=51:Sea&Itemid=106, accessed on 7 September 2017.

¹⁸⁸ ICC IMB *Report 1 January – 31 December 2016 op cit* note 24 at 19.

¹⁸⁹ *Ibid.*

¹⁹⁰ *Ibid.*

¹⁹¹ ICC IMB *Report 1 January – 31 December 2015 op cit* note 2.

separate incidents – compared to 19 crew kidnapped from five incidents in 2015.”¹⁹² Although pirates do not often kill or injure the crew, to ensure they receive a high ransom, nevertheless, crew are often held hostage for long periods of time and endure extreme psychological damage from the traumatic events.¹⁹³ A study on the psychological impact on crew caused by piracy found that 57.14% of the subjects suffered from detachment, 42.85% were startled by noises, 71.42% suffered from anxiety, 57.14% had flashbacks of traumatic events, 28.57% had depressive symptoms and 42.85% suffered from sleep disturbances.¹⁹⁴

7. CONCLUSION

Most of the world’s energy is carried by sea on tankers, gas carriers and bulk carriers. The energy sector accounts for a large portion of the maritime trade, nearly 30%,¹⁹⁵ and several countries depend on maritime transport for the import of fossil fuels. From the above, it is clear that the transport of energy sources by sea is indispensable. It follows that the security on board energy carrying vessels is essential to ensure that the cargo, vessel, crew and interests by various states are protected. Yet, despite the increase of security at sea and the implementation of various ship hardening mechanisms, energy carrying vessels are the most targeted vessels by pirates and nearly half the attacks in 2016 and in the first quarter of 2017 were on energy carrying vessels.

¹⁹² ICC IMB *Report 1 January – 31 December 2016 op cit* note 24.

¹⁹³ A. R. Ziello ... et al ‘Psychological consequences in victims of maritime piracy: the Italian experience’ (2013) 64 (3) *International Maritime Health* at 136 -141 at 138.

¹⁹⁴ I Aleksandrow ... et al ‘On Psychological and psychiatric impact of piracy on seafarers’ (2015) 21(4) *Journal of IMAB* 991 – 994 at 993.

¹⁹⁵ UNCTAD *Review of Maritime Transport 2016 op cit* note 15 at 5 table 1.3.

The above overview of the main straits reveals that piracy is no longer ramped in those areas. The Malacca Straits however and the surrounding waters remain a high-risk zone with nearly half the attacks in the first quarter of 2017 being on energy carrying vessels. Other high-risk areas for energy carrying vessels include the GoG and the waters off the Indian coastline. Piracy in the Malacca Straits and surrounding waters mainly involve theft of oil cargo whereas piracy in the GoG and Indian waters involves theft of valuables on board energy carrying vessels. The conclusion is that energy carrying vessels are not only targeted for their valuable cargo but also because they make easier targets due to their vulnerabilities. As set out above, energy carrying vessels are vulnerable to attack for several reasons. They are large, slow moving and have minimum crew, pirates are able to board these vessels, overpower the crew and take control with relative ease. These vulnerabilities are the very reason energy carrying vessels require additional regulations to ensure their safety and energy security.

Piracy impacts the economy, directly and indirectly, and the safety of crew at sea and it poses a potential danger to the environment. Ship owners and charterers bear most of the economical impact, which they incur on increased insurance, vessel hardening mechanisms, re-routing and ransom. States are burdened with the expense of prosecution, detention and the supply of naval forces. As a result of the increased economical strain on ship owners, charterers and the State, the overall prices' relating to energy sources and other commodities or services that use energy sources is increased. In turn, this affects states, companies and end users as well as the maritime trade in general. Crew who are attacked or taken hostage face physical as well as mental threats to their person and

psyche. These vast negative consequences emphasize the importance and necessity for effective security on board energy carrying vessels.

CHAPTER 3: INTERNATIONAL LEGAL FRAMEWORK

1. INTRODUCTION

After the resurgence of piracy in 2006 off the coast of Somalia it became clear that the then current framework was wholly insufficient to deal with the epidemic and it was necessary to revise it in order to cope with the force and tactics used by modern pirates. It was insufficient because most of the acts of piracy fell outside the scope of the framework, as it did not meet the criteria. Piratical acts that did not meet the criteria were unregulated at an international level and states did not have the necessary jurisdiction to take steps to combat them. Today an extensive set of regulations exists in an attempt to suppress maritime crimes and although the overall number of reported incidents has decreased, 41% of the reported incidents in 2016 involved energy carrying vessels.¹⁹⁶ In light of the high number of attacks concerning energy carrying vessels and taking into account their vulnerabilities, as set out in the previous chapter, the question arises as to whether the current framework, both international and regional, is sufficient. This is the key question that this chapter and the next chapter will aim to answer. In order to establish this the chapter will set out the international legal framework relating to security on board energy carrying vessels. A study of the current framework will reveal that there are no provisions that apply specifically to the protection of energy carrying vessels from piracy. Therefore, energy carrying vessels fall under the same umbrella framework as all other vessels, which fails to take into account their inherent vulnerabilities as discussed in

¹⁹⁶ ICC IMB *Piracy and Armed Robbery Against Ships Report for the period 1 January – 31 December 2016* at 11. The total includes incidents on the following vessel-types: Tanker Bunkering, Tanker Chem/Product, Tanker Crude Oil, Tanker LNG and Tanker LPG.

the previous chapter. Energy carrying vessels carry valuable cargo through chokepoints and other high-risk areas and huge, slow moving and low to the water. These vulnerabilities emphasise the necessity for energy carrying vessels to be subject to a more specialised framework, which will assist to lessen their vulnerabilities.

The international framework against piratical acts is contained in three main conventions. The first Convention that will be discussed is the UNCLOS, which provides a foundation framework on piracy. Each article relating to piracy will be discussed below, highlighting the shortcomings and strengths. It was not long after UNCLOS came into force that it became apparent that it was insufficient to deal with piracy. The IMO embarked on developing the law and what followed was the creation of the SUA Convention and the 2005 protocol, which is the second Convention that will be discussed. The SUA Convention was primarily developed to combat acts of terrorism, however, its articles are broad enough to include acts of piracy and are therefore applicable. The third convention that will be discussed is the SOLAS Convention, as amended, as well as the International Ship and Port Facility Security (ISPS) Code. SOLAS, a convention focused primarily on safety, only contains a few provisions relating to security. Only the relevant provisions will be discussed below.

The international framework provides a useful body of law to be used by state parties to each convention to assist in combating maritime piracy. The current framework still contains several shortcomings that hinder the successful suppression of piracy. It is submitted that one shortcoming is that the framework fails to provide bespoke laws applicable to energy carrying vessels. Bespoke laws would assist to decrease their vulnerabilities and improve security on board. Energy is such a valuable commodity to

society and ships carry 90% of that energy. Nearly half of the reported incidents involve energy carrying vessels essentially causing a major threat to energy security. There are no provisions within the above-mentioned conventions that relate specifically to security on board energy carrying vessels, but it is important to set out the relevant provisions as they provide the general legal framework in place and although not specifically applicable to energy carrying vessels, the provisions are nonetheless applicable to energy carrying vessels that fly the flag of states that are party to the abovementioned conventions.

2. UNITED NATIONS CONVENTION ON THE OF LAW OF THE SEA 1982 (UNCLOS)

The rapid growth in sea born trade, development in oil exploration, the extension by states of their claim to coastal waters, fishing and pollution all gave rise to the necessity to create a legal regime that would create “a more stable order, promote greater use and better management of ocean resources and generate harmony and goodwill among States that would no longer have to eye each other suspiciously over conflicting claims”.¹⁹⁷ UNCLOS essentially codified the customary international law that existed at the time and provides the law of the sea.¹⁹⁸ Articles 100 – 107, 110 and 111 deals with piracy and the definition thereof, jurisdiction and obligations of states and these articles almost replicate Articles 14 to 22 of the Geneva Convention on the High Seas of 1958.¹⁹⁹ At the time of creation of UNCLOS, piracy was not viewed as a prevalent concern. In

¹⁹⁷ United Nations Oceans & Law of the Sea ‘The United Nations Convention on the Law of the Sea (A historical perspective)’ available at http://www.un.org/depts/los/convention_agreements/convention_historical_perspective.htm, accessed on 11 November 2017.

¹⁹⁸ D Chang ‘Piracy laws and the effective prosecution of pirates’ (2010) 33(2) *Boston College International and Comparative Law Review* 273 – 288 at 274.

¹⁹⁹ T Treves ‘Piracy, Law of the Sea, and use of force: developments off the coast of Somalia’ (2009) 20(2) *The European Journal of International Law* 399 – 414 at 401.

fact, it was believed that piracy was somewhat obsolete and that the nine Articles dedicated to piracy were unjustified.²⁰⁰ There are no Articles that apply specifically to energy carrying vessels. This is not surprising considering the lack of concern about piracy in general, let alone in relation to a specific vessel type. Further, it has only recently become evident that oil tankers are targeted for their cargo.²⁰¹ The relevant articles of UNCLOS will be discussed below.

Article 100 assigns a duty to all states to cooperate to the fullest possible extent in the repression of piracy.²⁰² This is a general duty and UNCLOS does not set out what exactly the term ‘cooperation’ entails and methods of cooperation to be used. At the centre of cooperation is information sharing and coordination between various actors however UNCLOS fails to include any provisions on those aspects. Article 101 sets out the definition of piracy and includes any act of inciting or intentionally facilitating any acts of piracy²⁰³ and acts of piracy committed by warships, government ships and government aircrafts whose crew have mutinied and taken control of the ship or aircraft.²⁰⁴ Article 101 contains four essential elements that must be present for an act to constitute an act of piracy. The four elements are:

- i. Any illegal acts of violence or detention, or any act of depredation;

²⁰⁰ V Surbun ‘The developing jurisprudence to combat modern maritime piracy: a crime of the high seas?’ (2010) 43(1) *The Comparative and International Law Journal of Southern Africa* 1 – 22 at 14.

²⁰¹ D Nincic ‘Maritime Piracy: Implications for maritime energy security’ (2009) *Journal of Energy Security* available at http://www.ensec.org/index.php?option=com_content&view=article&id=180:maritime-piracy-implications-for-maritime-energy-security&catid=9, accessed on 11 November 2017. Also see S Oakford ‘Pirates are running wild and hijacking oil tankers in southeast Asia’ (2015) *Vice News* available at <https://news.vice.com/article/pirates-are-running-wild-and-hijacking-oil-tankers-in-southeast-asia>, accessed on 11 November 2017.

²⁰² United Nations Convention on the Law of the Sea, Article 100. Full text available at http://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf.

²⁰³ Ibid Article 101(c).

²⁰⁴ Ibid Article 102.

- ii. Committed for private ends;
- iii. On the high seas;
- iv. Against another ship i.e. involving at least two ships.

These essential elements contained within the definition in Article 101 caused the definition of piracy and therefore the application of UNCLOS to be narrow. The definition of piracy came under scrutiny in 1985 when a political group seized the MS *Achille Lauro*.²⁰⁵ The attack on the MS *Achille Lauro* did not fall within the ambit of Article 101 for two reasons, namely, the attack was not committed for private ends and there was no second ship involved and as such the crime did not constitute an act of piracy and could not be tried in terms of UNCLOS.²⁰⁶ The third element caused the most problem as it excluded crimes committed in the territorial waters of a state when in fact the majority of pirate-like crimes in recent times are committed within the territorial waters of states.²⁰⁷ Piratical acts committed within a state's territorial waters fall solely within the jurisdiction of that state. The problem being that that state may not have sufficient domestic legislation or the necessary resources to exercise jurisdiction, resulting in many pirates escaping punishment.

Article 105 empowers any state to seize a pirate ship or aircraft, arrest any persons suspected of piracy and seize any property on board on the high seas or in any other place outside the jurisdiction of any state, after which such property and persons

²⁰⁵ For more on the MS *Achille Lauro* see B.L. Davies *Qaddafi, Terrorism, and the Origins of the U.S. Attack on Libya* (1990) Chapter 5. Also discussed in more detail below.

²⁰⁶ L Azubuike 'International Law Regime Against Piracy' (2009) 15(1) *Annual Survey of International & Comparative Law* 43 – 59 at 56.

²⁰⁷ M.D.S. Karim 'Prosecution of maritime pirates: the national court is dead – long live the national court?' (2014) 32(1) *Wisconsin International Law Journal* 37 – 94 at 44.

become subject to the laws of the arresting state. A pirate ship or aircraft is defined subjectively in that the person controlling the ship or aircraft must intend to use the ship or aircraft to carry out one of the acts provided in Article 101.²⁰⁸ A pirate ship will retain its original nationality as stated by Article 104, any loss or retention of the nationality of a pirate ship must be determined in accordance with the law of the state from which the nationality is derived.²⁰⁹ The jurisdiction conferred by Article 105 is referred to as ‘universal jurisdiction’ and confers on states wide powers to arrest any person suspected of piracy, seize the pirate ship or aircraft as well as property on board and to determine the penalties to be imposed. Arrested pirates will be subject to the domestic laws of the state exercising jurisdiction. Prosecution of international crimes in terms of domestic law will be discussed below under SUA and applies equally to prosecution under UNLCOS. Any state making an arrest must have adequate grounds to believe that the arrested persons committed an act of piracy. Any state that makes an arrest or seizes any property without adequate grounds can be held liable by the state of the nationality of the persons arrested or the property seized.²¹⁰ The use of the word ‘may’ in Article 105 means that states are not obligated to take such steps but are free to elect whether they will arrest and prosecute pirates and seize their property. Any arrest or seizure must be affected by warships²¹¹ or military aircrafts, or other ships or aircrafts clearly marked and identifiable as being on government service and authorised to that effect.²¹² Article 105 does not confer jurisdiction on a single state but on ‘every state’, however, it fails to provide

²⁰⁸ UNCLOS *op cit* note 7 Article 103.

²⁰⁹ *Ibid* Article 104.

²¹⁰ *Ibid* Article 106.

²¹¹ Article 29 of UNCLOS defines a warship as a “ship belonging to the armed forces of a State bearing the external marks distinguishing such ships of its nationality, under the command of an officer duly commissioned by the Government of the State and whose name appears in the appropriate service list or its equivalent, and manned by a crew which is under regular armed forces discipline”.

²¹² *Supra* Article 107.

guidelines to determine which state must exercise jurisdiction if no state has established or wants to establish jurisdiction or which state would have preferent jurisdiction if more than one state has established and wants to exercise jurisdiction.²¹³ Article 110 gives warships or other duly authorized ships clearly marked and identifiable as being on government service the right to board a vessel if, *inter alia*, there are reasonable grounds for suspecting that the ship is engaged in piracy. Lastly, Article 111 entitles contracting states to the right of hot pursuit of any vessel that is suspected of violating state laws and regulations. Hot pursuit must be commenced in a state's territorial waters up to the EEZ but must be terminated once the vessel reaches the territorial waters of either its own state or another state.

UNLCOS provides a basic framework that establishes jurisdiction over acts of piracy as defined in article 101. However, the narrow definition of piracy restricts the conventions applicability and as a stand-alone convention is insufficient to combat maritime piracy. Energy carrying vessels are often attacked within the territorial waters of a state, for example, and as set out in the previous chapter; energy carrying vessels are mostly targeted in the Malacca Straits and the GoG. Also, energy carrying vessels are more likely to be targeted by terrorists whose acts are not conducted for private-ends and therefore fall outside the scope of UNCLOS. Apart from its narrow application, it does not sufficiently provide for the prosecution of arrested pirates, procedures for investigation, the transfer of pirates to a third party to prosecute or the prevention of piracy. Despite several gaps in UNCLOS as aforementioned, it remains an important convention that forms the base of the international legal framework.

²¹³ T Treves *op cit* note 4 at 402.

3. CONVENTION FOR THE SUPPRESSIONS ON UNLAWFUL ACTS AGAINST SAFETY OF MARITIME NAVIGATION (SUA) 1988 AND 2005 PROTOCOL

During the 1980s a number of sea crimes took place, one of which was the hijacking of the MS *Achille Lauro*,²¹⁴ which caused major concern to the international community as those incidents showed that UNCLOS provided an insufficient framework to combat maritime crimes. The narrow definition of piracy meant that crimes that did not meet the strict criteria, like the MS *Achille Lauro* incident, could not be tried in terms of international law. In 1986 the IMO was tasked to prepare a convention on unlawful acts against the safety of maritime navigation “to provide for a comprehensive suppression of unlawful acts committed against the safety of maritime navigation which endanger innocent human lives, jeopardize the safety of persons and property, seriously affect the operation of maritime service and thus are a grave concern to the international community as a whole.”²¹⁵ In 1988 at a conference in Rome, the SUA Convention was adopted and opened up for signature. It came into force in 1992 and currently there are 166 contracting states.²¹⁶ The 2005 Protocol was adopted at London on 14 October 2005 and opened for signature on the 14th February 2006. The 2005 Protocol only entered into force nearly five years later on 28 July 2010 and to date there are only 41 contracting

²¹⁴ On 7 October 1985 four armed Palestinian terrorists took control of the MS *Achille Lauro* with about 320 crewmembers and 80 passengers on board. One passenger was shot and killed during the takeover, which lasted 3 days. The culprits were eventually captured and tried in Italy. For more see M.D. Larsen ‘The Achille Lauro and the Permissible use of force’ (1987) 9 *Loyola of Los Angeles International and Comparative Law Review* 481 – 497.

²¹⁵ IMO ‘Convention for the Suppression of Unlawful Acts Against the Safety of Maritime Navigation, Protocol for the Suppression of Unlawful Acts Against the Safety of Fixed Platforms Located on the Continental Shelf’ available at <http://www.imo.org/en/about/conventions/listofconventions/pages/sua-treaties.aspx>, accessed on 11 November 2017.

²¹⁶ IMO ‘Status of multilateral Conventions and instruments in respect of which the International Maritime Organization or its Secretary-General performs depositary or other functions’ (13 September 2017) at 420.Full text available from <http://www.imo.org/en/About/Conventions/StatusOfConventions/Documents/Status%20-%202017.docx.pdf>.

states to the 2005 Protocol.²¹⁷ The SUA Convention and the 2005 Protocol should be read in conjunction with the Protocol for the Suppression of Unlawful Acts against the Safety of Fixed Platforms Located on the Continental Shelf, 1988 (SUA PROT) and 2005 SUA PROT Protocol, which was concluded at the same time and extends the provisions of the SUA Convention and 2005 Protocol to fixed drilling and production platforms. A major concern with SUA is that it is not widely accepted. Some states of importance that are located near to piracy prone areas or linked with piracy and/or terrorism that have not ratified the SUA Convention nor the 2005 Protocol are Malaysia, Thailand, Somalia and Indonesia.²¹⁸ According to Herbert-Burns the main aim of the SUA Convention and the 2005 Protocol read with the SUA PROT and 2005 SUA PROT Protocol “is to ensure that sufficient and appropriate action is taken against those who have committed unlawful acts against vessels and offshore oil and gas infrastructure.”²¹⁹

SUA provides an extensive list of offences in Article 3 of the SUA Convention²²⁰ and Articles *3bis*, *3ter* and *3quater* of 2005 Protocol, which are punishable in terms of the

²¹⁷ Ibid at 435.

²¹⁸ Ibid.

²¹⁹ R Herbert-Burns ‘Tankers, specialized production vessels and offshore terminal: vulnerability and security in the international maritime oil sector’ in R Herbert-Burns... et al (ed) *Lloyd’s MIU Handbook of Maritime Security* (2009) 141.

²²⁰ Article 3 states:

“1. Any person commits an offence if that person unlawfully and intentionally: (a) seizes or exercises control over a ship by force or threat thereof or any other form of intimidation; or (b) performs an act of violence against a person on board a ship if that act is likely to endanger the safe navigation of that ship; or (c) destroys a ship or causes damage to a ship or to its cargo which is likely to endanger the safe navigation of that ship; or (d) places or causes to be placed on a ship, by any means whatsoever, a device or substance which is likely to destroy that ship, or cause damage to that ship or its cargo which endangers or is likely to endanger the safe navigation of that ship; or (e) destroys or seriously damages maritime navigational facilities or seriously interferes with their operation, if any such act is likely to endanger the safe navigation of a ship; or (f) communicates information which he knows to be false, thereby endangering the safe navigation of a ship; or (g) injures or kills any person, in connection with the commission or the attempted commission of any of the offences set forth in subparagraphs (a) to (f).

2. Any person also commits an offence if that person: (a) attempts to commit any of the offences set forth in paragraph 1; or (b) abets the commission of any of the offences set forth in paragraph 1 perpetrated by any person or is otherwise an accomplice of a person who commits such an offence; or (c) threatens, with

Conventions.²²¹ The key element of all of the listed offences is that the crime must be committed “unlawfully and intentionally”. A further key element in articles 3(1)(b) to (f) is that the act must “endanger the safe navigation of that ship”. SUA does not re-define piracy and the offences included in SUA are distinct “from the traditional international crime of piracy.”²²² SUA attempts to fill the gaps by providing an international convention to try crimes that do not fall within the jurisdictional ambit of UNCLOS. Some noteworthy innovations are firstly; SUA does not require the crime to be committed on the high seas. Secondly, there is no motive requirement, as SUA does not differentiate between crimes committed for private-ends and political-ends and thirdly, there is no requirement for an offence to be committed by one ship against another ship therefore discarding the two-ship requirement.²²³ With regards to the geographical scope of SUA, Article 4 provides that the “convention applies if the ship is navigating or is scheduled to navigate into, through or from waters beyond the outer limits of the territorial sea of a single state, or the lateral limits of its territorial sea with adjacent states.”²²⁴ Where the convention does not apply as aforesaid it will nevertheless apply when an “offender or the alleged offender is found in the territory of a state party other than a state referred to in paragraph 1.”²²⁵ SUA does away with universal jurisdiction, restricting its application, and introducing a requirement for a nexus between the state

or without a condition, as is provided for under national law, aimed at compelling a physical or juridical person to do or refrain from doing any act, to commit any 16 of the offences set forth in paragraph 1, subparagraphs (b), (c) and (e), if that threat is likely to endanger the safe navigation of the ship in question.”

²²¹ See Article 5, which states “Each State Party shall make the offences set forth in article 3 punishable by appropriate penalties which take into account the grave nature of those offenses.”

²²² M.D.S. Karim *op cit* note 12 at 53.

²²³ L Azubuike *op cit* note 11 at 53.

²²⁴ The Convention for the Suppression of Unlawful Acts of Violence Against the Safety of Maritime Navigation, March 10 1988, Article 4(1). Full text available from <http://www.un.org/en/sc/ctc/docs/conventions/Conv8.pdf>.

²²⁵ *Ibid* Article 4(2).

and the offender, ship or victim. A positive aspect of this is that it provides clearer provisions relating to jurisdiction; setting out circumstances when a state ‘shall’ establish jurisdiction or when a state ‘may’ establish jurisdiction. However, there is still no provision to assist with establishing who would have preferent jurisdiction if more than one state had established jurisdiction and wished to exercise it. Article 6 provides:

“Each state party shall take such measures as may be necessary to establish its jurisdiction over the offences set forth in article 3 when the offence is committed: against or on board a ship flying the flag of the state at the time the offence is committed; or

- (a) in the territory of that state, including its territorial sea; or
- (b) by a national of that state.

A state part may also establish its jurisdiction over any such offence when:

- (a) it is committed by a stateless person whose habitual residence is in that state; or
- (b) during its commission a national of that state is seized, threatened, injured or killed; or
- (c) it is committed in an attempt to compel that state to so or abstain from doing any act.”

Although SUA provides clearer rules relating to jurisdiction, it fails to make provisions equivalent to Article 105 and 110 of UNCLOS for apprehending offenders.²²⁶ If UNCLOS doesn’t apply then this leaves a lacuna in the framework with regards to apprehending offenders. In an attempt to rectify this, Article *8bis* of the 2005 Protocol provides for law enforcement or authorized state officials of a state party to board a ship of another state party if there are “reasonable grounds to suspect that the ship or a person on board the ship is, has been, or is about to be involved in, the commission of an offence set forth in article 3, *3bis*, *3ter* or *3quater*”.²²⁷ The state wishing to board the ship of another state must confirm the nationality of the ship and obtain consent from the state to

²²⁶ M.D.S Karim *op cit* note 12 at 52.

²²⁷ The Protocol of 2005 to The Convention for the Suppression of Unlawful Acts of Violence Against the Safety of Maritime Navigation, Article *8bis* (5). Full text available at http://oceansbeyondpiracy.org/sites/default/files/SUA_Convention_and_Protocol.pdf.

which the ship belongs before boarding the ship.²²⁸ This causes difficulty for states wishing to apprehend suspects whom they genuinely suspect are involved in illegal acts. The flag state of the suspected ship may not be a party to SUA and may refuse permission to board the suspected ship. The requirement to obtain permission could also cause unnecessary delays which could hinder the very purpose of SUA.

Another important article is article 7, which makes provisions for taking an accused into custody or taking any other necessary actions to ensure the accused is present at any criminal or extradition proceedings and which must be done in accordance with the laws of the state taking such actions.²²⁹ The state that has an accused in custody must immediately hold a preliminary enquiry into the facts of the incident and this too must be done in accordance with that states laws.²³⁰ Once a state has conducted a preliminary enquiry it must either prosecute the accused, if it has established jurisdiction or it must extradite the accused to a state that has. If a state has established jurisdiction but is unwilling to prosecute the offence then it is under an obligation to extradite the accused offender.²³¹ Therefore, state parties are obliged to either prosecute offenders or to extradite them to a state with jurisdiction willing to prosecute the offenders. This principle is referred to as “*aut dedere aut judicare*”.²³² This helps to ensure that accused persons are prosecuted rather than released by a state wanting to avoid the administration and expense associated with prosecution and detention.²³³ States are reluctant to expend

²²⁸ Ibid Article 8bis(5)(a) & (b).

²²⁹ SUA 1988 *op cit* note 29 Article 7(1).

²³⁰ Ibid Article 7(2).

²³¹ Ibid article 10.

²³² M.D.S Karim *op cit* note 12 at 51.

²³³ This is not a sure way to ensure prosecution as states may very well elect to release pirates to avoid the expense of any compulsory preliminary enquiry and costs of extradition and detention until successful extradition takes place.

resources to try matters and detain accused or convicted persons as it can cost a country millions.²³⁴ Further, some states have limited, if any, available resources and jail space to try, prosecute and convict. Treves stated:

“[States] seem concerned by the expense involved, by legal complexities, relating for instance to evidence, inherent in criminal proceedings to be held far away from the place where the alleged crime was committed, and, perhaps especially, by the human rights implications of exercising jurisdiction.”²³⁵

The result of states unwillingness to use state resources, and the lack of state resources, is that pirates are often released rather than prosecuted. Allowing an accused to be transferred to a state that is willing to prosecute will help prevent accused persons being released without being tried. Several states have entered into transfer agreements to aid prosecution and detention.

There is no international court responsible for prosecuting maritime crimes under UNCLOS and SUA and it is clear from the above that each state has a responsibility to establish jurisdiction in certain circumstances or may elect to establish jurisdiction in others in order to prosecute crimes in accordance with their domestic legislation. An accused is subject to the domestic laws of the state exercising jurisdiction and prosecuting the crime. Domestic laws relating to piracy differ from state to state, either significantly or insignificantly. The variation in legal systems results in inconsistencies and the result is that the outcome of a case and the severity of the sentence will depend on the court hearing the matter. This is a major concern, especially in respect of human

²³⁴ M Sterio ‘Fighting Piracy in Somalia (and elsewhere): Why more is needed’ (2009) 33(2) *Fordham International Law Journal* 372 – 408 at 394.

²³⁵ T Treves *op cit* note 4 at 408.

rights.²³⁶ Article 5 provides that “each state party shall make the offences set forth in article 3 punishable by appropriate penalties which take into account the grave nature of those offences.” The convention does not define what is meant by “appropriate penalties”. What is ‘appropriate’ is subjective to each state and will therefore vary. Another issue with relying on domestic legislation is that some states lack national legislation criminalizing piracy and other maritime crimes or national legislation may not allow for the prosecution of pirates or other international criminals unless certain conditions are met. For example, the United States (US) is unable to prosecute any pirates unless they have in some way threatened the national interest of the US.²³⁷ Despite the unavoidable inconsistencies and other issues with domestic legislation, many authors and policymakers believe that national courts are the appropriate forum to try piracy as opposed to an international court which is designed to deal with crimes that cannot be prosecuted by national courts.²³⁸

There are no provisions that relate specifically to the protection of oil tankers from piracy but SUA does contain some noteworthy provisions. Although SUA is primarily focused on maritime terrorism its broad application can include some acts of piracy.²³⁹ Karim is of the view that “a plain reading of the unlawful acts listed in SUA Convention clearly reveals that some types of piratical acts may qualify as an offence under the SUA

²³⁶ Certain human rights conventions will be applicable in certain circumstances. Human rights conventions relating to human rights include the Convention against Torture, the Refugee Conventions, the European Convention on Human Rights and the International Covenant on Civil and Political Rights.

²³⁷ M Sterio *op cit* note 39 at 392.

²³⁸ S Beekarry ‘Assessing current trends and efforts to combat piracy’ (2015) 46(1) *Case Western Reserve Journal of International Law* 161 – 175 at 165. See also M.D.S Karim *op cit* at note 12 at 41 who states “Concurring with the most recent approach of the global community, this article argues that the operationalization of national courts is the most viable option for ensuring the effective prosecution of pirates.”

²³⁹ M.D.S Karim *Ibid* at 53.

Convention.”²⁴⁰ As stated above, the provisions of SUA are extended to fixed drilling and production platforms by the 1988 SUA Protocol²⁴¹ and according to Herbert-Burns “provides the first international treaty and framework for combating and prosecuting those criminals and terrorists who have attacked (or intend to attack), or used a tanker or fixed oil or gas installation as part of a terrorist operation.”²⁴² Article 3bis states that any person commits an offence if that person unlawfully and intentionally:

- (a) when the purpose of the act, by its nature or context, is to intimidate a population, or to compel a government or an international organization to do or to abstain from doing any act:
 - (i) uses against or on a ship or discharges from a ship any explosive, radioactive material or BCN weapon in a manner that causes or is likely to cause death or serious injury or damage; or
 - (ii) discharges, from a ship, oil, liquefied natural gas, or other hazardous or noxious substance, which is not covered by subparagraph (a)(i), in such quantity or concentration that causes or is likely to cause death or serious injury or damage; or
 - (iii) [...]
 - (iv) [...]

Importantly, the above article takes cognisance of the vulnerabilities and possible dangers related to energy structures and energy carrying vessels. By specifically making such acts a crime it ensures that states have jurisdiction to take the necessary steps, minimising the chance of an accused raising jurisdiction as a defence and escaping the justice system. The purpose of the act as set out above must be to intimidate a population or compel a government or other organisation. This limits the scope of this section, which by definition will apply more to acts of terrorism.

²⁴⁰ Ibid.

²⁴¹ SUA 1988 *op cit* note 29.

²⁴² R Herbert-Burns *op cit* note 24 at 142.

4. INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA 1974 (SOLAS CONVENTION)

SOLAS is an international treaty that provides a minimum standard for safety with regards to construction, equipment and the operation of ships. This convention was the much needed result after the tragic event of the Titanic²⁴³, which highlighted the severe lack of safety measures that are necessary in all emergency situations. Several versions of SOLAS were adopted over the preceding years after Titanic, the last version was adopted in 1974 and included a tacit acceptance procedure to allow for the convention to be updated and amended as necessary.²⁴⁴ SOLAS entered into force on 25 May 1980 and to date there are 163 contracting states.²⁴⁵ The Convention applies to ships entitled to fly the flag of contracting states, provided specific requirements are met as set out in SOLAS and discussed below.²⁴⁶ Although previously solely focused on safety, various amendments have been affected to include provisions to enhance security at sea. These amendments should be obvious, considering safety and security are closely interlinked and insecurity at sea would automatically threaten safety of persons and property at sea. Chapter XI-2 of SOLAS provides “special measures to enhance maritime security” and gives effect to the ISPS Code,²⁴⁷ which was adopted in December 2002 after the events of 9/11 and intended to limit the risk of terrorism at sea. The ISPS Code entered into force

²⁴³ The Titanic, a British passenger liner, with a total of 2201 persons onboard, collided with an iceberg at 11.40pm on the 15th of April 1912. The severe lack of safety measures resulted in many deaths and only 712 people made it off the Titanic alive. See Titanic Inquiry Project available at <http://www.titanicinquiry.org/>, accessed on 11 November 2017.

²⁴⁴ IMO ‘International Convention for the Safety of Life at Sea (SOLAS)’ available at [http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/International-Convention-for-the-Safety-of-Life-at-Sea-\(SOLAS\)-1974.aspx](http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/International-Convention-for-the-Safety-of-Life-at-Sea-(SOLAS)-1974.aspx), accessed on 11 November 2017.

²⁴⁵ IMO Status on multilateral conventions *op cit* note 21 at 16.

²⁴⁶ International Convention for the Safety of Life at Sea (SOLAS) Article II. Full text available at [http://www.mar.ist.utl.pt/mventura/Projecto-Navios-I/IMO-Conventions%20\(copies\)/SOLAS.pdf](http://www.mar.ist.utl.pt/mventura/Projecto-Navios-I/IMO-Conventions%20(copies)/SOLAS.pdf), accessed on 11 November 2017.

²⁴⁷ *Ibid* Chapter XI-2 Regulation 4(1) and (2).

on 1 January 2009.²⁴⁸ Interestingly, chapter XI-2 and the ISPS Code provide the first provisions of a preventative nature. According to Balkin, “in essence, the new SOLAS chapter XI-2 and the ISPS Code take the approach that ensuring the security of ships and port facilities is basically a risk management activity and that in order to determine what security measures are appropriate, an assessment of the risk must be made in each particular case.”²⁴⁹ Both chapter XI-2 and the ISPS Code state that they apply to:

- “1 the following types of ships engaged on international voyages:
 - .1 passenger ships, including high-speed passenger craft;
 - .2 cargo ships, including high-speed craft, of 500 gross tonnage and upwards; and
 - .3 mobile offshore drilling units; and
- .2 port facilities serving such ships engaged on international voyages.”²⁵⁰

In light of the above provision, Chapter XI-2 and the ISPS Code will apply to all energy carrying vessels that are engaged in international trade. All energy carrying vessels are over 500 gross tonnage and due to the geographical location of energy sources, energy vessels are predominantly engaged on international voyages. Evidently, they do not apply to vessels under 500 gross tonnage and fishing vessels.

Chapter XI-2 sets out various obligations and responsibilities on contracting governments, companies, ships and port facilities. Further, it provides for the implementation of the ISPS Code. The ISPS code consists of two parts, namely, part A and part B. The former provides mandatory provisions whereas the latter is recommendatory.²⁵¹ ISPS Code provides for ship security plans and is mainly focused on

²⁴⁸ IMO Status on multilateral conventions *op cit* note 21 at 43.

²⁴⁹ R Balkin ‘The International Maritime Organisation and maritime security’ (2006) 30 *Tulane Maritime Law Journal* 1 – 34 at 17.

²⁵⁰ SOLAS *op cit* note 51 Chapter XI-2 Regulation 2.

²⁵¹ *Ibid* Chapter XI-2 Regulation 1(12).

the deterrence of terrorist attacks. However, it does not strictly apply to only terrorism. The ISPS Code, like Chapter XI-2, sets out responsibilities on contracting governments, ship security and port facility security. The ISPS Code is purely preventative in nature and its application is limited solely to the ship/port interface.²⁵² According to Balkin the ISPS Code “aims to provide a consistent, standardized framework for evaluating risk, enabling governments to offset changes in threat levels with changes in vulnerability for ships and port facilities through the determination of appropriate security levels and corresponding security measures.”²⁵³ The key objectives of the code are:

- i. to establish an international framework involving co-operation between all participants, both domestic and international;
- ii. to establish the respective roles and responsibilities of all participants
- iii. to ensure the early and efficient collection and exchange of security-related information;
- iv. to provide a methodology for security assessment so as to have in place plans and procedures changing security levels; and
- v. to ensure confidence that adequate and proportionate maritime security measures are in place.²⁵⁴

The ISPS Code contains three security levels²⁵⁵ to be applied to varying degrees of risk and threat. The first security level applies to every day sailing and operations and implements a minimum standard of security. The second security level applies to situations where there is increased risk, for example when transiting through pirate hotspots and requires additional security measures to be implemented until the increased risk has decreased. The third security level applies in cases where risk is probable or

²⁵² ISPS Code Preamble. Full text available at http://www.ubak.gov.tr/BLSM_WIYS/DISGM/tr/HTML/20130304_142647_66968_1_67502.pdf, accessed on 11 November 2017.

²⁵³ R Balkin *op cit* note 54 at 17.

²⁵⁴ *Supra* Part A 1.2.

²⁵⁵ SOLAS defines *security level* to mean “the qualification of the degree of risk that a security incident will be attempted or will occur.” *Security incident* is defined to mean “any suspicious act or circumstances threatening the security of a ship, including a mobile offshore drilling unit and a high speed craft, or of a port facility or of any ship/port interface or any ship to ship activity.”

imminent and implements specific protective security measures.²⁵⁶ Taking into account the heightened risk and vulnerabilities of energy carrying vessels, the ISPS Code could provide a security level specifically applicable to energy carrying vessels, to either be applied all the time or to be applied when transiting high-risk areas. Although, due to the fact that the ISPS Code is primarily focused on the prevention of terrorism and is limited to the ship/port interface, its limited application would not be entirely effective as a framework for security on board energy carrying vessels.

Regulation 6 requires ships to have ship security alert systems (SSASs), which must be signalled if any threat becomes apparent and transmit a ship-to-shore security alert.²⁵⁷ In theory, this is a useful mechanism that is used to signal a competent authority or company, notifying them of the ships identity, location and that the ship is under threat or that its security has been compromised, allowing for help to be made available. However, according to the IMB annual report for 2016, only 15 of the 191 ships attacked activated their security alert system. Of the 191 ships attacked, 80 were energy carrying vessels and of that 80 only 5 activated their security alert system. The *Gray Page*²⁵⁸ provides several reasons for the poor results of the security alerting system:

- i. “the use of low end technology in order to save costs;
- ii. the use of a single source of power and the failure to ensure that the system can be operated from an alternative source of power;

²⁵⁶ Part A of the ISPS Code defines the three security levels as follows:

“*Security level 1* means the level for which minimum appropriate protective security measures shall be maintained at all times.”

“*Security level 2* means the level for which appropriate additional protective security measures shall be maintained for a period of time as a result of heightened risk of a security incident.”

“*Security level 3* means the level for which further specific protective security measures shall be maintained for a limited period of time when a security incident is probable or imminent, although it may not be possible to identify the specific target.”

²⁵⁷ SOLAS *op cit* note 51 Chapter XI-2 Regulation 6.

²⁵⁸ The Gray Page is a specialist maritime consulting group, with wide ranging expertise in investigating cargo theft, losses, damage, fraud, hijacking and piracy. See <https://www.graypage.com/>, accessed on 11 November 2017.

- iii. the limited number of activation points;
- iv. the positioning of activation points;
- v. the limited number of crew that know the location of activation points, which is usually only the Master and the Ship Security Officer; and
- vi. uncertainty as to when the system should be activated.”²⁵⁹

Further to the above, a major concern with the security alert systems is the lengthy response time to a received alert. According to a review conducted by Timlen, an alert is often transmitted from the ship to the owner or other approved authority. The ship owner or authority that is notified first, will often verify the alert before notifying the flag state. In other instances, discussions are convened to determine the appropriate action that needs to be taken before notifying the flag state. Once the flag state of the ship under threat or attack has been notified it will notify the coastal states closest to the ship. Only then will coastal states be able to respond and offer assistance.²⁶⁰ This process can be drawn out, resulting in a failure to provide an expedient response as required in circumstances of imminent threat or attack. Interestingly, SASSs is rarely used in solidarity and in fact ships are encouraged “to contact the IMB or other agencies such as MARLO and the NATO Centre directly for assistance, whilst simultaneously activating that SSAS.”²⁶¹

SOLAS²⁶² and the ISPS Code fail to recognise the inherent vulnerabilities of energy carrying vessels and contain no provisions that apply specifically to security on board energy carrying vessels. In fact, SOLAS contain some provisions that may hinder

²⁵⁹ Gray Page ‘Ship security alert systems are failing at the time they are needed most’ (14 May 2014) available at <http://www.graypage.com/wp-content/uploads/2014/05/2014-05-14-Gray-Page-Ship-security-alert-systems-failings.pdf>, accessed on 11 November 2017.

²⁶⁰ T Timlen ‘The use of SOLAS ship security alert systems’ (2008) No. 154 *S. Rajaratnam School of International Studies* at 3 available at <https://www.rsis.edu.sg/wp-content/uploads/rsis-pubs/WP154.pdf>, accessed on 11 November 2017.

²⁶¹ *Ibid* at 8.

²⁶² SOLAS does contain provisions that relate specifically to energy carrying vessels with regards to safety, but not security.

the security on board ships and will be set out and explained. Regulation 19²⁶³ requires all vessels over a certain gross tonnage to be equipped with an automatic identification system (AIS).²⁶⁴ The AIS allows the exchange of navigational information between ports and other ships and includes information on the ships identity, type, position, course, speed, navigational status and other safety related information.²⁶⁵²⁶⁶ The AIS was primarily developed to help prevent collision but is now used for various purposes relating to safety and as stated by Murphy it was “designed with safety (including collision avoidance) rather than security in mind.”²⁶⁷ The AIS raises a few security issues, firstly, data can easily be falsified and can be used by for spoofing²⁶⁸ and hijacking²⁶⁹.²⁷⁰ Secondly, information is within the public domain and can be used by pirates to track energy carrying vessels and obtain important information to assist an attack. In an attempt to rectify the aforementioned issues, the IMO passed Resolution A.917 (22) authorising the master to switch off the AIS in certain circumstances. It states as follows:

²⁶³ SOLAS Chapter V Regulation 19

²⁶⁴ SOLAS Regulation 19 2.4 provides: “All ships of 300 gross tonnage and upwards engaged on international voyages and cargo ships of 500 gross tonnage and upwards not engaged on international voyages and passenger ships irrespective of size shall be fitted with an automatic identification system (AIS).”

²⁶⁵ SOLAS *op cit* note 52 Regulation 19/2.4.

²⁶⁶ The AIS is defined as a “system [that] provides for communication, navigation and surveillance capabilities for vessels and for fixed coast radio stations. The AIS transponder offers high-speed automated communications from ship to ship and ship to shore of vessels, voyages and safety-related information.” See M-2 AIS Transponder System Operational Manual available at <https://fccid.io/KLS-M-2/Users-Manual/Operation-Manual-500384.pdf>, accessed on 30 September 2017.

²⁶⁷ M.N. Murphy ‘The blue, green and brown: Insurgency and counter-insurgency on the water’ in T. Benbow and R. Thornton *Dimensions of Counter-insurgency: Applying Experience to Practice* (2008) at 60

²⁶⁸ Different forms of spoofing include ship spoofing, AtoN spoofing, SAR spoofing, closest point of approach (CPA) spoofing, distress beacon spoofing and faking weather forecasts. See Trend Micro (Research Paper) *A Security Evaluation of AIS* available at <https://www.trendmicro.com/vinfo/us/security/news/cybercrime-and-digital-threats/a-security-evaluation-of-ais>, accessed on 11 November 2017.

²⁶⁹ AIS hijacking involves altering any information’s about existing AIS stations. Attackers can maliciously modify information provided. See Trend Micro *ibid*.

²⁷⁰ *Ibid*.

“If the master believes that the continual operation of the AIS might compromise the safety or security of his/her ship or where security incidents are imminent, the AIS may be switched off.”²⁷¹

The effectiveness of AIS was limited by its short range, which was rectified by the introduction of the long-range identification and tracking system (LRIT) by regulation 19-1.²⁷² LRIT is a mandatory requirement that requires the following information to be transmitted automatically to authorised governments and authorities: identity of the ship, position of ship and date and time of the position provided.²⁷³ The LRIT must be capable of being switched off or cease the distribution of such information, which the master may implement in exceptional circumstances if in his opinion the LRIT compromises the safety and security of the ship.²⁷⁴ However, switching off the LRIT may compromise safety in relation to navigation and collision and the master will need to make the best possible decision taking into account all relevant factor. Another improvement with the LRIT is its restricted availability to the public as it uses point-to-point satellite communication and not public broadcasting.²⁷⁵ Another hindrance of security is the effect that SOLAS has on the employment of privately contracted armed security personnel (PCASP). The use of PCASP is a highly controversial topic and the debate on it falls outside the scope of this dissertation, save to say that the IMO’s Maritime Safety Committee (MSC) has drastically changed its stance with regards to PCASP to “tacitly

²⁷¹ International Maritime Organization (IMO), *Resolution A.917 (22), Guidelines for the Onboard Operational Use of Shipborne Automatic Identification Systems (AIS)*, 29 November 2001 as amended by Resolution A.956 (23).

²⁷² SOLAS *op cit* note 52 Regulation V/19-1, adopted by Resolution MSC.202 (81).

²⁷³ *Ibid* Regulation V/19-1(5).

²⁷⁴ *Ibid* Regulation V/19-1(7).

²⁷⁵ M Vesper et al... ‘The declining impact of piracy on maritime transport in the Indian Ocean: statistical analysis of 5-year vessel tracking data’ (2015) 59 *Marine Policy* 9 -15 at 11.

acknowledging that the deployment of armed security personnel on board ships has become an accepted industry and flag state practice in certain circumstances.”²⁷⁶

5. CONCLUSION

The legal framework as discussed above consists of UNCLOS, the SUA Convention and the 2005 Protocol and SOLAS and although there are other conventions that may bear some relevance to piracy,²⁷⁷ the aforementioned conventions are the most important and bear the most relevance. Although the framework is not specifically applicable to energy carrying vessels, it is applicable provided the flag state of the ship is a party to the convention and any additional requirements within the specific convention are satisfied. The framework provides states with the necessary jurisdiction and implements security measure. It allows state parties a wide discretion, often only encouraging obligations, as there is no real means of enforcing states to comply. Enforcement of the conventions depends on the domestic laws of each state party.

UNCLOS is a benchmark convention that attempted to codify the international customary law that existed at the time of its creation. UNCLOS contains several provisions relating to piracy, which at the time was thought to be more than sufficient as piracy was almost unheard of. UNCLOS provides an international definition of piracy and although the definition is restrictive, it is the most widely accepted definition and many succeeding laws have used the definition albeit sometimes extending it. UNCLOS

²⁷⁶ Prior to taking this stance MSC.1.Circ.1333, annex, paragraph 5 (June 26, 2009) stated “flag states should strongly discourage the carrying and use of firearms by seafarers for personal protection or for the protection of a ship”. See IMO on Private Armed Security available at <http://www.imo.org/en/OurWork/Security/PiracyArmedRobbery/Pages/Private-Armed-Security.aspx>, accessed on 28 October 2017.

²⁷⁷ Other conventions include the International Convention Against the Taking of Hostages, 1979, the United Nations Convention Against Transitional Organized Crime, 2000.

provides all states with universal jurisdiction but fails to provide any guidelines on when jurisdiction must be established in the event that no states wish to exercise their right of universal jurisdiction. It imposes a duty to cooperate in the suppression of piracy and the right to visit and the right of hot pursuit. UNCLOS provides provisions for arrest and seizures, persons and vessels authorised to conduct such arrests and seizures and liability in the event of wrongful arrest and seizure. UNCLOS does not provide guidelines for the transfer of suspected pirates and seized property. UNCLOS is an extensive convention, covering various different subjects. It does not relate to a specific issue solely or to a specific vessel type. UNCLOS would therefore not be suitable to provide for security specific to energy carrying vessels. Most subsequent conventions and agreements have used UNCLOS as a base or starting point, zoning in on the focal issue of the regime and expanding where necessary.

The SUA Convention aimed, *inter alia*, to fill the legal gaps that were revealed by the event of the *Achille Lauro*. The 2005 Protocol again made necessary additions to fill gaps that had become apparent over the years. SUA does not redefine piracy but includes an extensive list of offences, which are broad enough to include certain piratical activity and crimes. The provisions of the SUA Convention and the 2005 Protocol are extended by the 1988 SUA PROT and 2005 SUA PROT Protocol to fixed drilling and production platforms and although not applicable to energy carrying vessels, it recognises the vulnerabilities of energy structures at sea. SUA goes a long way to rectify the lacuna left by UNCLOS. It is not necessary that the crime be committed on the high seas, there is no two-ship requirement and there is no motive required. SUA does require that the act be unlawful and intentional and in most cases must endanger the navigation of the ship.

SUA requires a nexus between the state exercising jurisdiction and the accused either by the victim, accused or the ship and therefore does away with universal jurisdiction. SUA provides for taking an accused into custody who then becomes subject to the national laws of that state. Any legal proceedings, including extradition proceedings, are conducted in accordance with that states domestic law. There are no provisions contained in SUA which specifically apply to energy carrying vessels. Considering SUA is primarily focused on terrorism, it is somewhat surprising as there have been several incidents where terrorists have targeted energy carrying vessels and have made further threats to interrupt the supply of energy. Unfortunately, even if SUA did provide specifically for energy carrying vessels it would not be entirely effective as very few states have adopted the SUA Convention and 2005 Protocol.

SOLAS provides several security measures that form part of the international anti-piracy framework. Chapter XI-2 sets out various obligations on state parties to increase security and assist in suppressing piracy and enforces the ISPS Code. Chapter XI-2 and the ISPS are preventative in nature and primarily focus on risk management. Chapter XI-2 and the ISPS Code provide for co-operation between states, an outline of roles and responsibilities and guideline on information gathering and sharing with the aim of enhancing security. In addition, Chapter XI-2 implements the requirement for SASS on ships. Although, theoretically an innovative security measure, in practice it has proven to be less than successful. SOLAS is yet another convention that fails to provide any additional security measures for energy carrying vessels. Certain provisions may even increase the risk of attack. Chapter V implements AIS, which can be used by pirates to benefit their illegal operation. LRIT provides a more secure tracking system but it did not

replace AIS, which is still used. However, both systems may be turned off if the master deems it necessary for protection of the vessel and crew.

The above framework focuses on particular crimes; either piracy or terrorism but may encompass both as explained above. UNCLOS and SUA provide states with jurisdiction over the crimes included in those conventions. It is up to states to act in accordance with the provisions and exercise their jurisdiction accordingly, to bring pirates before a court of law to try and punish them for their crimes. SOLAS provides some security measures to be implemented by ship owners. The framework is not vessel-specific and applies when the requirements of that convention are satisfied. It is apparent from the previous chapter that energy carrying vessels are more susceptible to attack. Energy carrying differ from other vessels because they carry some of the world's most valuable cargo, cargo that is generally volatile and dangerous, they travel very specific routes and have inherent vulnerabilities such as their size, speed and minimum crew. The high number of attacks on energy carrying vessels shows that these factors need to be addressed within a legal context to ensure security on board. The current framework fails in this regard and as a result, the international framework is insufficient to ensure security on board energy carrying vessels and energy security

CHAPTER 4: REGIONAL FRAMEWORK AND INDUSTRY REGULATIONS

1. INTRODUCTION

The purpose of this chapter is to set out the regional framework applicable in several regions around the globe that are plagued by piracy, more specifically South East Asia and Africa and analyse the laws, or the lack thereof, applicable to energy carrying vessels. Regional agreements are useful to combat piracy and it can be said that they are complementary to article 100 of UNCLOS which states:

“All States shall cooperate to the fullest possible extent in the repression of piracy on the high seas or in any other place outside the jurisdiction of any State.”²⁷⁸

The above Article imposes a positive obligation on states to take necessary steps to repress piracy. It does not delineate what steps need to be taken but cooperation is essential for the repression of piracy and it is therefore prudent for states to implement regional agreements to enable them to take such steps. Regional agreements and industry regulations have played a vital role in combating piracy and have often been used to fill the gaps in the international framework. From the overview of the international framework in the previous chapter it is clear that it fails to take into account the vulnerabilities of energy carrying vessels. Perhaps regional agreements are better suited to provide a bespoke framework, as regional agreements tend to be more flexible. Piracy requires flexibility, as it is not static but always evolving and differs from region to region. Therefore, regional agreements and industry regulation can be better adjusted for a specific region or vessel type, taking into account the common *modus operandi* of

²⁷⁸ United Nations Convention on the Law of the Sea, Article 100. Full text available at http://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf.

pirates in the region, popular targets, core causes and other geopolitics within the region. The only shortfall with regional agreements and industry regulations is that they tend to be non-binding in nature and are therefore considered to be soft laws. ‘Soft law’ refers to “non-legally binding instruments used in contemporary international relations by states and international organisations.”²⁷⁹²⁸⁰ Not all regional agreements are non-binding and a distinction will be made where necessary.

There are various regional treaties, codes and strategies in place. This chapter will focus on the regional framework in regions most affected by piracy and includes South East Asia and East and West Africa. Industry regulations tend to focus on specific regions and form part of the regional framework of that region. The regional framework will also include UN SC Resolutions and IMO Circulars, because although they are international, they have a regional application. As set out in chapter one, this chapter will cover several instruments, such as the ReCAAP, ReCAAP Guidelines, the Djibouti Code of Conduct, the BMP4, the GoG Guidelines, the 2050 AIMS, the Luanda Declaration, the Lomé Charter and the Yaoundé Declaration as well various UN SC Resolutions²⁸¹ and IMO Resolutions and Circulars. It will become evident from the below overview of the regional framework, that there is lacuna in the legal system with regards to energy carrying vessels and although the Luanda Declaration focuses on energy security, it merely paves the way for states to take the necessary steps. Up until now, states have

²⁷⁹ A Boyle ‘Soft law in international law-making’ in M. D. Evans (ed) *International Law* (2010) 124.

²⁸⁰ The term ‘soft law’ is highly debated amongst scholars and there is no single agreed definition. For the purpose of this dissertation it merely refers to non-binding regulations as defined by A Boyle *ibid*.

²⁸¹ United Nations Security Council Resolutions 1816, 1838, 1846 and 1851. Full Resolutions available at http://www.un.org/depts/los/piracy/piracy_documents.htm, accessed on 2 December 2017.

failed to take positive steps in accordance with the Luanda Declaration and as a result, energy carrying vessels continue to fall victim to attack.

2. REGIONAL FRAMEWORK IN SOUTH EAST ASIA

As stated above, regional agreements can be created to better suit the specific needs and problems of a region. UNCLOS would be insufficient to combat piracy in this region as most crimes occur within territorial waters of a state, due to the geographical location. SUA does not fill the gaps in this region because although it introduced various new crimes and dispensed with the high-sea and motive requirement, it has not been widely adopted.²⁸² Some of the major states that have not adopted SUA are Indonesia, Thailand and Malaysia.²⁸³ To combat the high number of pirate and armed robbery incidents in the region, a proposal was made at The Association of Southeast Asian Nations (ASEAN)+3 Summit Meeting in November 2001 for a regional co-operation agreement to be implemented.²⁸⁴ Drafting commenced in 2002 and ReCAAP was adopted on the 11th November 2004.²⁸⁵ To date ReCAAP has 20 contracting members.²⁸⁶ ReCAAP aims to “promote and enhance cooperation against piracy and armed robbery in

²⁸² See chapter 3 at page 7. IMO ‘Status of multilateral Conventions and instruments in respect of which the International Maritime Organization or its Secretary-General performs depositary or other functions’ (13 September 2017) at 420. Full text available from <http://www.imo.org/en/About/Conventions/StatusOfConventions/Documents/Status%20-%202017.docx.pdf>.

²⁸³ Ibid at 422 – 424.

²⁸⁴ ReCAAP “Enhancing regional cooperation: The Asian initiative” (ReCAAP presentation at the INTERTANKO workshop – security at sea) 16 May 2014 available at <http://www.intertanko.com/upload/98799/ReCAAP.pdf>, accessed on 2 December 2017.

²⁸⁵ Ibid.

²⁸⁶ Member countries include Australia, People’s Republic of Bangladesh, Brunei Darussalam, Kingdom of Cambodia, People’s Republic of China, Kingdom of Denmark, Republic of India, Japan, Republic of Korea, Lao People’s Democratic Republic, Republic of the Union of Myanmar, Kingdom of the Netherlands, Kingdom of Norway, Republic of the Philippines, Republic of Singapore, Democratic Socialist Republic of Sri Lanka, Kingdom of Thailand, United Kingdom, United States of America and Socialist Republic of Viet Nam.

Asia”.²⁸⁷ ReCAAP established the ReCAAP Information Sharing Centre (ISC), which provides a platform to enable information sharing and cooperation. This concise agreement has only 22 Articles and is complementary UNCLOS. Perhaps this hinders the agreements effectiveness as the right of hot pursuit as provided in UNCLOS is unaltered and as such ReCAAP does not allow for cross-border pursuits in a region where states territorial waters are all within close proximity of one another.²⁸⁸ This allows pirates to easily escape by sailing into neighbouring states territorial waters. The agreement contains various other obligations, none of which are compulsory but rather encourage states to take certain steps.

As stated in chapter 2, this area has the most reported incidents.²⁸⁹ In 2016 there was a total of 68 attacks, of which, 25% involved energy carrying vessels.²⁹⁰ This trend continued and in the first half of 2017 there was a total of 36 attacks, of which 42% involved energy carrying vessels.²⁹¹ The problem has not gone unnoticed; ReCAAP released a Special Report on Incidents of Siphoning of fuel/oil at Sea in Asia in 2014 and 2015 and in November 2015 published the ReCAAP Guidelines.²⁹² The aim of the guide is to:

²⁸⁷ ReCAAP Org Home Page available at <http://www.recaap.org/>, accessed on 2 December 2017.

²⁸⁸ Taking into account the geographical set up in this region, cross border pursuit is perhaps necessary to prevent pirates from escaping by simply crossing into the territorial waters of a nearby state. However, this region has been rife with tension over territorial space and not allowing cross border pursuit respects state sovereignty and allows for better state-to-state relations.

²⁸⁹ The area referred to includes Indonesia, the Malacca Straits, Malaysia, Philippines, Singapore Straits and Thailand.

²⁹⁰ ICC IMB *Piracy and Armed Robbery Against Ships Report for the period 1 January – 31 December 2016*

²⁹¹ ICC IMB *Piracy and Armed Robbery Against Ships Report for the period 1 January – 31 June 2017*.

²⁹² Guide for Tankers Operating in Asia Against Piracy and Armed Robbery Involving Oil Cargo Theft (ReCAAP Guidelines). Full version available at <http://www.recaap.org/Portals/0/docs/Reports/2015/Guide%20for%20Tankers%20Operating%20in%20Asia%20Against%20Piracy%20and%20Armed%20Robbery%20Involving%20Oil%20Cargo%20Theft.pdf>.

“Illustrate the threat of piracy and armed robbery against ships (hereafter referred to as ‘sea robbery’) in Asia, particularly incidents involving oil cargo theft; and to assist ships to avoid, deter or delay such incidents; as well as post-incident management.”²⁹³

The ReCAAP Guide sets out various guidelines to assess risk and to prevent attacks taking into account the degree of risk applicable. The risk assessment takes into account reported incidents, focusing on the common *modus operandi*, the type and size of vessels and the cargo carried, which enables ship owners to assess the risk applicable by looking at the route travelled, the type of oil cargo carried and the size of the vessel. Figure 10 below reflects a generic risk assessment table, which can be used by ship owners. The ReCAAP Guide sets out various preventative measures, which include but are not limited to, training crew to enable them to act as required when under threat, doing background checks on crew, ensuring that a proper ship security plan is in place, implementing ship protection measure which include installation of strong hardening measures such as barbed or razor wire barriers, spikes, water or foam sprayers or other recognised deterrents, especially in vulnerable points of entry, securing doors and hatches, reinforcing hatches with padlocks or other security measures, securing port holes and windows, designating and limiting the number of access points, implementing measures to block or lift external ladders, securing tools and equipment that can be used by pirates, installing alarms to warn crew and intruders, complying with the ISPS Code and BMP 4, installing a SSAS, installing emergency communication equipment, tracking devices, communications equipment, search light and lighting and close circuit television. The ReCAAP Guide provides checklists for the ship manager, company security officer, shipmaster and crew for before sailing, during sailing, during an attack and after an attack. Further, the ReCAAP Guide promotes information sharing, situational awareness

²⁹³ Ibid at 1.

and co-ordination. It is up to owners to utilise available information and avoid high risk areas where possible or be aware of the risk and prepare adequately for it.²⁹⁴

During 2015 there were a total of 147 reported incidents in the South East Asia and approximately 33% of which involved energy carrying vessels. The above guidelines were published at the end of 2015 and in 2016 there was a drastic decrease in overall attacks, which decreased by just over 50%, with a total of 68 incidents reported. About 25% involved energy carrying vessels. The decrease in attacks on energy carrying vessels is noteworthy but it is apparent that these vessels are still targeted because in the first half of 2017, although the overall number of attacks is the lowest it has been over the past five years, a total of 42% of the incidents that were reported involved energy carrying vessels.²⁹⁵ Only one incident involved the theft of cargo.²⁹⁶ The only inference that can be drawn from that is that tankers are not only targeted for their fuel but because they are vulnerable and more susceptible to attack. From the high percentage of attacks involving energy carrying vessels it would appear that the ReCAAP Guidelines have not been entirely effective. This could be due to ship owner's failure to comply with the recommendations, as the ReCAAP Guidelines are non-binding.

²⁹⁴ Ibid.

²⁹⁵ ICC IMB *Piracy and Armed Robbery Against Ships Report 2017 op cit* note 14.

²⁹⁶ The C.P. 41, a product tanker was boarded by six pirates who took all the crew hostages. The pirates damaged the navigation and communication equipment before sailing the tanker to an unknown location where part of the diesel oil cargo was stolen and transferred to another boat. For the full report see *ibid* at 33 & 34.

Risk		Low	Medium	High
Gross Tonnage	< 2000			x
	2000 - 5000		x	
	> 5000	x		
Type of Oil Cargo	MGO, MFO, MDO, Diesel, ADF			x
	Gasoline, lube oil, palm oil and others		x	
	Others (e.g. hot asphalt)	x		
Location	South China Sea			x
	Malacca Straits	x		
	Other Locations		x	
Possible Mitigation Measures		Comms RSL/TSS	Comms RSL/TSS SPM	Comms RSL/TSS SPM TID

Figure 10: Generic Risk Assessment Table (Source: ReCAAP Guide for Tankers Operating in Asia Against Piracy and Armed Robbery Involving Oil Cargo Theft)

3. REGIONAL FRAMEWORK IN EAST AND WEST AFRICA

Piracy has plagued both the East and West Coast of Africa and as a result, various regional agreements have been established to assist combat piracy. Regional agreements generally focus either East Africa or West Africa, however, there are purely African initiatives which will also be discussed below and include the 2050 AIMS, the Luanda Declaration and the Lomé Charter.

3.1 East Africa

Somalia was severely affected by piracy in the past, today however, the epidemic appears to be contained. This does not mean that states and the shipping industry can

become complacent because if they did, piracy would again flourish in the region. Due to the severity of piracy in this region, various codes and guidelines have been developed. The current legal framework in this region consists of the Djibouti Code of Conduct, the BMP, various UN SC Resolutions²⁹⁷ and IMO Resolutions and Circulars.

The Djibouti Code of Conduct is an IMO initiative that provides a framework for co-operation and capacity building.²⁹⁸ The Djibouti Code is partially modelled after ReCAAP; however, it is not legally binding²⁹⁹ and it is not open to all states for signature.³⁰⁰ A total of 20 states, of the 21 states eligible to sign, have signed the Code. Briefly, the code provides for co-operation, assistance, incident reporting, co-ordination and information sharing between state participants. The Code encourages parties to implement ship protection measures and calls for states to review domestic legislation to enable effective detention, prosecution and extradition. The Code provides for the appointment of offices for the purpose of embarking suspected ships and sets out guidelines for the officers. Similarly, to UNCLOS³⁰¹, it gives States and ship owners a right to claim damages arising from damage, injury or loss as a result of action taken in terms of the Code.³⁰² As a regional agreement, the Djibouti Code was framed to suite the specific threat in that region. Somali pirates are known for taking ships hostage for

²⁹⁷ UN SC Resolutions *op cit* note 4.

²⁹⁸ The Code of Conduct concerning the Repression of Piracy and Armed Robbery against Ships in the Western Indian Ocean and the Gulf of Aden (Djibouti Code of Conduct) Article 2. Full text available from <https://www.prc.cm/files/f7/26/ec/8acea8ec3a597473a76bd03c76140019.pdf>.

²⁹⁹ *Ibid* Article 15(a).

³⁰⁰ R Geiss, A Petrig *Piracy and Armed Robbery at Sea: The Legal Framework for Counter-Piracy Operations in Somalia and the Gulf of Aden* (2011) 49 & 50.

³⁰¹ UNCLOS *op cit* note 1 Article 106.

³⁰² The Djibouti Code *op cit* note 21.

ransom³⁰³ and a study of incidents in this region reveals no indication that energy carrying vessels are specifically targeted.³⁰⁴ It was therefore not necessary for the Djibouti Code to address the vulnerabilities of energy carrying vessels. What the Djibouti Code does demonstrate is the success of a Code designed to suit a specific problem taking into account all other relevant factors that are present and relate to threat. The Djibouti Code was designed to combat piracy in East Africa and was successful. A code designed to combat piracy against energy carrying vessels could be equally as successful.

Several UN SC Resolutions have been passed, in terms of Chapter VII of the United Nations Charter, on piracy off the coast of Somalia.³⁰⁵ These Resolutions have gone a long way to help the epidemic, even allowing States to enter the territorial waters of Somalia.³⁰⁶ The UN SC Resolutions have attempted to fill voids created by UNCLOS and as stated by Gottlieb “these resolutions (“the piracy resolutions”) form a multifaceted approach and contain a number of innovative elements.”³⁰⁷ Chapter VII empowers the UN SC to make recommendations or decide what measures shall be taken in the event of “any threat to the peace, breach of the peace, or act of aggression.”³⁰⁸ Piracy has not expressly been labelled as a threat to the peace but rather that it “exacerbates the situation

³⁰³ As stated by Gottlieb “The Somali piracy model is based on hijacking ships for ransom.” See Y Gottlieb “The security councils maritime piracy resolutions: a critical assessment” (2015) 24(1) *Minnesota Journal of International Law* 1 – 72 at 49.

³⁰⁴ In saying that, it does not mean that energy carrying vessels are not affected in this region. The MV *Sirius Star* discussed in chapter 2 was taken hostage off the coast of Somalia and although not specifically targeted, any attack on an energy carrying vessel can have catastrophic consequences on the environment in the case of collision, grounding or any accident as well as the crew and the economy.

³⁰⁵ Security Council resolution on piracy off the coast of Somalia are: 1814 (2008), 1816 (2008), 1838 (2008), 1844 (2008) 1846 (2008), 1851 (2008), 1897 (2009), 1918 (2010) (this is the only resolution on Somali piracy that was not adopted under chapter VII), 1950 (2010), 1976 (2011), 2015 (2011), 2020 (2011), 2077(2012), 2125 (2012), 2184 (2014) 2246 (2015), 2316 (2016), 2383 (2017). For full texts see *op cit* note 4.

³⁰⁶ *Ibid* Resolution 1816.

³⁰⁷ Y Gottlieb, *op cit* note 26 at 2.

³⁰⁸ The United Nations Charter, Article 39. Full text available at <https://www.un.org/en/charter-united-nations/>.

in Somalia which constitutes a threat to international peace and security in the region.”³⁰⁹ By referring to piracy in this manner the UN SC acted cautiously as there had been no consensus among participating states that piracy was a threat to international peace and security.³¹⁰ Considering the importance of energy security, any major threat to it would most likely disrupt international peace and security and justify intervention by the UN SC. Yet there are no provisions relating specifically to energy carrying vessels. Such a resolution could implement mandatory security measures, allow for private security on board and provide guidelines for entering into states territorial waters, when armed. Although, as stated above, energy carrying vessels are not specifically targeted in this area and therefore, intervention in this regard was not necessarily called for. However, in the GoG it is. This will be discussed in more detail below. In addition to UN SC resolutions there are numerous IMO Resolutions and Circulars on piracy in this region. None of the aforementioned addresses the vulnerabilities of energy carrying vessels but rather make recommendations and provides guidelines of a general nature.³¹¹ The IMO has published guidelines on the use of privately contracted armed security personnel when transiting High Risk Areas and importantly, recommended compliance with the BMP.

³⁰⁹ Resolution 1816 *op cit* note 29.

³¹⁰ Y Gottlieb, *op cit* note 26 at 19.

³¹¹ For a detailed list of all IMO publications see: IMO “Information resources on piracy and armed robbery against ships” available at <http://www.imo.org/en/KnowledgeCentre/InformationResourcesOnCurrentTopics/PiracyandArmedRobberyagainstShips/Documents/Information%20Resources%20on%20PIRACY%20AND%20ARMED%20ROBBERY%20AGAINST%20SHIPS.pdf>, accessed on 2 December 2017.

The BMP was developed by industry organisations³¹² to provide guidance to ship owners and charterers to “assist ships to avoid, deter or delay piracy attacks in the High-Risk Area...”³¹³ and is the first hands-on approach of protection to be developed. The BMP has been revised four times and the most recent edition, the BMP4, was published in August 2011. The BMP4 contains three fundamental requirements. Firstly, states are required to register at the Maritime Security Centre – Horn of Africa (MSCHOA). Secondly, states are required to report to the United Kingdom Marine Trade Operations and thirdly, states are required to implement Ship Protection Measures (SPMs).³¹⁴ The BMP4 provides general provisions to assist ship owners with security measures when transiting high-risk areas. Although supported by the IMO, these recommendations are non-binding.³¹⁵ The BMP4 does not contain any specialised provisions relating specifically to energy carrying vessels but as stated above, there is no evidence that energy carrying vessels are targeted in this area and therefore it was not necessary to provide more specific and specialised provisions. This does not mean that energy-carrying vessels are not at risk but a study of the ICC-IMB reports reveals that pirates in this region have not stolen fuel cargo during attacks. Although, oil tankers have been taken hostage for ransom, like the MV Sirius Star discussed in chapter 2, and are able to procure a high ransom. Any regulations relating specifically to energy carrying vessels

³¹² Developed by BIMCO, ICS, INTERCARGO and INTERTANKO and signatories include BIMCO, CLIA, ICS, IGP&I, IMB, IMEC, INTERCARGO, InterManager, INTERTANKO, ISF, ITF, IPTA, JHC, JWC, OCIMF, SIGTTO, The Mission to Seafarers and WSC. See Steamship Mutual at <https://www.steamshipmutual.com/loss-prevention/BMP4Piracy0811.htm>, accessed on 2 December 2017.

³¹³ Best Management Practice 4 at 1. Full text available at http://www.mschoa.org/docs/public-documents/bmp4-low-res_sept_5_2011.pdf?sfvrsn=0.

³¹⁴ Ibid at v.

³¹⁵ IMO Circular MSC. 1/1339 issued on 14th September 2014 encourages member states to make use of BMP.

would be applicable by vessel type and not region and therefore any risk in this region would be managed.

3.2 West Africa

Energy carrying vessels are at high risk in this region and more than half of the reported incidents for 2016 involved energy carrying vessels. Furthermore, this is an oil rich region with several oil producing states, which produce more than five million barrels of crude petroleum per day.³¹⁶ As far back as 1983, the IMO published its first Resolution relating to piracy in this region.³¹⁷ More recently when piracy in this region surpassed the Gulf of Aden, a United Nations Office on Drugs and Crime (UNODC) threat assessment report stated:

“Much of the piracy that affects West Africa is a product of the disorder that surrounds the regional oil industry. A large share of the recent piracy attacks targeted vessels carrying petroleum products. These vessels are attacked because there is a booming black market for fuel in West Africa.”³¹⁸

Industry organisations, such as the Baltic and International Maritime Council (BIMCO), ICS, the International Association of Dry Cargo Ship-owners (INTERCARGO) and the International Association of Independent Tanker Owners (INTERTANKO) responded by utilising the BMP4 and implementing the GoG Guidelines, which aims to “bridge the gap between the advice currently found in BMP4 and the prevailing situation in the GoG

³¹⁶ B Ki-moon, Secretary General, United Nations. Report of the United Nations Assessment Mission on Piracy in the Gulf of Guinea (7 to 24 November 2010), Letter dated 18 January 2012 at 11 available at <http://www.securitycouncilreport.org/atf/cf/%7B65BF9B-6D27-4E9C-8CD3-CF6E4FF96FF9%7D/AUUN%20S%202012%2045.pdf>, accessed on 2 December 2017.

³¹⁷ IMO Resolution A545 (13) “Measures to prevent acts of piracy and armed robbery against ships” available at <http://www.imo.org/en/OurWork/Security/PiracyArmedRobbery/Guidance/Documents/A.545.pdf>, accessed on 2 December 2017.

³¹⁸ UNODC “Transnational organized crime in West Africa: a threat assessment” (February 2013) available at http://www.unodc.org/documents/data-and-analysis/tocta/West_Africa_TOCTA_2013_EN.pdf, accessed on 2 December 2017.

region.”³¹⁹ The GoG Guidelines state which sections of the BMP4 apply, either partially or wholly, and where there are differences between the regions it offers guidelines and provides alternatives applicable to that region thus taking into account the *modus operandi* of pirates who operate in the GoG. The guidelines set out three categories of piracy, the one being ‘cargo theft’ and on it states:

“This occurs throughout the area described and often occurs in or about the STS transfer areas where ships are particularly vulnerable. In the main it is related to product and chemical tankers but there are also regular attacks and thefts on general cargo carriers... Vessels are hijacked for several days and cargo is transferred to a smaller vessel. These incidents are well organised, often involving a criminal element with commercial interests ashore. Recent cargo thefts have demonstrated that pirates often have a maritime know-how allowing them to disable communications, operate the cargo system, etc.”³²⁰

Like the BMP4, the GoG Guidelines are non-binding and therefore their effectiveness depends on whether and to what extent ship owners implement the necessary measures. As set out in chapter 2, in 2016 a shocking 51% of and in the first half of 2017, 37.5% of the incidents reported in this region involved energy carrying vessels. Theft of oil cargo has decreased drastically over the past few years but energy carrying vessels remain the most targeted vessel type. Perhaps ship owners have become complacent or do not wish to incur exorbitant costs implementing the BMP4 and would rather save the money and take their chances. Maybe the gravity of the problem and the grave risk to the economy, environment and crew has not yet been realised. Whatever the reason is, a possible solution is to make both the BMP4 and the GoG Guidelines compulsory on board energy carrying vessels. Ship owners do not have the same protection of the navy or private

³¹⁹ The Guidelines for Owners, Operators and Masters for Protection against Piracy in the Gulf of Guinea Region at 1. Full text available at <http://www.ics-shipping.org/docs/default-source/Piracy-Docs/011014-gog-guidelines-revised-version-for-release-2432EF577EBB.pdf?sfvrsn=6>, accessed on 2 December 2017.

³²⁰ Ibid at 4.

security in this region as they would in the Gulf of Aden and therefore it is necessary for ship owners to ensure that their ships are protected.³²¹

The UN SC Council has remained relatively quiet on the issue save for two resolutions passed, namely, resolution 2018 (2011) and 2039 (2012).³²² Neither of which contain any binding provisions to effectively combat piracy. Rather, they encourage states and interregional organisations to lead the way providing only a fraction of the assistance that was given in the Gulf of Aden. The UN SC was correct to allow the GoG states and interregional organisations to deal with the problem, considering the difference in on land politics as opposed to Somalia. The GoG states are not willing to relinquish sovereignty over their territorial waters and allow foreign states and navies to patrol or use force. However, Somalia did not relinquish sovereignty. In fact, Somalia³²³ gave consent to the UN SC to pass the resolutions it did and each resolution reaffirmed the sovereignty, territorial integrity, political impence and unity of Somalia.³²⁴ Considering the importance of energy to states, any major disruption to the supply of energy could cause significant tension and disrupt international peace. The GoG states have been unsuccessful at managing the threat and therefore should authorise the UN SC to provide assistance because although it is an “African problem”³²⁵, it negatively affects all states relying on this region for oil and all ship owners transiting this region.

³²¹ Polity New stated “Both the European Union (EU) and NATO have stated that they have no intentions to intervene militarily in the Gulf of Guinea.” See “Pirates on the other side: Maritime piracy in the Gulf of Guinea” *Polity* 29 October 2013, available at <http://m.polity.org.za/article/pirates-on-the-other-side-maritime-piracy-in-the-gulf-of-guinea-2013-10-29>, accessed on 2 December 2017.

³²² UN Org, *op cit* note 4.

³²³ UN SC Resolution 1897 paragraph 8 “affirms ... that such authorizations have been renewed only following the receipt of the letter dated 2 and 6 November 2009 conveying the consent of the TFG.” *Ibid*.

³²⁴ UN SC Resolution 1846, 1851 and 1957 *op cit* note 4.

³²⁵ The Gulf of Guinea countries have stated that they want an “African solutions for African problem” and all support should be given through the African union. See B Ki-moon, *op cit* note 39 at 17.

In accordance with the concern expressed in UN SC resolution 2018 and 2039, West and Central African countries established the Yaoundé Declaration.³²⁶ The Yaoundé Declaration is modelled after the Djibouti Code of Conduct, it is non-binding and provides recommendations and encourages states to take certain steps to repress piracy. The Yaoundé Declaration is not only applicable to the GoG but also provides a framework for Western and Central Africa and is a legal basis for co-operation between the signatory states of both regions. There are no provisions contained in the Yaoundé declaration that sets it apart from the Djibouti Code of Conduct and other similar agreements. It does not contain any provisions that specifically provide security measures for energy carrying vessels. Therefore, states have failed to take into account the entirely different nature of the crime of piracy in this region as well as the importance of energy security.

3.3 African initiatives

Africa was behind in maritime development and has been described as being sea blind, meaning it has been blind to the maritime domain and neglected its coastlines.³²⁷ The 2050 AIMS³²⁸ was developed by the AU and is in line with the UN SC 2019. It was adopted on 31st January 2014. The 2050 AIMS is a revolutionary development for Africa and it is the first African initiative of this kind; paving the road for future development

³²⁶ The code has been signed by Angola, Benin, Cameroon, Cape Verde, Chad, Congo, Cote d'Ivoire, democratic republic of Congo, Gabon, Gambia, Ghana, guinea, guinea Bissau, equatorial guinea, Liberia, Mali, Niger, Nigeria, Senegal, sierra, Leone, Sao tome, Principe and Togo.

³²⁷ Institute for Security Studies available at <https://issafrica.org/iss-today/from-missed-opportunity-to-oceans-of-prosperity>, accessed on 2 December 2017.

³²⁸ According to Stockbrueger, 2050 AIMS “is one of the first true African effort to reclaim the continents maritime security agenda and to move it beyond the international counter-piracy agenda.” See J Stockbrueger “Reclaiming the Maritime? The AU’s new maritime strategy” *Piracy-studies.org* 2 February 2014 available at <http://piracy-studies.org/reclaiming-the-maritime-the-aus-new-maritime-strategy/> accessed on 15 October 2017.

not only with regards to security and piracy but also other maritime crimes, the environment, African development and the economy. The 2050 AIMS is optimistic, but it fails to pay due regard to on land problems, such as poor governance, corruption and marginalization, which will hinder the success of its purpose.³²⁹ The 2050 AIMS is an extensive document, covering various areas of concern, yet, there are no provisions that specifically address the high number of attacks on energy carrying vessels and it fails to provide mandatory measures to bridge the vulnerabilities of these ships. The transport of energy makes up a large portion of world trade, as set out in chapter 2, and therefore, for the 2050 AIM to achieve its purpose, it needs to strengthen the vulnerabilities of energy carrying vessels and secure the transport of energy. The Luanda Declaration³³⁰ takes the first steps towards energy security and achieving the purpose of the 2050 AIMS.

The Luanda Declaration was adopted in October 2015 and is the first step in the right direction, paying much needed attention to the importance of energy security and the current lacuna in the framework. The preamble takes note of “the significance of maritime and energy security to states economic growth, development and stability” and recognizes “the existing relation between the maritime and energy security and the economic development ...” It further highlights that “maritime and energy security is essential to safeguarding peace, stability, and development of what is called “*Blue Economy*” of the Coastal states, particularly in the GoG region.”³³¹ It does not contain

³²⁹ K.L. Jacobsen, J.R. Nordby “Maritime security in the Gulf of Guinea” (2015) *Royal Danish Defence College Publishing House* available at <http://www.fak.dk/publikationer/Documents/Maritime%20Security%20in%20the%20Gulf%20of%20Guinea.pdf>, accessed on 2 December 2017.

³³⁰ The Luanda Declaration on Maritime and Energy Security (Luanda Declaration). Full text available at <http://www.embangola-can.org/pdf/Mirex%20-%20CISME%20Final%20Luanda%20Declaration%20English%209th%20Oct%202015.pdf>.

³³¹ Ibid Preamble.

any mandatory security measures but rather it reiterates the importance of developing “complementary national, regional and continental maritime strategies to achieve shared goals and objectives”³³² and “recommends that states prepare and strengthen their laws regarding maritime and energy security...”³³³ In accordance with the Luanda Declaration it is therefore up to each state to take the necessary steps to achieve maritime and energy security. However, many previous regulations have made recommendations and called on states to take positive steps. Not regarding maritime energy security but piracy in general. The problem lies in states’ inability to affect the necessary steps due to lack of resources, corruption and other inland problems. The Luanda Declaration is non-binding and therefore, although it is a major development in maritime energy security, it may not be as effective as intended. Its ineffectiveness is highlighted by the continued high number of attacks on energy carrying vessels in this region.³³⁴ As stated in an article “the 17 countries lining the GoG have poor maritime surveillance capacities and they have been trying for several years to boost cooperation to clamp down on piracy.”³³⁵

Another African initiative and the most recent³³⁶ is the adoption of the Lomé Charter.³³⁷ One of the most noteworthy developments is that The Lomé Charter is recognised as an international treaty as defined in the Vienna Convention on the Law of

³³² Ibid para 1.2.

³³³ Ibid para 2.5.

³³⁴ Refer to chapter 2.

³³⁵ AFP “African Union adopts charter on piracy, illegal fishing” *Sowetan Live* 16 October 2016 available at <https://www.sowetanlive.co.za/news/2016-10-16-african-union-adopts-charter-on-piracy-illegal-fishing/>, accessed on 2 December 2017.

³³⁶ The Lomé Charter was adopted on 15 October 2016 by heads of state and governments of the AU.

³³⁷ The African Union, *the African Charter on Maritime Security Safety and Development in Africa (Lomé Charter)*, 15 October 2016. Full text available at https://au.int/sites/default/files/treaties/33128-treaty-0060_-_lome_charter_e.pdf, accessed on 2 December 2017.

Treaties and is therefore binding on state signatories under international law.³³⁸ The fact that this charter is binding is a major improvement on the framework and was described by the Defenseweb as “ground-breaking”.³³⁹ However, the overall success of the charter rests on states to effectively implement it. The objective of the Lomé Charter is to, inter alia, “prevent and suppress national and transnational crime, including terrorism, piracy, armed robbery against ships...”³⁴⁰, to “promote and enhance cooperation in the fields of maritime domain awareness, prevention by early warning and fight against piracy, armed robbery against...”³⁴¹ and to “establish appropriate national, regional and continental institutions and ensure the implementation of appropriate policies likely to promote safety and security at sea.”³⁴² Chapter II of the charter focuses on measures to prevent and combat crimes at sea and encourages states to take steps, sets responsibilities on state parties and encourages harmonization and cooperation. Any responsibilities on states are undertaken in accordance with their own realities and therefore are not onerous. Even if they were onerous, there is no real way to enforce states compliance. Further, if a charter or convention is overly onerous, states tend to not adopt it. Only time will tell whether or not states will take the necessary steps to achieve its aims. Unfortunately, the Lomé charter does not incorporate the Luanda Declaration or other security provisions relating specifically to energy carrying vessels.

³³⁸ O Oladipo “Cooperation as a tool for enhancing state capacity to fulfill obligations of the Lomé Charter” *African Centre for the Constructive Resolution of Disputes* 12 October 2017 available at <http://www.accord.org.za/conflict-trends/cooperation-tool-enhancing-state-capacity-fulfill-obligations-lome-charter/>, accessed on 2 December 2017.

³³⁹ ISS Africa “Fulfilling the promise of the Lomé maritime summit” *Defence Web* 25 October 2016 available at http://www.defenceweb.co.za/index.php?option=com_content&view=article&id=45680:fulfilling-the-promise-of-the-lome-maritime-summit&catid=108:maritime-security&Itemid=233, accessed on 2 December 2017.

³⁴⁰ Lomé Charter *op cit* note 60, Article 3(a).

³⁴¹ *Ibid* Article 3(d)

³⁴² *Ibid* Article 3(e)

4. CONCLUSION

Regional agreements have been used to build on the international framework and fill apparent gaps, however, they have not always been successful as they are non-binding and often, states do not have sufficient resources to take the necessary steps. The above overview focused on regional agreements and industry regulations in regions most affected by piracy, that being Asia and Africa.

The ReCAAP was implemented to combat piracy in the oceans of Asia. Energy carrying vessels in this region are targeted and their fuel cargo stolen. Although, incidents involving oil theft have been far less in the past year, energy carrying vessels remain the most targeted vessel type, highlighting their vulnerabilities. Yet, there are no provisions in ReCAAP that provide for security on board energy carrying vessels. ReCAAP recognised the gap and implemented the ReCAAP Guidelines, which are focused on the prevention of oil theft to be applied to tankers by owners. The ReCAAP Guidelines focus on assessing the risk and implementing various measures to mitigate such risk. It also sets out various procedural steps for pre-sailing, during sailing, in the event of attack and post-incident reporting. Unfortunately, the Guidelines are not mandatory, and many ship owners may decide not to implement measures in order to save costs. Also, most owners are paying for insurance that covers loss from piracy and therefore they may feel that it is not necessary to incur additional expenses on preventative measures.

The Gulf of Aden and Somalia has the most extensive framework, consisting of the Djibouti Code, the BPM4 and several UN SC and IMO Resolutions. The framework

has been effective and piracy in the Gulf of Aden is currently under control.³⁴³ None of the aforementioned framework contains provisions relating specifically to energy carrying vessels but there is no evidence to show that they are specifically targeted in this zone and it is therefore not necessary. Although there are no provisions that apply specifically to energy carrying vessels, the framework in place applies when transiting this region. The Djibouti Code, UN SC and IMO Resolutions generally encourage states to take certain necessary steps and co-operate amongst each other in order to suppress piracy. On the other hand, the BMP4 provide ship-hardening mechanisms and is a hands-on approach for ship owners to assess the risk and apply necessary steps to deter pirates. The BMP4 apply to all vessel types. It is therefore up to owners of energy carrying vessels to assess the risk, taking into account inherent ship vulnerabilities, the route traveled and the value and volatility of the cargo carried, and apply appropriate hardening mechanisms.

Energy carrying vessels are at a high risk in the GoG. This region is rich in oil reserves and as a result, tankers are drawn there to transport oil. In line with UN SC resolution 2018 and 2039, which once again, merely recognises the problem of piracy in the region and encourages states to take necessary steps, GoG states established the Yaoundé Declaration. The Yaoundé declaration is similar to the Djibouti Code and in a region where energy carrying vessels are targeted, fails to provide provisions that counter the vulnerabilities of these vessels. Apart from its failure to provide for security on board

³⁴³ Some authors are of the opinion that operations put into place in the Gulf of Aden are not sustainable in the long terms and that a failure to deal with the root causes of piracy will result in its resurgence in the near future or once operations cease. This debate falls beyond the scope of this dissertation. What is important is that the framework in place has been successful, despite on land problems. Of course on land problems cannot be ignored but they fall within states sovereignty and not much can be done by other states. Also, change on land could take years and in the interim, a sufficient framework needs to be in place.

energy carrying vessels, it also fails to implement any mandatory provisions to suppress piracy. States are once again merely encouraged to take certain steps and cooperate amongst each other. The GoG Guidelines read with the BMP4, applies the BMP4 to the GoG bridging any gaps where there are differences between the two regions. Similarly, to the BMP4, this provides a hands-on approach for ship owners to protect their vessels. However, they are not mandatory and ship owners may not want to incur costs implementing the recommended measures. The GoG Guidelines read with the BMP4 should be compulsory in this region as it is clear that state security is insufficient.

African initiatives include the 2050 AIMS, Luanda Declaration and Lomé Charter. The 2050 AIMS is the first truly African initiative of its type and has paved the way for great development by African countries. Both the Luanda Declaration and Lomé Charter were created in accordance with the 2050 AIMS. The most notable one is the Luanda Declaration, its primary focus being maritime and energy security. The Luanda Declaration recognises the interconnectedness between *maritime security* and *energy security* and provides a framework for states to take the necessary steps to achieve maritime and energy security. Although this is an immense step in the right direction, it is non-binding and states are under no obligation to take steps as set out in the Declaration.

In conclusion, the current regional framework in place in Asia and Africa is lacking binding laws that, firstly to ensure the states implement national legislation that is adequate to protect energy carrying vessels.³⁴⁴ Secondly, set out mandatory provisions on states, ship owners and other actors that bridge the vulnerabilities of energy carrying

³⁴⁴ As stated in the previous chapter, there is no international court or tribunal empowered to deal with the crime of piracy and pirates are subject to the domestic laws of the state exercising jurisdiction. Therefore, states must have adequate domestic laws.

vessels. Thirdly, to coordinate various anti-piracy activities, including patrolling, training and escort's through high-risk areas. Provisions recommending the aforesaid security measure can be found in various codes, declarations and resolutions. They are however not specific to energy carrying vessels. Further, they are not mandatory and therefore states have failed to take the necessary steps and effectively implement them in relation to energy carrying vessels. As a result, energy carrying vessels remain the most targeted vessel type, endangering the environment, the lives of crew and the economy.

CHAPTER 5: CONCLUSION

1. INTRODUCTION

This dissertation provided a study of the legal framework in place to suppress piracy on board energy carrying vessels and aimed to establish whether the current framework is sufficient, taking into account the vital role of energy to all societies and the alarmingly high number of incidents involving energy carrying vessels. This chapter will provide an overview of this dissertation, highlighting the aim and key findings. It will also set out recommendations for future studies. Finally, this chapter will conclude in finding that the current framework is insufficient.

2. SUMMARY AND KEY FINDINGS

There are various different Conventions and Codes on piracy that make up the legal framework. The maritime security framework is found in three main conventions, UNCLOS, SUA and SOLAS. UNCLOS Articles 100 to 110 contains dedicated provisions on piracy. SUA is an anti-terrorist convention and SOLAS is primarily focused on safety at sea. However, each has provisions can be used to suppress acts of piracy. The international framework is not vessel specific but rather applies to energy carrying vessels if the requirements of each instrument are met. UNCLOS provides a definition for piracy and confers on states universal jurisdiction whereas SUA sets out various criminal acts broad enough to include piratical acts. UNCLOS and SUA establishes jurisdiction for states; jurisdiction differs in each. UNCLOS establishes universal jurisdiction as opposed to SUA that requires a nexus between the state

exercising jurisdiction and the crime. States are given certain rights to assist with bringing criminals to justice, which criminals are subject to the domestic laws of the state exercising jurisdiction. SOLAS contains certain security provisions and sets out various responsibilities on states that are aimed to assist with security. Further, it gives effect to the ISPS Code. In this framework, only SUA Article 3*bis* read with the SUA PROT Protocol pays regard to the vulnerabilities of energy structures and vessels. This article does not, however, apply to piracy, as the purpose of the crime is to intimidate a population, a government or other body. It was therefore established that there was no international framework that applied specifically to energy carrying vessels and the general framework is not sufficient as it fails to take into account the importance of energy, the possible consequences of attacks on the economy, not only on direct participants but also on end users, the safety of crew and the environment as well as the vulnerabilities of energy carrying vessels. The inadequacy of the framework is emphasised by the high number of incidents involving energy carrying vessels.

The regional framework consisting of inter-state regional agreements, codes and industry regulations provides more for interstate relations and encourages states to cooperate and take certain steps. The high number of incidents on energy carrying vessels resulted in more tanker specific guidelines being issued. The Luanda Declaration is focused on energy and maritime security. On a regional and industry level, a framework relating specifically to energy carrying vessels exists, however, from the high number of incidents it is evident that it has not been effective. The Luanda Declaration merely paves the way, calling on states to take steps to ensure energy and maritime security. This Declaration also demonstrates the need to address the research question advanced in this

dissertation. In line with the Luanda Declaration states have to implement the framework to achieve the end goal. The Luanda Declaration and guidelines relating to energy carrying vessels are non-binding on both states and ship owners and therefore the effectiveness of these instruments depends on states and ship owners. This is not ideal, as states have no external pressure and time frame to deal with on land issues, such as corruption and lack of resources, to enable them to implement the Luanda Declaration, as well as other declarations that also apply to energy carrying vessels although not specifically. Ship owners are under no obligation to implement the guidelines, which are often costly to implement. The non-binding nature of regional instruments results in poor implementations, which in turn causes the framework to be ineffective.

3. RECOMMENDATIONS

From the previous chapters it is evident that there are several instruments applicable to energy carrying vessels. However, considering the high number of attacks on energy carrying vessels it is clear that the framework is insufficient. Recognising that the framework is currently insufficient to ensure security on board energy carrying vessels, there are several recommendations that the writer believes would improve security. Firstly, protective measures, such as vessel-hardening tactics, need to be mandatory on-board energy carrying vessels. Currently, vessel hardening tactics are not mandatory and ship owners often elect to save costs by not installing hardening mechanisms, especially because they are already paying the cost of insurance which will cover their loss in any event. This fails to take into account the vast collateral damage caused by attacks, such as the risk to the economy, the environment and the safety of the crew. Hardening tactics will help decrease the vulnerabilities of energy carrying vessels,

making it harder for pirates to attack. Secondly, guidelines relating to security should be mandatory for energy carrying vessels. The ReCAAP Guidelines are the most appropriate example of guidelines that should be enforced. Mandatory provisions will ensure that the required steps are taken, which will bridge the vulnerabilities of energy carrying vessels. As set out in chapter 2, energy carrying vessels are vulnerable and it is clear that the current framework does not take those vulnerabilities into account. Thirdly, the use of on board security guards should be encouraged. Guards do not necessarily have to be armed with deadly weapons but can make use of rubber bullets, pepper spray bullets and other effective deterrents. Lastly, because of the geographic location of pirate high-risk areas, which tend to be in close proximity of several states territorial waters, it is essential to have cross boarder pursuit agreements in place. Unfortunately, pirates are able to escape relatively easily by sailing into neighbouring states territorial waters. Cross boarder agreements could be difficult for states to agree on as it interferes with states sovereignty. However, it could be agreed that it is allowed in certain circumstances and the state is notified immediately and allowed to take over as seen as they reach the parties.

The Luanda Declaration is the most noteworthy convention as it focuses on maritime energy security. Any sequel study to this dissertation should set out the steps that need to be taken to achieve its objectives and canvass the steps that have been taken by states. It should also cover the effectiveness of such steps to achieving energy and maritime security. It is important to recognise the states that take positive steps and the steps that they have taken to allow other states to learn and follow from them.

4. CONCLUSION

The current legal framework in place is not sufficient to establish maritime energy security. At an international level, energy carrying vessels are subject to the legal framework applicable to all vessel types and there are no provisions that apply specifically to energy carrying vessels. At a regional and industry level, there are various instruments that apply specifically to energy carrying vessels, they are however not mandatory and as a result have been ineffective. Energy carrying vessels are manifestly distinguishable from other vessels. They travel set routes through chokepoints and narrow straits that often cannot be avoided due to the geographical location of energy sources. Many of the chokepoints and narrow straits are affected by piracy as ships are forced to slow down and pirates are able to use this to their advantage. Energy carrying vessels are also more vulnerable. They are huge, slow moving, have few crew and low to the water when fully laden. Energy carrying vessels carry some of the most precious cargo, as societies depend on energy to grow their economy and develop. Energy sources are a desirable cargo to pirates, as they can use it to further their operations or sell it on the black market. Due to the physical and economic nature of energy, the effects of attacks tend to be amplified.³⁴⁵ This dissertation contends that energy carrying vessels require a regime that takes into account the nature and value of energy and the vulnerabilities of energy carrying vessels and the frequency of incidents involving energy carrying vessels further evidenced this.

³⁴⁵ See chapter 2 for explanation.

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03 June 2016

Ms Theone Theodorou (212513036)
School of Law
Howard College Campus

Dear Ms Theodorou,

Protocol reference number: HSS/0755/016M

Project title: Security on Board Energy Carrying Vessels: An analysis of International and Regional Regulatory measure

Full Approval – No Risk / Exempt Application

In response to your application received on 01 June 2016, the Humanities & Social Sciences Research Ethics Committee has considered the abovementioned application and the protocol have been granted **FULL APPROVAL**.

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment/modification prior to its implementation. In case you have further queries, please quote the above reference number.

PLEASE NOTE: Research data should be securely stored in the discipline/department for a period of 5 years.

The ethical clearance certificate is only valid for a period of 3 years from the date of issue. Thereafter Recertification must be applied for on an annual basis.

I take this opportunity of wishing you everything of the best with your study.

Yours faithfully



.....
Dr Shenuka Singh (Chair)

/ms

Cc Supervisor: Vishal Surbun
Cc Academic Leader Research: Dr Shannon Bosch
Cc School Administrator: Mr Pradeep Ramsewak / Ms Robynne Louw

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