ΑΚΑΔΗΜΙΑ ΕΜΠΟΡΙΚΟΥ ΝΑΥΤΙΚΟΥ
# Α.Ε.Ν ΜΑΚΕΔΟΝΙΑΣ

ΠΤΥΧΙΑΚΗ ΕΡΓΑΣΙΑ

SECURITY THREATS
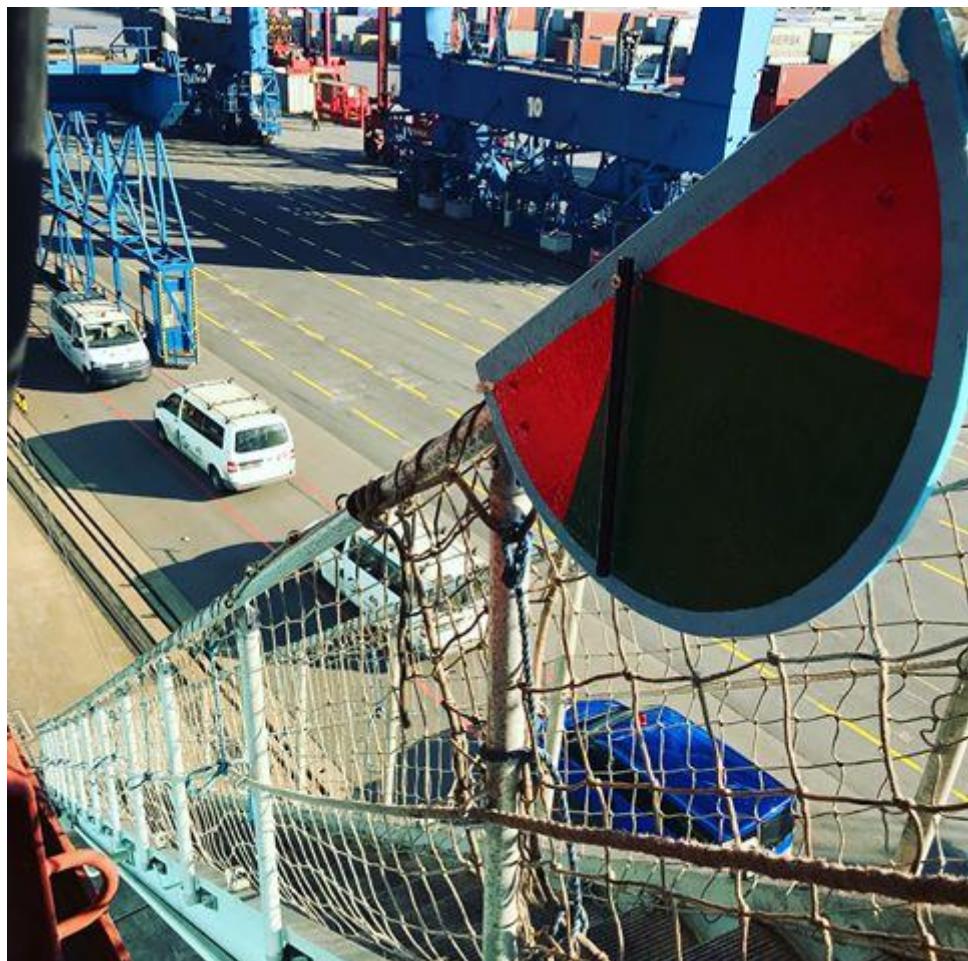
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Α.Γ.Μ: 3657

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Α/Α	Ονοματεπώνυμο	Ειδικότητα	Αξιολόγηση	Υπογραφή
1				
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ΤΕΛΙΚΗ ΑΞΙΟΛΟΓΗΣΗ				

Ο ΔΙΕΥΘΥΝΤΗΣ ΣΧΟΛΗΣ:

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Abstract

Security threats and measures to counter them have been in the spotlight ever since the beginning of the organized transportation of cargos by merchant vessels. Results of this activity are the numerous International Regulations and Codes such as SOLAS and ISPS CODE which all aim in the sufficient handling of threats as well as the preventive measures to avoid incidents. Major Security threats include Piracy and armed robbery, Stowaways, Terrorism and Maritime. Each threat is analyzed to its individual components with common denominators being the prevention measures and the actions required to counter possible incidents. Although Measures for prevention and handling of such incidents may vary upon the type of threat, education and training of the crew members is always a reliable solution. Furthermore the costs of the Maritime Threats are taken into consideration. Financial costs which include property of the vessel, cargo and various prevention measures are thoroughly analyzed in order to determine how much damage have security threats inflicted in the Maritime industry. Last but not least interviews were conducted in order to define how officers of different rank comprehend and respond to maritime threats as well as first hand insight of how security threats affect the vessels.

Maritime Security Historic Background

The International Maritime Organization, as the United Nations' regulatory body responsible for the safety of life at sea and environmental protection, has adopted a great number of conventions and regulations since its inception in 1959. Due to the new security challenges imposed by some devastating terrorist acts around the World, the Organization had to respond swiftly and appropriately. To deal with these maritime security threats effectively, IMO has as an integral part of its mandate, the duty to make travel and transport by sea as safe and secure as possible.

The hijacking of the Italian cruise ship Achille Lauro, on 7 October 1985, was a significant actual terrorist act. Following that incident, IMO adopted resolution A.584(14) on Measures to prevent unlawful acts which threaten the safety of ships and the security of their passengers and crews. Subsequently in 1986, taking also into account the request of the United Nations General Assembly to study the problem of terrorism on board ships and to make recommendations on appropriate measures, the Organization issued MSC/Circ.443 on measures to prevent unlawful acts against passengers and crews on board ships. Other noteworthy maritime security incidents:

• The hijacking of the SS Santa Maria (cruise ship), in La Guaira (Venezuela), 23 January 1961

• The hijacking of the Anzoategui (cargo ship), off the Venezuelan coast, 12 February 1963

• The hijacking of the SS Columbia Eagle (cargo ship), 14 March 1970

• The hijacking of MV Avrasya (ferry), in the port of Trabzon in Turkey, 16 January 1996

• The attack on the USS Cole (Navy ship), in the port of Aden in Yemen, 10 June 2000

• The attack on the SS Limburg (oil tanker), in the Gulf of Aden, off the coast of Yemen, 6 October 2002

• The attack on the SuperFerry 14 (ferry), in the Philippines, 27 February 2004

• The attack on the M/V M. Star (VLCC oil tanker), in the Persian Gulf, 27 July 2010 The Convention for the Suppression of Unlawful Acts against the Safety of Maritime Navigation 1988 (SUA Convention, including the 1988 and 2005 Protocols).

Pursuant to the Achille Lauro incident the Organization continued working towards the development and adoption of conventions and security regulations and adopted, in March 1988, the Convention for the Suppression of Unlawful Acts against the Safety of Maritime Navigation (SUA). The Convention, which is a legal instrument, extends the provisions to unlawful acts against fixed platforms located on the Continental Shelf, through the Protocol for the Suppression of Unlawful Acts against the Safety of Fixed Platforms located on the Continental Shelf, 1988. The SUA Convention ensures that appropriate action is taken against persons committing unlawful acts against ships, including the seizure of ships by force; acts of violence against persons on board ships; and the placing of devices on board a ship which are likely to destroy or damage it. The Convention provides for application of punishment or extradition of persons who commit or have allegedly committed offences specified in the treaty. Currently 196 states ratified the 1988 Convention, corresponding to 94% of the world merchant shipping tonnage, and 154 states have ratified the 1988 Protocol

The tragic events of September 11 (2001) in the United States of America raised the question of the vulnerability of ships and, in particular, the possibility of shipping being used as a vector of terrorist activity. Consequently, in November 2001 IMO Assembly resolution A.924(22) on the Review of measures and procedures to prevent acts of terrorism which threaten the security of passengers and crews and the safety of ships, called for an assessment of the existing international legal and technical measures to prevent and suppress terrorist acts against ships at sea and in port, and to improve security aboard and ashore. The aim was to reduce risks to vessels and their cargo, passengers, crews, port personnel on board ships and in port areas, and also to enhance the overall security of ships and in ports, in order to manage and minimize the possibility of shipping becoming a target of international terrorism.

As a result of the adoption of resolution A.924(22), a Diplomatic Conference on Maritime Security (2002 SOLAS Conference), was held at the London headquarters of IMO, from 9 to 13 December 2002. The conference was attended by 109 Contracting Governments to the 1974 SOLAS Convention, observers from two IMO Member States and observers from the two IMO Associate Members. United Nations specialized agencies, intergovernmental organizations and non-governmental international organizations were also represented at the Conference as observers. The 2002 SOLAS Conference adopted a number of amendments to the International Convention for the Safety of Life at Sea (SOLAS), 1974, as amended, the most far-reaching of which enshrined the new International Ship and Port Facility Security (ISPS) Code. The ISPS Code, which is divided into a mandatory Part A and a recommendatory Part B, contains detailed security-related requirements for Governments, port authorities and shipping companies in Part A and recommendations on how to implement those requirements in Part B. The Conference also adopted a series of resolutions designed to add weight to the amendments and

encourage the application of the measures to ships and port facilities not covered by the Code.

Since the adoption of the ISPS Code, the IMO has adopted further guidance for its Member States and the Maritime Industry, with a view to safeguarding the effective implementation of the Code. A consolidated version of all the relevant guidance adopted by IMO was subsequently developed in the form of the IMO Guide to Maritime Security and the ISPS Code. The IMO Guide to Maritime Security and the ISPS Code (2012 Edition), The IMO published the first (2012) edition of the Guide to Maritime Security and the ISPS Code, to assist Member Governments with the implementation of the ISPS Code. Since 2012, under the Organization's Global Maritime Security Integrated Technical Co-operation Program (ITCP), the Sub-Division for Maritime Security and Facilitation (MSF) develops and implements a comprehensive global technical cooperation program with the ISPS Code Guide as a basis. The Guide focuses on assisting States in the implementation, verification, compliance with, and enforcement of, the provisions of the IMO maritime security measures, including the ISPS Code and the SOLAS chapter XI-2, counter-piracy initiatives, the SUA Convention and Long-range Identification and Tracking (LRIT)

1. Security Threats

Terrorism threat from the maritime domain may come in various forms. For example, weapons or explosives may be concealed in containers, ships may be used as weapons to destroy critical infrastructure, or terrorists may illegally cross the borders to launch attacks in the homeland. Terrorists have a wide array of options, which could culminate into a catastrophic attack. They have already shown their capacity to operate in open seas successfully for other non-terrorism purposes: piracy, illegal smuggling of contraband, and illegal human trafficking across the borders. Therefore, they may utilize the expertise in other forms of maritime crimes that has accumulated over the years to launch more damaging attacks exploiting vulnerabilities in the global maritime system. Accordingly, increased capability to respond to each terrorist activity may prove to be very valuable, and require cooperation between nations.

1.1 Piracy And Armed Robbery Against Ship

Although historically not intertwined with terrorism, piracy is reemerging as a serious threat to impede conduct of global business. In 2003, there were 445 attacks in which 21 crew members were killed, 71 reported missing, and 359 were taken hostage . The number of attacks dropped to 325 in 2004 with an increase in the death toll from 21 the previous year to 30. Actual figures may be far more disturbing. Shipping companies tend to underreport the incidents due to fears of increasing insurance premiums and lengthy investigations that may result in loss of reputation. As Singapore's Deputy Prime Minister, Tony Tan, said, "piracy is entering a new phase; recent attacks have been conducted with almost military precision. The perpetrators are well-trained, and have well laid out plans." Annual cost of lost cargo has risen to $16 billion, mainly due to piracy, truck hijacking, and theft around the ports. Pirates

have excelled in hijacking ships over the years. Once the ship is hijacked, turning it into a phantom ship, erasing its original identity, is relatively easy . The ships are then known to be painted at remote docks and given a completely new identity. A relatively simple way to do this is getting a new registry by changing flags in "flag-of-convenience" countries . The fleets of these countries are growing. Registration standards in these countries are relatively lax and there are no requirements on the nationality of crew members. Most "flag-of-convenience" ships are relatively unprotected against piracy. In 2003, 63% of all losses in absolute tonnage were accounted for by just 13 FOC registers. These characteristics of flag-of-convenience ships render them and their cargo high risk.

 There is minimal law enforcement in international waters that pirates are known to be operating. Most piracy incidents take place in the Far East, in regions such as Indonesia, Malacca Straits, Malaysia, Singapore Straits, and South China Sea. Other geographical locations with reported cases include India, Philippines, Bangladesh, Gulf of Aden, Colombia, Venezuela, Vietnam, Red Sea, and Dominican Republic. Most of these countries have minimal resources for maritime patrolling and long coastlines, granting the freedom of looting to pirates. Corruption among maritime officials also adds to the complexity of law enforcement in these waters. Modern pirates use technology for vessel surveillance, automatic weapons, and motorized boats to hijack ships with valuable cargo. Investment in this technology is easily justified with potential loots that range from $8 million to $200 million per vessel. This is also a good financing source for terrorist operations and a catalyst in developing the interconnection between piracy and terrorism.

There is minimal cooperation between nations to combat piracy, and each country is responsible to enforce the law in their territorial waters. Pirates have a good understanding of their operational environment. They usually elude maritime officials by crossing national sea boundaries and exploit vulnerabilities due to lack of information sharing and international cooperation. The Malaysian Maritime Enforcement Center stated: "Under no circumstances would we intrude into each other's territory. If we chase a ship and it runs into the other side, we let the authorities there handle it." Therefore, penalizing maritime criminals is quite difficult. It requires arrest authority unlimited by national boundaries and willingness of authorities to enforce law in the maritime domain. Maritime piracy imposes both human costs and economic costs on maritime shipping.

Human costs come in the form not only of seafarers being hijacked and held hostage, but injury during attacks and even death. While the number of seafarers held hostage in recent years has declined, many seafarers are still taken and held hostage and/or remain at risk from significant harm. Consistent with the rise of Nigeria as an increasingly dangerous hot spot, 28 of the 30 seafarers kidnapped in January-June 2013 were in Nigeria, not in Somalia (the remaining two were in Togo). Additionally, the single death to date in 2013 occurred in Nigeria.

Number of pirate attacks against ships worldwide from 2009 to 2017
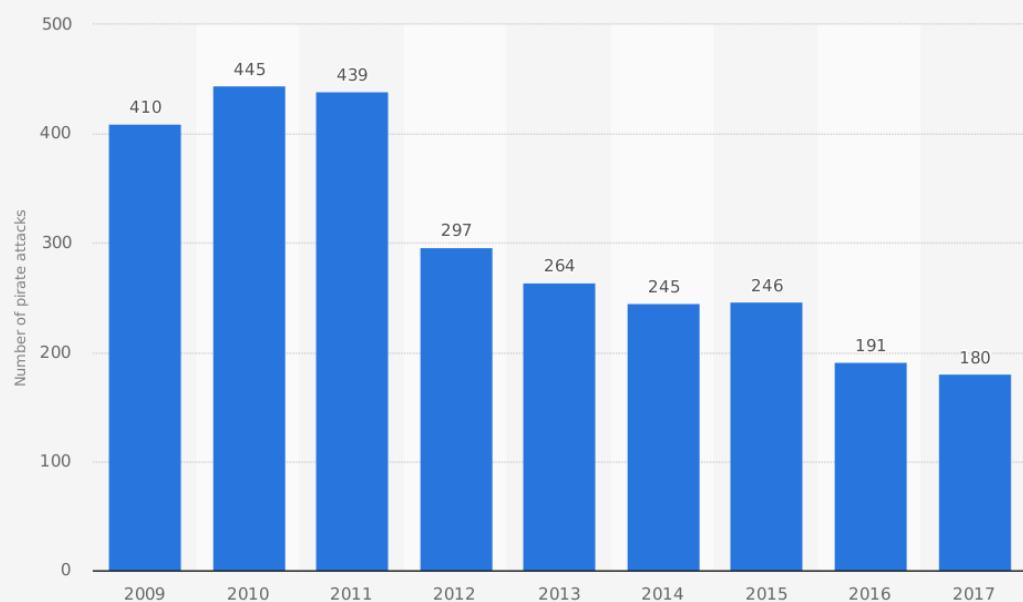
Sources
ICC; ICC IMB; Hellenic Shipping News
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Additional Information:
Worldwide; ICC IMB
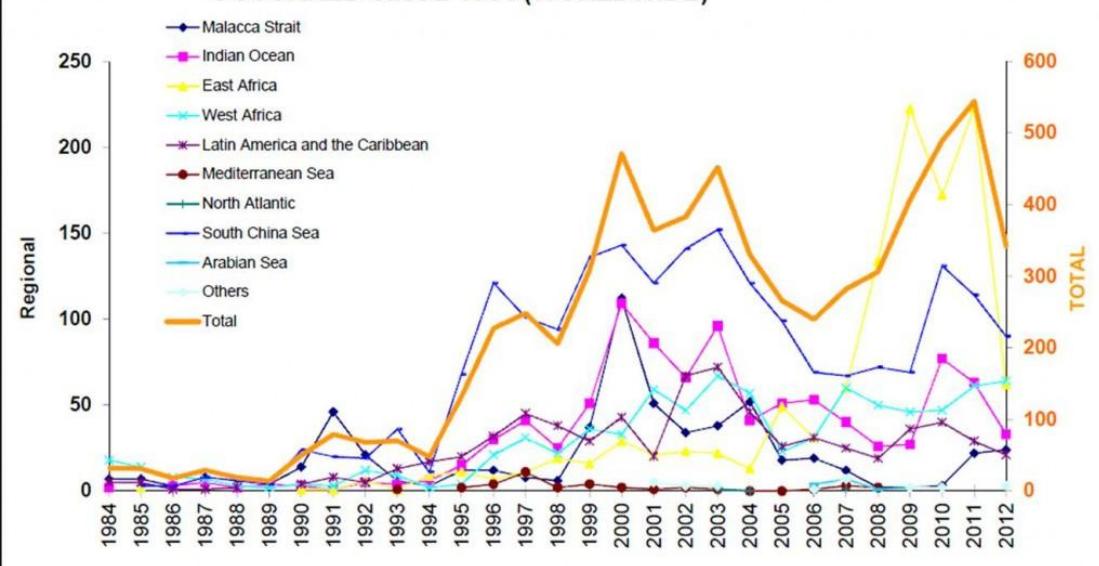
Εικόνα 1 Source ICC: IMB Hellenic Shipping News

It is also important to note that the type of weapons used varies by location. Guns were used in eight incidents in Somalia, eighteen in Nigeria, and in six in the

Malacca region. Knives (typically less lethal) remain the weapon of choice in Indonesia, Malacca and Malaysia, used in twenty-five of the attacks in this part of the world.

1.1.1 Costs Of Piracy

The harm to seafarers is not limited to the attack itself. Being hijacked and held hostage, or injured during a pirate attack has, in many cases, led to symptoms closely resembling post-traumatic stress disorder (PTSD) among affected seafarers, particularly among those who have been held hostage for any length of time. These symptoms can be of some duration. At the same time, the human costs are not limited to the seafarers alone. If a crewmember becomes so traumatized by an attack or from having been held hostage he or she may not be willing to sail again; absent other job opportunities or sources of financial support, their families may suffer. Additionally, not all ransoms are paid by shipping or insurance companies; sometimes families have had to contribute at a significant financial burden to them..

Examples of economic costs include transiting at increased speeds, the costs of military guards and equipment, insurance and labor costs, ransoms, and the costs of operating and maintaining the international task forces. There was considerable consternation when the cost figures were released in 2011 – up until then, most everyone who had thought at all about piracy believed the problem was restricted to a minor segment of the global shipping industry; few thought about calculating nearly all costs associated with maritime piracy or realized they could amount to more than $6.5 billion globally, with the estimated cost per ship transit approximately $134,000.

While many of these costs are associated directly with protection against piracy in the Horn of Africa, many of them will need to continue despite the decline in attacks committed by Somali pirates. Specifically, the non-lethal means of deterring and preventing piracy (i.e., not dependent on armed guards or the international task forces) should be adopted in the Gulf of Guinea and the Malacca region. And the case is already being made that if shipping companies no longer use armed guards, or if the international task forces are withdrawn from the Horn of Africa, Somali piracy may again increase.

1.1.2 IMO And Piracy

The threat posed piracy and armed robbery against ships has been on the IMO's agenda since the early 1980s. In the late 1990s and the early 2000s the focus was on the South China Sea and the Straits of Malacca and Singapore. More recently, since 2005, IMO has focused on piracy off the coast of Somalia, in the Gulf of Aden and the wider Indian Ocean, and is currently implementing a strategy for enhancing maritime security in West and Central Africa, in line with the region's maritime security agreements. The Organization, with support and cooperation from the shipping industry, has through the years developed and adopted a number of

antipiracy measures, which have contributed towards the mitigation of the negative impact posed by piracy worldwide.

IMO issues incident reports on piracy and armed robbery against ships using data submitted by Member Governments and appropriate international organizations, with the first reports being published in 1982. Since July 2002, IMO's monthly and annual piracy and armed robbery reports classify separately any reported acts or attempted acts of piracy (international waters) and armed robbery against ships (territorial waters).

The reports, which include among other things, the names and a description of ships attacked, position and date/time of incidents, consequences to the crew, ship or cargo, and actions taken by the crew and coastal authorities, are circulated monthly, followed by a comprehensive annual report, published at the beginning of the second quarter of the subsequent year. Additional information regarding acts of piracy and armed robbery against ships is publicly available (subject to registration) in IMO's Piracy and Armed Robbery module within the Organization's Global Integrated Shipping Information System (GISIS)

1.1.3 Regional Cooperation

Regional cooperation among States has an important role to play in solving the problem of piracy and armed robbery against ships, as evidenced by the success of the regional anti-piracy and armed robbery agreement and related operations in the Straits of Malacca and Singapore, to which IMO provided and continues to provide assistance, throughout the development and implementation processes.

The Regional Cooperation Agreement on Combating Piracy and Armed Robbery against ships in Asia (RECAAP) which was concluded in November 2004 by 16 countries in Asia, entered into force in September 2006 and encompasses the RECAAP Information Sharing Centre (ISC) for facilitating the sharing of piracy and armed robbery related information, is a good model of a cohesive and successful regional cooperation structure, which IMO seeks to replicate elsewhere around the World.

In recent years, particular focus has been placed on piracy and armed robbery at sea in the Gulf of Aden and the wider Western Indian Ocean, as well as on the Gulf of Guinea in West Africa. While progress has been made recently in those regions to eradicate piracy, armed robbery and other illicit maritime activities, ships are urged to remain vigilant when navigating through those regions, since the threat of piracy is not "eliminated", noting in particular the increasingly fragile situation ashore in Somalia.

1.1.4 Ways To Protect The Ship

In case of piracy or armed robbery incident, it is of great importance to protect the ship in an effective and risk-free way. Listed below are eight ways to protect a ship:

• **Armed guards**
These have become standard for many ships sailing through Somali waters in 2013. A large ship now typically sails with four guards. The industry has been dominated by British firms and guards who have had careers in the military, particularly highly experienced former Royal Marines who have been keen to cash in on their skills.

• **Sound guns**
A sonic weapon called a Long Range Acoustic Device (LRAD), similar to devices used for crowd control, has been fitted to several ships. The LRAD emits an intolerable beam of sound to drive off attackers. Operators say the device can be hard to focus on a fast-moving skiff.

• **Lasers**
In 2011 the British arms firm BAE Systems developed an anti-pirate laser to dazzle approaching pirates. The firm said the green beam was strong enough to make it impossible to aim weapons into its path and was effective at up to a mile but would not permanently damage eyesight.

• **Water cannons**
High-pressure cannons or hoses spraying from the ship are designed to blow away pirates as they try to scale the ship's sides, or to swamp their tiny craft as they approach. They can be fitted with remote controls and operated from safety if the pirates open fire.

• **Razor wire, cages and electric fences**
Ships have bolstered physical defenses with layers of barriers, wire and cages in a process called "hardening". The defenses are designed to stop pirates getting aboard and, if they do, to stop them reaching the crew.

• **Boat traps**
Nets or wires can be used to snare and entangle the propellers of pirate skiffs as they approach.

• **Foam**

Slippery anti-traction foam can be sprayed over a ship's sides or decks to hamper pirates as they try to climb aboard.

• Foul-smelling liquid

Devices shoot slicks of foul-smelling liquid which can cause a burning sensation on the skin, causing pirates to break off their attack or jump in the water to clean themselves, according to designers.

1.2 Stowaways

The Convention on Facilitation of International Maritime Traffic, 1965, as amended, (The FAL Convention), defines stowaway as "A person who is secreted on a ship, or in cargo which is subsequently loaded on the ship, without the consent of the ship-owner or the Master or any other responsible person and who is detected on board the ship after it has departed from a port, or in the cargo while unloading it in the port of arrival, and is reported as a stowaway by the master to the appropriate authorities. Unnoticed by the Master, the crew, port and customs authorities, stowaways may gain access to the ship with or without the assistance of port personnel. Once on board the ship stowaways hide in empty containers, cargo holds, tanks, tunnels, behind false panels, stores, accommodation area, engine rooms, void spaces, cranes, chain lockers. The presence of stowaways on board ships may bring serious consequences for ships and, by extension, to the shipping industry as a whole; the ship could be delayed in port; the repatriation of stowaways can be a very complex and costly procedure involving masters, ship-owners, port authorities and agents; and the life of stowaways could be endangered as they may spend several days hidden, with the risk of suffocation and without any water / provisions.

1.2.1 Classification Of Stowaways

Refugees

A refugee is a person forced to escape their country of domicile, attempting the escape for reasons of war, civil unrest or religious persecution. The term forced is used because in this case they have no choice or a really bad choice for fear of their life or of the state of the country. Recently, there has been a mass exodus of people from certain countries who fear persecution and hence try to make their way out of the country any which way and under dire circumstances

Economic Migrants

This category may consist of people who wish to leave their country of domicile for the sole purpose of leading a life of higher quality in another country. For example, it is seen in many developed countries that a lot of daily workers originally belong to another nation

Asylum Seekers

This is the case where an individual seeks asylum in a country without the hovering fear of repatriation. The idea is to avoid persecution in their home country which they may be trying to avoid because of political reasons such as an unwanted uprising against the Government or something along those lines

Illegal Immigrants

Illegal immigrants want to forcibly make their way into another country without being conspicuous to the border control and immigration authorities for reasons that might be undefined per se. It could range from any of the above. The idea here is that the stowaway has chosen to enter the country without adhering to the proper channels of entry into a country, undetected. Stowaways are usually treated as illegal immigrants at the port of disembarkation in accordance with the legislation of the countries involved. However, stowaways whop request asylum should be treated in accordance with the relevant UN Conventions

Criminals

This is the worst case and the most worrying of all for the simple fact that the person might have chosen to be a stowaway for engaging in unlawful activities. They could be involved with the transportation o drugs or other such illegal activities. These stowaways might be in groups and pose a threat to the ship's crew sometimes seeking to make profit through obscene demands

1.2.2 Dangerous Regions

Certain regions have become high-risk because of dramatic events such as civil war or natural disaster. Economic downturn may also increase the number of stowaway attempts. The Master and the Ship-owner must be aware of changes in the threat of stowaways and this means a continual monitoring of current events in the ships' trading areas. A stowaway can also be an individual associated with known terrorist organizations, trying to circumvent normal travel security in cruise-ports and air-ports. The reasons for stowing away may vary, e.g. political, economic, and criminal or adventure seeking and it is therefore difficult to accurately predict which ports are considered particularly high risk at any given time. Never-the-less, there are certain geographical areas which generally are considered high risk. These include Africa, parts of Central America, Colombia, the Dominican Republic and Venezuela. The Master should always be aware of regional hot spots for stowaways and put in place measures to prevent stowaways gaining access to the ship when operating in high risk areas.

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Number of stowaways by nationality
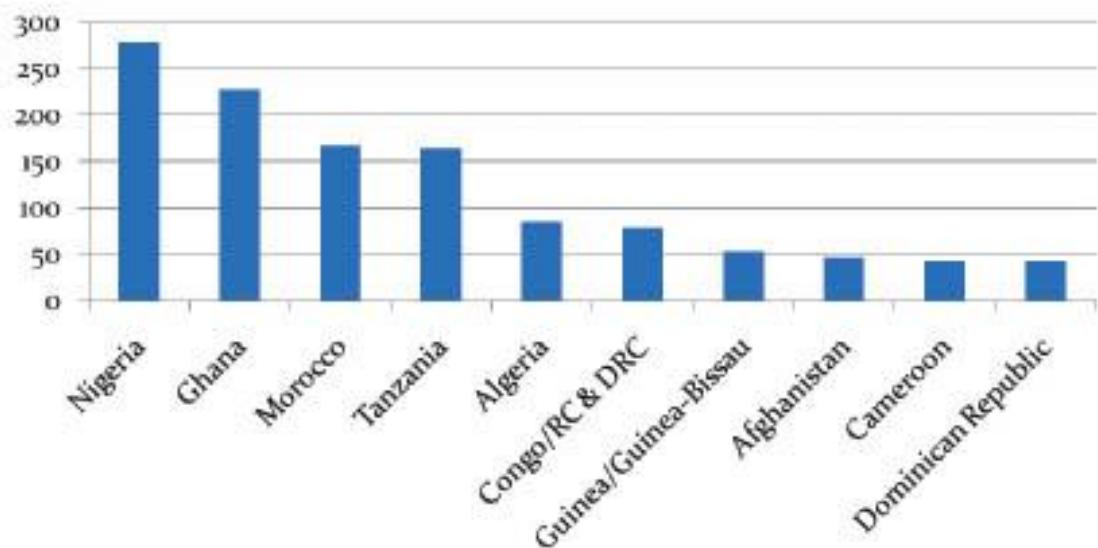
Ports of embarkation
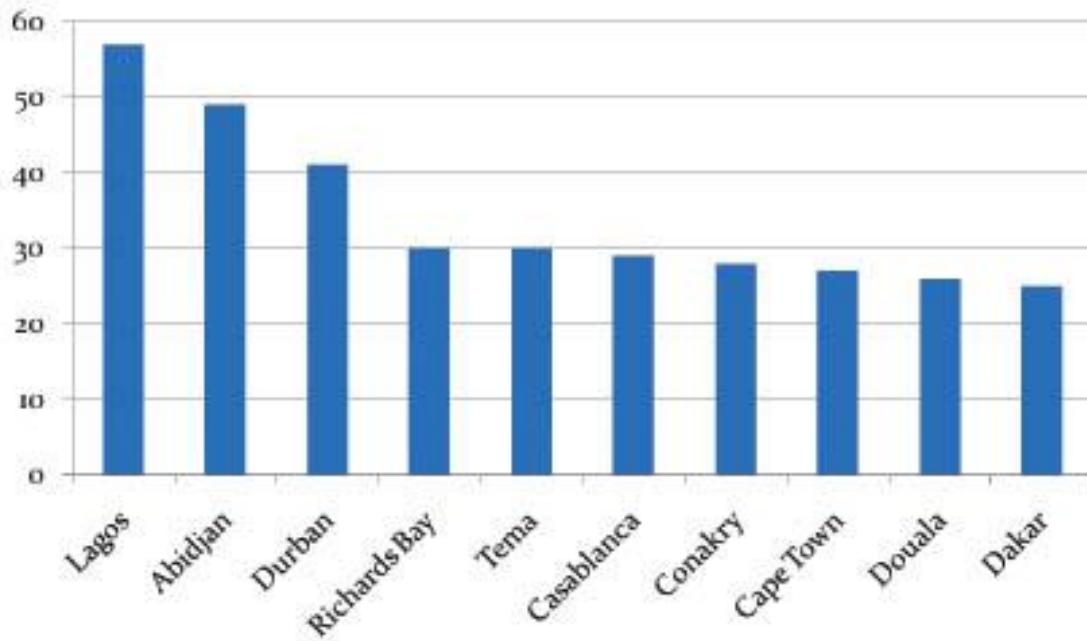
Risk Assessment

Risk Assessment is one of the functional requirements of the International Ship and Port Facility Security (ISPS) Code is preventing unauthorized access to ships. The ISPS Code requires a ship security assessment to be conducted which should consider all possible threats of unauthorized access, including presence of stowaways.

1.2.3 Prevention And Search

The core strategy is to ensure that no unauthorized personnel are able to gain access to the ship, and that all those who have been authorized to board disembark before sailing. Engaging guards and/or a maritime security officer may be necessary depending on the potential risk of stowaways in the particular port. If the threat is considerable, the costs involved could well be justified. Prevention may be far less than the expenses and difficulties involved with repatriation of stowaways which usually involves moving reluctant people across different continents. Procedures should be made to ensure that there is a watchman on duty at every access point, which have to remain unlocked whilst the vessel is in port and that this watchman is familiar with the procedures when visitors, repairmen, stevedores etc. wish to come on board. The vessel's local agent, the Master and crew should be vigilant in assessing and preventing collision between the local watchman and visitor who is assisted in gaining access on board the vessel by circumvention of proper procedure.

Physical access control and random patrols, with particular focus on people located in unusual areas, should supplement the access watches. The value of random patrols

can be significantly increased if all crew-members report any abnormal activity. A conscientious approach to locking and securing access points does restrict stowaways access. It is therefore prudent to lock all doors, rooms and holds without hampering cargo operations. Locking the vessels access points should be a matter of routine. Where locks are not considered appropriate, tamper-proof or wire seals can be used, as any broken seals would indicate that an entry has been made. In order to avoid detection, stowaways often hideaway shortly before the vessel leaves port. An extensive search of the ship should therefore be undertaken shortly before the vessel sails. Stowaways unable to gain entrance from the accommodation ladder due to gangway watch they often attempt to embark the vessel in various ways Some of the most common techniques, but definitely not the only ones, are:

a) Climbing mooring ropes,

b) Climbing anchor chain,

c) Hiding inside empty containers

d) Boarding the vessel posing as stevedores while showing fake identification card and documents

e) Climbing from the sea using hooks

f) Hiding inside loaded containers or any other cargo that is transferred in packages

At some ports stevedores are supposed to wear special clothing with branded overalls and helmets. Bear in mind that stowaways may have access to these overalls and helmets too. All should be questioned and asked to produce appropriate identifications

Owing to the vast number of potential hiding places, a practical solution would be to divide the vessel into separate search areas e.g. accommodation, engine room, main deck, cargo compartments, and assign crew members with the responsibility of searching each area. Stowaways have been known to hide in the most unusual places. Besides cargo holds and containers, they have been found inside funnel casings, chain lockers, storerooms, cabins, crane cabs, mast houses, engine room bilges and even in the rudder shaft space. If stowaways are discovered during the search, the Immigration and Port Authorities should be notified immediately in order that the stowaways can be removed from the ship.

Prior to departure the crew should conduct a thorough search of all compartments and the result should be recorded in the logbook. When possible, the ship's rudder trunk should be checked for stowaways. The rudder trunk is a typical access point for stowaways and is very often used as hideout. Once the vessel has sailed and the outbound pilot is still on board, again; a search of all compartments should be considered. If stowaways are found at this stage they can be repatriated using the pilot boat.

1.2.4 Required actions when stowaways are discovered

Upon discovery of a stowaway, search should be made for identity documents, drugs and personal belonging. Also stowaways often travel in packs so especially in the vicinity of the area where he was found a thorough investigation should be conducted. The approach of such person must executed with great cautiousness since many stowaways are armed with knives and other type of weapons. There are a lot of reported incidents of stowaways attempting to escape and gravely injuring crew members. Any personal effects found during the investigation should be kept in a plastic bag and be given to the local authorities upon disembarkation for repatriation purposes of the stowaway.

The discovery of a stowaway indicates a breach of the Ship Security Plan (SSP). As such they should be investigated to analyze the cause of the security breach in order to identify the actions necessary to prevent future stowaway occurrences. Stowaways frequently appear or are discovered by the crew two or three days after the ship has left port. Any stowaways found should be placed in secure quarters, guarded if possible, and be provided with adequate food and water. They, as well as the place they were found, should be searched for any identification papers. The stowaway should be questioned as to whether he is alone in this venture or if there are others. Where there is more than one stowaway, they should preferably be detained separately.

The Master and crew should act firmly, but humanely. Regardless of how inconvenient or irritating the stowaways may be to the Master, crew and ship-owner, it is important that the stowaways are treated humanely. If needed, the Master and crew must also provide the stowaways with medical assistance.

Stowaways should not be put to work. If working, they will be at an increased risk of injuries which may lead to significant medical and deviation expenses and even claims for compensation. Moreover, many stowaways are not only untrained, but can also be unpredictable and may represent a safety hazard if put to work. Some Ship-owners/Operators have faced claims for wages as a result of putting stowaways to work. These claims have caused additional problems in the repatriation process.

If a stowaway should die during the voyage, the authorities at the next port of call, in cooperation with the relevant embassy, will decide how to proceed, i.e. whether to arrange burial at the port in question or repatriate the body. The body of an unidentified stowaway will normally not be returned to the port of embarkation. However, this practice may vary from country to country Masters and Ship-owners are advised to seek the assistance of the vessel's local agent and to follow the instructions provided by the local authorities and the embassy in question.

It is Master's responsibility to inform the local authorities of both the port of embarkation of the stowaway and the next port of call of the vessel. Stowaways tend

to stay unseen for days since they are incredibly hard to find and only come out when they run out of supplies. In most of the cases the vessel is already in such distance that return to the original port is impossible. Public authorities in the country of the ship's first scheduled port of call after discovery of a stowaway shall allow disembarkation of the stowaway, when the stowaway is in possession of valid travel documents for return, and the public authorities are satisfied that timely arrangements have been or will be made for repatriation and all the requisites for transit fulfilled.

1.2.5 Return Of Stowaways

When a stowaway has inadequate documents, public authorities should, whenever practicable and to an extent compatible with national legislation and security requirements, issue a covering letter with a photograph of the stowaway and any other important information. The letter, authorizing the return of the stowaway either to his/her country of origin or to the point where the stowaway commenced his/her journey, as appropriate, by any means of transportation and specifying any other conditions imposed by the authorities, should be handed over to the operator affecting the removal of the stowaway. This letter will include information required by the authorities at transit points and/or the point of disembarkation.

Public authorities in the State where the stowaway has disembarked should contact the relevant public authorities at transit points during the return of a stowaway, in order to inform them of the status of the stowaway. In addition public authorities in countries of transit during the return of any stowaway should allow, subject to normal visa requirements and national security concerns, the transit through their ports and airports of stowaways travelling under the removal instructions or directions of public authorities of the country of the port of disembarkation.

The public authorities of the State where a stowaway has been disembarked should generally inform the ship-owner, on whose ship the stowaway was found, or his representative, as far as practicable, of the level of cost of detention and return of the stowaway, if the ship-owner is to cover these costs. In addition, public authorities should keep such costs to a minimum, as far as practicable and according to national legislation, if they are to be covered by the ship-owner. The period during which ship-owners are held liable to defray costs of maintenance of a stowaway by public authorities in the State where the stowaway has been disembarked should be kept to a minimum.

Public authorities shall, according to national legislation, consider mitigation of penalties against ships where the master of the ship has properly declared the existence of a stowaway to the appropriate authorities in the port of arrival, and has shown that all reasonable preventive measures had been taken to prevent stowaways gaining access to the ship.

It is the responsibility of the State of first port of call according to the voyage plan after the discovery of the stowaway to make every effort to cooperate in establishing the validity and authenticity of a stowaway's documents and when a stowaway has inadequate documents, to whenever practicable and to an extent compatible with national legislation and security requirements, issue a covering letter with a photograph of the stowaway and any other important information. The letter, authorizing the return of the stowaway either to his/her State of origin or to the point where the stowaway commenced his/her journey, as appropriate, by any means of transportation and specifying any other conditions imposed by the authorities, should be handed over to the operator effecting the removal of the stowaway. This letter will include information required by the authorities at transit points and/or the point of disembarkation.

In the case of ship-owners operating liner services there is an alternative way of returning the stowaways to their country of origin. A ship in liner service will usually at some point in the near future return to the port where the stowaway first boarded. Provided it is safe for the crew, the vessel and the stowaway, the stowaway remains on board until the ship returns to that port, although it would be necessary to advise and obtain approval from the immigration authorities at all intermediate ports. However, it has proven difficult to keep stowaways on board in Brazil, as Brazilian authorities often disembark the stowaway in any case. It may also be possible for a ship owner to transfer a stowaway to another ship in the same ownership if that ship happens to be going to the port where the stowaway boarded or a more convenient destination than the initial ship.

1.2.6 IMO regulations On Stowaways

In 1965 the IMO passed the Convention on the Facilitation of International Maritime Traffic (the FAL Convention). The main objective of the FAL Convention is to prevent unnecessary delays to maritime traffic, aid co-operation between governments and to seek uniformity of rules pertaining to this area of maritime law. Several incidents involving stowaways, asylum seekers and refugees prompted the IMO in November 2001 to adopt a resolution on the review of safety measures and procedures for the treatment of persons rescued at sea, including stowaways discovered on board. Further amendments have been made in recent years, adding new standards and recommended practices for dealing with stowaways. The aim is to ensure that the well-being of persons on board ships is safeguarded at all times, pending their delivery to a safe port. The regulations also require the IMO to review all of its instruments ensuring that any existing gaps, inconsistencies, ambiguities, vagueness or other inadequacies can be reviewed over time. These efforts are also to be considered in conjunction with the 1997 IMO Guidelines on Allocation of Responsibilities to Seek the Successful Resolution of Stowaway Cases. The IMO has incorporated these principles in the FAL Convention, thereby making them legally binding. The practical impact of these regulations on the stowaway problem, however, remains to be seen. The above amendments were adopted on 10 January 2001 and entered into force on 1 May 2003.

According to the amended FAL Convention, the list of minimum security arrangements to be put in place is as follows (not exhaustive):

The ship-owner The ship-owner must ensure that each vessel has formal plans for preventing stowaways boarding the vessel and a stowaway search must be undertaken upon departure from ports where there is a high risk of stowaways. These requirements do not apply to passenger vessels.

• Lock all doors, hatches and means of access to the vessel whilst in port.

• Keep the number of access points to a minimum and ensure they are secure.

• Secure areas seawards.

• Keep adequate deck watch.

• Maintain adequate lighting at night; both inside and along the hull.

• Tally embarkations and disembarkations sheets. Maintain adequate means of communication.

• Patrol port areas.

• Establish a secure storage area for types of cargo which may serve as hiding places for stowaways.

• Monitor persons and cargo entering the above area.

• Make arrangements with the stevedoring company concerning authorized personnel.

While onboard If, despite the above measures, a stowaway manages to hide himself on a vessel, the vessel's flag state, according to the amended Convention, requires the ship-owner to ensure that the health, welfare and safety of the stowaway is properly maintained, and the stowaway is also entitled to food, lodging and proper medical and sanitary facilities.

Disembarkation

Do not deviate! This is one of the main features of the new Convention: the flag state should urge the ship-owner to instruct the Master to stick to the planned voyage after the vessel has left the territorial waters of the country of embarkation. The exceptions are • the required documentation is available and permission has been granted by the port to which the ship intends to deviate to disembark the stowaway, or • repatriation has been arranged elsewhere again with the appropriate documentation and

permission for disembarkation, or • There are extenuating security, health or compassionate reasons for immediate disembarkation. A stowaway found inadmissible in the country of disembarkation must be returned to the country of embarkation, which is not permitted to return the stowaway to the country of disembarkation. If a country refuses permission to disembark the stowaway, it must immediately notify the flag state of the reasons for the refusal.

The role of the state flag

The flag state must assist and co-operate with the Master/ship-owner in identifying the stowaway and determining his/her nationality. It must also assist in contacting the relevant public authorities to assist with the removal of the stowaway. Finally, the flag state must also assist and co-operate with the Master/ ship-owner in making arrangements for the removal or repatriation of the stowaway**.**

1.3 Drug Trafficking

Drug Trafficking is big business with international complexities and incredibly high amount of money. It is said to be among the most serious crimes of our times. And as a matter of fact, merchant shipping has inadvertently played an unfortunate role in the hauling of the illicit drugs over the years. Soaring volumes of drugs have been trafficked by sea because of favoring circumstances for transportation from producers to consumer regions around the world. There's no sign that these illegal drug markets are even remotely saturated, as trade and commercial traffic continues its expansion. Of late, there has been a rise in the number of reported incidents involving drug discoveries on ships calling South American ports and ships bound for US or European ports, but the fact remains that there are no shipping routes which could be considered safe.

CIA map of international illegal drug connections
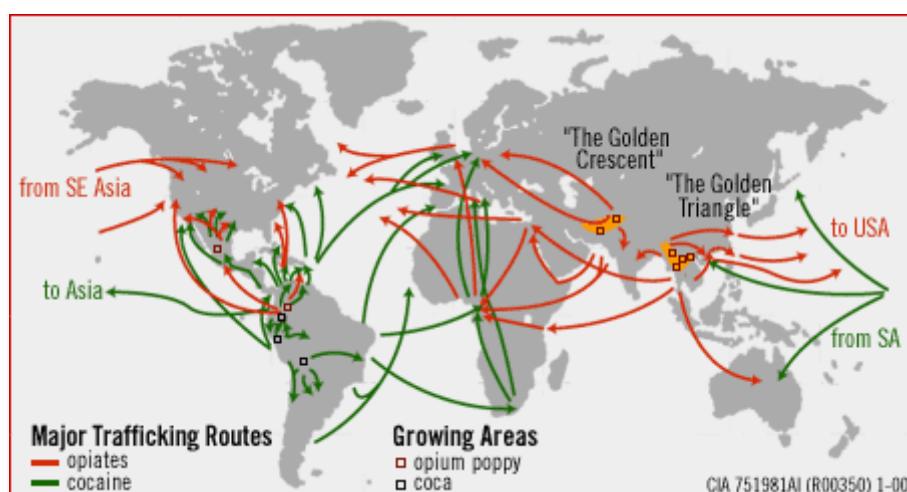
Εικόνα 4 Source: Wikipedia

The International Maritime Organization (IMO) proposes the following "Revised Guidelines for the prevention and suppression of the smuggling of psychotropic substances and precursor chemicals on ships engaged in international maritime traffic", harmonized with international instruments and recommendations issued by various international bodies such as IMO, the World Customs Organization (WCO) and the International Labor Organization (ILO), their purpose being to strike a balance between facilitation of international trade and management of security, thus helping to prevent drug-trafficking activities.

The ultimate aim is to comply with United Nations Security Council resolution 1373(2001), whose paragraph 4 refers to the close connection between international terrorism and transnational organized crime, illicit drugs, money laundering and illicit arms trafficking, and highlights the need for closer co-operation at national, sub-regional, regional and international levels so as to strengthen the international response to terrorism and serious threats to international security, and also with resolution 1456(2003), which reaffirms the duty to prevent terrorists from making use of other criminal activities such as transnational organized crime, illicit drugs and drug trafficking, and other criminal activities.

1.3.1 Prevention Of Illicit Trafficking Of Drugs

Prevention is one of the most important aspects where illicit trafficking of narcotic drugs is concerned; it should involve all who belong to the maritime sector, increasing their awareness of the scale of the global drug-trafficking problem and encouraging them to contribute to the international efforts to detect and eliminate narcotic drugs trafficking and psychotropic substances.

Likewise, part of prevention involves enhancing the safety and security arrangements for boarding points, ports, port facilities and ships, and supporting co-ordinated action among the competent authorities in port, particularly those operating at the ship-port interface. This is an area in which it is becoming even more important to develop the mentality, based on facilitation, co-operation and training needed to inform relations between those authorities, the shipping companies and the crews, if the best possible overall outcome of a protected port, including control of illicit trafficking, is to be achieved.

However, it is important to strike a balance between control and facilitation, as too much control would hamper normal international trading of legal cargoes, causing unnecessary delays for both ships and port facilities, and insufficient control would lead to increased drug trafficking.

1.3.2 Security In The Port Facility

Port facilities and locations covered by approved port facility security plans should implement security procedures in accordance with the provisions of the ISPS Code. Port facilities and other locations, for example fixed and floating platforms, not covered by port facility security plans approved by the Contracting Government concerned, should establish appropriate measures to enhance the security of ships interfacing with them, in accordance with 2002 SOLAS Conference resolution 7 on Establishment of appropriate measures to enhance the security of ships, port facilities, mobile offshore drilling units on location and fixed and floating platforms not covered by chapter XI-2 of the 1974 SOLAS Convention. Such measures may include:

1. The control of access by private vehicles to cargo stores and loading services.

2. Having a list of all vehicles and persons with regular authorized access to cargo stores and port services, and making this list available to the competent Authorities.

3. Restricting parking of all vehicles to a designated area, remote from the active loading areas.

4. Any vehicle authorized to enter at one time to cargo stores or loading services must be issued with a dated entry pass and parking should be restricted to designated areas. The pass numbers should be recorded and made available to the competent Authorities if required.

5. When the port facility or ship has electronic security systems, such as closed circuit television covering the cargo holding or loading area, the systems must be accessible to the competent Authorities, if they so request.

6. Access to cargo and loading areas should only be permitted to authorized persons and vehicles showing the correct identification.

7. All these precautions and actions should be harmonized, to the extent possible, with the relevant measures in the ship security plan.

Personnel security

The Company security officer and where applicable the ship security officer should allow only authorized and duly identified employees to handle operational information about the cargo or the ship.

The Company security officer and the ship security officer should involve the competent Authorities in educating its personnel in identifying areas where exceptions to normal commercial practice may suggest the possibility of a drug-related offence.

The relevant company personnel should be trained to recognize signs that an employee may be likely to commit drug-related offences and in the measures to be taken when suspicion is aroused.

1.3.3 Possibility Of Illicit Loading Onto Ships

The procedures necessary to prevent illicit drugs being concealed on board vessels clearly depends on the level and nature of the risk. Carriers need to assess the threat and identify their vulnerability.

Factors which need to be taken into account include:

1. ports of call and routes taken by the vessel;

2. the origin and routeing of the cargo;

3. the level of control exercised at port facilities;

4. the degree of control exercised regarding access to the ship; and

5. the vulnerability of the crew to pressure by drug traffickers.

Today's traffickers use a wide variety of routes, often transhipping the cargo several times until its country of origin is completely obscured. Few ports can now be considered safe from attempts to place drugs and other illicit substances on board, although ports in producing countries remain those in which the vessel is most at risk.

Ships are vulnerable to being used as a conduit for the movement of drugs:

1. in cars, freight vehicles, trailers, etc.;

2. by visitors to the vessel;

3. in luggage placed in a baggage trolley;

4. in ship's stores;

5. by contractors' personnel (for example repair or cleaning gangs);

6. as part of crew effects;

7. concealed on or in the vessel's machinery or hull; and

8. in cargo or in the structure of cargo containers or packing.

1.3.4 Security Onboard Ship

The master is responsible for the safety and security of the ship. Additional security measures should be implemented to counter increased risks when warranted. A properly trained crew is in itself a strong deterrent to breaches of security. The first line of defence is the maintenance of the integrity of the vessel. This could be seriously compromised if crew members or other company employees become involved in drug trafficking.

Control of access to the ship and identification. The main task facing a would-be trafficker aiming to conceal packages on board the vessel is to gain access by infiltration. Security measures aimed at prevention should therefore be in the ship security plan. In each case the best methods of deterring and preventing unauthorized access are crew awareness and control of entrance to the vessel. The vessel's hull is a clear boundary which is easily defined. Protection of this boundary creates a physical and psychological deterrent to persons attempting unauthorized entry. It delays intrusion, enabling crew and security guards to detect and, if necessary, apprehend intruders. It also provides personnel and vehicles with designated and readily identifiable places for entry on to the vessel.

1.3.5 Shipboard Search Planning And Places Of Concealment

To ensure that a thorough and efficient search is completed in the shortest possible time, search plans should be prepared in advance. This should normally be done by the competent Authorities in conjunction with the Ship Security Officer and can be reviewed and modified in the light of experience.

The search plan should be comprehensive, and should detail the routes searchers should follow and all the places on the route where a package might be hidden.

The plan should be developed in a systematic manner to cover all options and to ensure no overlap or omission. This allows those responsible to concentrate on the actual search without worrying about missing something.

Before conducting the search, the configuration of the vessel should be taken into account to ensure that:
- the ship is divided into manageable areas;
- all areas of the ship are included; and
- all areas of the ship are accessible.

This configuration would show:

1. number of decks;

2. number and location of cargo holds;

3. number and location of tanks and void spaces;

4. size and layout of engine room;

5. number and size of crew quarters and public areas;

6. accessibility of ventilation systems; and

7. number and size of storerooms used for various purposes.

One location on board needs to be designated as the control point where search team reports are sent, analyzed and controlled.

Preparations should be made to equip the search teams with:

1. flash lights and batteries;

2. screwdrivers, wrenches and crowbars;

3. mirrors and probes;

4. gloves, hard hats, overalls and non-slip footwear;

5. plastic bags and envelopes for collection of evidence; and

6. forms on which to record activities and discoveries.

A system of check cards would be useful. One would be issued to each searcher specifying the route to follow and the areas to be searched. These cards can be color-coded for different areas of responsibility, for example blue for deck, red for engine room. On completion of individual search tasks, the cards are returned to a central control point. When all cards are returned, the search is known to be complete. When the master or the ship security officer has decided to search the ship, he should first brief his department heads who, in turn, can brief their own search group leaders. It is the group leaders who then organize their teams and search allocated spaces, using search plans to ensure that no spaces are missed.

Concealment of drugs

Drugs on board vessels can be hidden in the structure of the vessel itself or in seldom-used compartments, spaces and machinery, concealed in accommodation areas or, where crew members are involved, held on the person or in personal effects. The cargo offers many opportunities for concealment, especially where unit load or containerized cargo is involved.

There are many places on board a ship where drugs can be concealed. Some of the more common places where drugs have been found include:

1. where it is unlikely that anyone will enter or where searches are rarely made, whether due to respect (for example master's cabin, the sofa in his day room), awkwardness (for example propeller shaft tunnel) or danger (for example behind electrical panels and in inert cargo spaces); near the funnel where fumes may disguise distinctive smells such as cannabis; passenger cabins;

2. store rooms (flour bins, refrigerators, freezers for provisions such as fish and meat, sacks of vegetables or inside canned goods);

3. deposited provisions (wardrobes);

4. paint stores (paint lockers);

5. in crew quarters (for example behind or in radiators or toilet fittings, behind pictures or skirting boards, in porthole panelling, in cabin, ceiling and wall panelling, in false compartments in the bases of wardrobes and in coat hangers,

under lockers and drawers, beneath bunks and mattresses and other cabin furniture);

6. places where access is prohibited to unauthorized personnel;

7. inside lubricating oil tanks or cargo tanks; in companionway ducts, floor, wall and ceiling panels, inside ventilation pipes and shaft tunnels or cable ducts in the deck or inside engine-room machinery, in computer rooms, control panels, sumps, bilges and funnel shafts;

8. crates or containers with false bottoms; double-bottomed oil drums, cylinders and paint drums;

9. places where the substances may not seem out of place (for example medical stores, lifeboat stores); inside fire extinguishers, hoses and their storage spaces;

10. inside recent structural alterations; in freight containers or in hollow spaces in their construction;

11. inside false floors and/or ceilings in cabins and companionways;

12. in oil or water tanks false probes or visual indicators and falsely calibrated gauges may be fitted.

1.3.6 Actions when drugs are found and personal safety

In the absence of any specific standing guidance from the Company in the ship security plan, ship security officers should seek directions on measures to be taken whenever drugs are discovered on vessels, in cargo or on premises. If drugs are found at sea, the authorities at the next port of call should be notified by radio before entering territorial waters. The competent Authorities should be informed as soon as possible.

Upon finding the illegal substances you should immediately get another person to witness the position of the suspicious package or bag before taking any action. If possible, take photographs of the package or bag as it was found, i.e. find a witness (avoiding the "minder"). Handle as little as possible and remember there may be fingerprint evidence on the package or bag. Where necessary, taking handling precautions, remove the goods to a safe place under lock and key. Guard if necessary. If at sea, record any discovery in the ship's log. Include as much detail as possible: date, time, location, approximate quantity, person detecting, names of witnesses, etc.

1. Do not disclose the find, and limit information to persons who need to know.

2. Notify the competent Authorities at the next port of call before entering territorial waters. Failure to do so could result in charges of drug trafficking.

3. Do not allow crew members to disembark before being interviewed by the competent Authorities.

4. Protect any wrapping and anything else found in the space.

5. Consider searching similar locations and spaces.

6. Write a report as soon after the event as possible. Include everything that occurred. Making a sketch plan of the space and area often proves helpful. It is also very useful to note why the particular location or cargo was inspected or how the package(s) or bag(s) came to be found. Include any suspicious activity noticed. The report should be signed by any witnesses. At sea, the finder of the package or bag, the witnessing officer, the master and/or the ship security officer, or the head of department, should sign the report, showing the date and time. If the finding is in cargo, the relevant cargo documentation should be collected for subsequent examination by the competent Authorities.

7. Ships' masters and/or security officers should notify the competent Authorities and the port facility security officer upon arrival.

Personal safety considerations
The following points must be observed to ensure personal safety when a suspicious package or bag or substance is discovered:
1. Do not pierce or open suspicious packages or bags wrapped in newspaper, foil, carbon paper, or polythene bags and sealed with masking tape.

2. Do not feel, handle or touch the substance without skin protection and a face mask.

3. Do not inhale powders, fumes or vapors.

4. Do not rush your actions.

5. Do not smoke near the substance or expose it to heat or flame.

6. Do not under any circumstances taste, eat or drink the suspect substance.

7. Always wash hands and brush clothing free from any contamination as soon as possible.

8. Ensure adequate ventilation and lighting in confined or enclosed spaces.

9. If moving the items to a secure place, wrap them in plastic film, sheet or bags and take them to a secure place or safe as quickly as possible.

10. Take note of anyone taking an unusual interest in what you are doing.

1.3.7 The International Legal Framework

The 1982 United Nations Convention on the Law of the Sea. On a global international level, we can make a distinction between two major legislative documents. First of all, there is the 1982 United Nations Convention on the Law of the Sea (UNCLOS), also referred to has a sort of constitution for the law of the sea. The UNCLOS gives a general legal framework on the fight against drug trafficking by sea. There is one article in the UNCLOS dealing specifically with illicit traffic in narcotic drugs and psychotropic substances: 2 "Article 108 - Illicit traffic in narcotic drugs or psychotropic substances:

 1. All States shall cooperate in the suppression of illicit traffic in narcotic drugs and psychotropic substances engaged in by ships on the high seas contrary to international conventions.

2. Any State which has reasonable grounds for believing that a ship flying its flag is engaged in illicit traffic in narcotic drugs or psychotropic substances may request the cooperation of other States to suppress such traffic.

The 1988 United Nations Convention against Illicit Drug Trafficking in Narcotic. Drugs and Psychotropic Substances. The second important transnational legal document dealing with illegal drug trafficking by sea is the 1988 United Nations Convention against Illicit Drug Trafficking in Narcotic Drugs and Psychotropic Substances. This international convention is far more detailed and contains a definition of illegal drug trafficking and its main characteristics

The main objective of the 1988 Convention is the encouragement of international cooperation to deal with the issue of illegal drug trafficking (by sea). Art. 17, 1 of the 1988 Convention clearly puts forward this objective by stating: "The Parties shall co-operate to the fullest extent possible to suppress illicit traffic by sea, in conformity with the international law of the sea". Art. 17 of the 1988 Convention is specifically dedicated to illegal drug trafficking by sea and also contains other instruments countries can use to prevent and suppress illegal drug trafficking by sea. Art. 17 of the 1988 Convention provides states with instruments like notifying other states, the possibility of a request for assistance, the possibility for a flag state to authorize a third state to board and search a vessel, etc. Furthermore art. 17, 9 of the 1988 Convention encourages states to enter into bilateral and regional agreements to carry out and enhance the effectiveness of the 1988 Convention.

Besides the fact that the 1988 Convention heavily promotes international cooperation between states and contains some very relevant provision to combat illegal drug trafficking, only a few substantive obligations were imposed upon states. Nevertheless, the 1988 Convention provides a good basis for more effective law enforcement in the field of illegal drug trafficking.

Each party to the 1998 Convention is obliged to take criminal measures for the following actions:

- The production, manufacturing, extraction, preparation, offering, offering for sale, distribution, sale, delivery on any terms whatsoever, brokerage, dispatch in transit, transport, importation or exportation of any narcotic drug or any psychotropic substance contrary to the provisions of the 1961 Convention, the 1961 Convention as amended or the 1971 Convention.

- The cultivation of opium poppy, coca bush or cannabis plant for the purpose of the production of narcotic drugs contrary to the provisions of the 1961 Convention and the 1961 Convention as amended.

- The possession or purchase of any narcotic drug or psychotropic substance for the purpose of any activities enumerated in the list mentioned in the first lid.

- The manufacture, transport or distribution of equipment, materials or of substances listed in Table I and Table II of the 1988 Convention, knowing that they are used in or for the illicit cultivation, production or manufacture of narcotic drugs or psychotropic substances.

- The organization, management or financing of any of the offences enumerated above.

The elements and principles mentioned above are very general. In order to apply this elements to the crime of illegal drug trafficking, it is necessary that we identify the corpus delicti of the crime of illegal drug trafficking by sea.

The two international conventions mentioned before (the 1982 United Nations Convention of the Law of the Sea and the 1988 Convention) should be applied together to get a broad view on the legal framework in order to fight against drug trafficking by sea. Often, the 1988 UN Convention against Illicit Drug Trafficking in Narcotic Drugs and Psychotropic Substance will be far more detailed than this one dedicated article in the UNCLOS, but in the area of cooperation between states the UNCLOS also has a very broad scope.

1.4 Terrorism In Maritime Domain

The way of life in the United States of America changed after Al Qaeda terrorist attacked New York City and Washington, D.C., on September 11, 2001. The impact of those attacks was felt worldwide with increased security measures. Unlike the air travelers, maritime security measures were not as encompassing. Whereas nearly all air cargo is inspected, the bulk of cargo transported by ship is either not inspected or only partially inspected.

Terrorist groups are characterized by their hierarchical pyramid structure. There are certain terrorist groups like Al Qaeda, Liberation Tigers of Tamil Ealam (LTTE) and Jemaah Islamiyah (JI) who have the financial resources and capability to launch maritime terrorist attacks. Their motives are to generate public attention and to spread

their political message. They are responding to what they perceived as oppression. "Terrorism is generally the tool of the weak; the weak do not expect to get all they desire, and accept the possibilities of compromise during the course of negotiations, as long as they get adequate relief from the oppression against which they are fighting," (de Bivot, 2008).

The maritime domain poses different problems for terrorists than land-based operations. Technology helps to extend the reach of terrorism into the maritime domain. Since vessels may be out in open waters, they will be out of sight and easy reach of the media. As such, an attack on the ships in the open sea will not create as much publicity as those attacks on land vehicles (Chalk, 2008). Further, the details of such an attack will be less definitive and encumbered without "live video." Therefore, it is highly likely that terrorists will only target vessels that are beneficial to their political motives. As highlighted by Lawrence de Bivort, terrorists are generally politically motivated. Terrorists respond to what they perceive as oppression and the oppression may be military, political, social, economic, civil rights denial, or even cultural (Bivort, 2008). Maritime threats may include vessels with iconic value (e.g., naval ships), vessels that when attacked might disrupt economic activity, and vessels which could be used as a weapon of mass destruction.

Political targets in the maritime domain would seem to always be on the terrorist groups' priority list. Certain terrorist groups are formed to oppose a political force or adversary. For example, the LTTE's(Liberation Tigers of Tamil Eelam) Sea Tigers existed because they are needed to combat the SLN (Sri Lanka Navy). The Sea Tigers sought to establish internal self-rule or a separate state in the Tamil-dominated areas in Sri Lanka's northern and eastern side. The suicide bombing of USS Cole, the warship was targeted while docking in the port of Aden, Yemen, for refueling is another example of a political asset being targeted by terrorist groups. The ability to succeed in executing an attack on a military force might generate a lot of media attention. Furthermore, it seems that successful attacks could aid the proliferation of the terrorist groups.

1.4.1 Possible Consequences

 Possible Consequences. The economic losses of an attack on a warship or naval base will be mostly limited to the damages inflicted directly on the warship or the naval base. Compensations to the families of those killed will be paid out via the country's reserves as they are killed in the line of duty. On top of the direct economic damages inflicted by the attack, there may be indirect economic losses. Businesses might lose confidence in the country's security, which leads to a negative impact on the country's economy. In an extreme case where the terrorist attack manages to killed the leader of the political party in the country, the fallout might lead to unrest within the country and unforeseen social problems. The human losses will depend on the target of interest by the terrorist group and the amount of cascading damage. That damage could range from tens of people to hundreds of people. If a terrorist attack was carried out in the open sea on a navy warship, the human casualty would be most likely limited to the crew on the warship. Such an attack may have a maximum effect on about 100 people. However, if the attack was carried out in a naval base, the

human losses are difficult to calculate. The political impact may be large as the ability to successfully execute a terrorist attack on a military asset or an important political figure in the maritime domain speaks to the issue of state security; line of succession; and disruptive, consequential events. Furthermore, an attack on a political figure might imply the terrorist group has the capability and intelligence to circumvent considerable security measures and enforcement. An attack on an important political figure may generate a lot of publicity.

 Potential Areas of Vulnerabilities are the Military and naval bases which are usually secured. The security steps after the September 11 terrorist attack were most stringent and comprehensive. However, one area of vulnerabilities was the usage of other countries' harbor when the navy warships are staging overseas. There are instances where the warships need to replenish their fuel and food supplies in a foreign country's harbor. The terrorist group can potentially work their way into the harbor by bribing employees working in that harbor if the security within the harbor is lacking. For example, in USS Cole's attack, the warship was targeted while docking in the port of Aden, Yemen, for refueling.

 Likelihood of a Terrorist. The motives behind most terrorist attacks are fundamentally political. Despite the enhanced security in political assets, terrorist groups continue to try and overcome these security measures in order to achieve their objectives. Terrorists will wait for the appropriate opportunity to strike. This waiting strategy is supported by past successful maritime attacks. Although the enhanced security measures will reduce the likelihood of a terrorist attack, such measures do not necessarily remove the threats. Therefore, it is a possibility that political assets and figures in the maritime domain are potential targets of maritime terrorism.

1.4.2 Means Of Attack

There are basically four different types of potential maritime terrorist attacks, namely:

• using UUVs to plant explosives

• using semi-submersible or submersible laden with explosives

 • using fast boats laden with explosives

• hijacking a vessel

Utilizing the cost of the method, the technology or skill needed to execute the method, and the estimated damage as measures by which to compare the various methods. For the technology or skill and the estimated damage, a relative scale was used to estimate the difficulties in using that system or resource to execute an attack.

A. Using UUVS To Plant Explosives

Cost data for Unmanned Underwater Vehicle are limited. A report from the RAND Corporation stated that most of the available limited UUV cost data are small-production vehicles or larger prototype vehicles. No cost estimate could be found for relatively larger and complex vehicles (Button, Kamp, Curtin, & Dryden, 2009). In the report, it was estimated that a man-portable size UUV like the EMATT cost about $3,000 in 2007 and the payload was very small. Therefore, a good estimate for a larger size UUV might be about a few hundred thousand dollars. Another point worth noting is that currently, there are no UUVs certified to carry explosives. Therefore, terrorist groups will have to find UUVs which can carry sufficient payload and to introduce a mean to ignite the explosive. Furthermore, a UUV with very sophisticated control system is needed to execute a mission where the UUV is moving towards a targeted moving vessel. This will further make the UUV very expensive.

B. Using Semi-Submersible Or Submersible Laden With Explosives

Andrew F. Krepinevich reported that the submersibles used by drug cartels cost a few million dollars to build (Andrew F. Krepinevich, 2011). For the purpose of this analysis, each submersible will be estimated to cost one and a half million dollars. Each submersible can carry up to 10 tons of drugs (Schmidt & Shanker, 2012). Therefore, it is assumed the terrorist groups will load the submersibles with five tons of explosives. Among the four options, this method of transport carries the greatest mass of explosives. Thus, the relative damage for a submersible is the highest. The terrorists must have the skill and temperament (to think and work in a confined space) to operate the vehicle and it will be beyond basic maritime skills. The training might not be readily available.

C. Using Fast Boat Laden With Explosives

The attack on USS Cole is an example of such an attack and it was used as the analogy for this analysis. From the report by Akiva J. Lorenz, 270 kg of explosives were used in the attack and it cost Al Qaeda about $40,000 (Lorenz, 2007). Also, operating a fast boat is considered easier than operating a submersible.

D. Hijack The Vessel

As compared to the other three methods, the method that involved hijacking a vessel is the simplest in terms of the equipment needed and the skills required. Therefore, it was assessed and used for both the technology and the complexity of equipment. The cost of executing such a mission involved the cost to train the terrorists and to pilot a fast boat. Therefore, it is estimated to cost a few thousand dollars.

2. Special Measures To Enhance Maritime Security By SOLAS

2.1 Requirements For Companies And Ships

1. Companies shall comply with the relevant requirements of this chapter and of part A of the ISPS Code, taking into account the guidance given in part B of the ISPS Code.

2. Ships shall comply with the relevant requirements of this chapter and of part A of the ISPS Code, taking into account the guidance given in part B of the ISPS Code, and such compliance shall be verified and certified as provided for in part A of the ISPS Code.

3. Prior to entering a port or whilst in a port within the territory of a Contracting Government, a ship shall comply with the requirements for the security level set by that Contracting Government, if such security level is higher than the security level set by the Administration for that ship.

4. Ships shall respond without undue delay to any change to a higher security level.

5. Where a ship is not in compliance with the requirements of this chapter or of part A of the ISPS Code, or cannot comply with the requirements of the security level set by the Administration or by another Contracting Government and applicable to that ship, then the ship shall notify the appropriate competent authority prior to conducting any ship/port interface or prior to entry into port, whichever occurs earlier.

2.2 Ship Security Levels

A ship is required to act upon the security levels set by Contracting Governments as set out below.

At security level 1, the following activities shall be carried out, through appropriate measures, on all ships, taking into account the guidance given in part B of this Code, in order to identify and take preventive measures against security incidents:

.1 ensuring the performance of all ship security duties;

.2 controlling access to the ship;

.3 controlling the embarkation of persons and their effects;

.4 monitoring restricted areas to ensure that only authorized persons have access;

.5 monitoring of deck areas and areas surrounding the ship;

.6 supervising the handling of cargo and ships stores; and

.7 ensuring that security communication is readily available.

At security level 2, the additional protective measures, specified in the ship security plan, shall be implemented.

At security level 3, further specific protective measures, specified in the ship security plan, shall be implemented

Whenever security level 2 or 3 is set by the Administration, the ship shall acknowledge receipt of the instructions on change of the security level. Prior to entering a port or whilst in a port within the territory of a Contracting Government that has set security level 2 or 3, the ship shall acknowledge receipt of this instruction and shall confirm to the port facility security officer the initiation of the implementation of the appropriate measures and procedures as detailed in the ship security plan, and in the case of security level 3, in instructions issued by the Contracting Government which has set security level 3. The ship shall report any difficulties in implementation. In such cases, the port facility security officer and ship security officer shall liase and co-ordinate the appropriate actions.

2.3 Ship Security Plan

Each ship shall carry on board a ship security plan approved by the Administration. A recognized security organization may prepare the ship security plan for a specific ship. The Administration may entrust the review and approval of ship security plans, or of amendments to a previously approved plan, to recognized security organizations. In such cases the recognized security organization, undertaking the review and approval of a ship security plan, or its amendments, for a specific ship shall not have been involved in either the preparation of the ship security assessment or of the ship security plan, or of the amendments, under review. The submission of a ship security plan, or of amendments to a previously approved plan, for approval shall be accompanied by the security assessment on the basis of which the plan, or the amendments, have been developed. 9.4 Such a plan shall be written in the working language or languages of the ship. If the language or languages used is not English, French or Spanish, a translation into one of these languages shall be included. The plan shall address, at least, the following:

1. measures designed to prevent weapons, dangerous substances and devices intended for use against persons, ships or ports and the carriage of which is not authorized from being taken on board the ship;

2. identification of the restricted areas and measures for the prevention of unauthorized access to them; .

3. measures for the prevention of unauthorized access to the ship;

4.procedures for responding to security threats or breaches of security, including provisions for maintaining critical operations of the ship or ship/port interface;

5. procedures for responding to any security instructions Contracting Governments may give at security level 3; .

6. procedures for evacuation in case of security threats or breaches of security;

7. duties of shipboard personnel assigned security responsibilities and of other shipboard personnel on security aspects;

8. procedures for auditing the security activities;

9. procedures for training, drills and exercises associated with the plan;

10. procedures for interfacing with port facility security activities;

11.procedures for the periodic review of the plan and for updating;

12.procedures for reporting security incidents;

13. identification of the ship security officer;

14. identification of the company security officer including 24-hour contact details; .

15. procedures to ensure the inspection, testing, calibration, and maintenance of any security equipment provided on board; .

16 .frequency for testing or calibration of any security equipment provided on board; .

17.identification of the locations where the ship security alert system activation points are provided;1 and

18. procedures, instructions and guidance on the use of the ship security alert system, including the testing, activation, deactivation and resetting and to limit false alerts.

2.4 Ship Security Alert System

The ship security alert system is a measure for increasing the maritime security widely acknowledged as part of the International Ship and Port Facility Security Code (ISPS). The SSAS in connected with o beacon which upon activation transmits a specific country code reacting to any Regional Coordination Centers (RCC) in the

vicinity. When the RCC receive the signal they instantly inform local authorities and law-enforcement forces to deal with the threat.

The ship security alert system, when activated, shall:

1. initiate and transmit a ship-to-shore security alert to a competent authority designated by the Administration, which in these circumstances may include the Company, identifying the ship, its location and indicating that the security of the ship is under threat or it has been compromised;

2. not send the ship security alert to any other ships;

3. not raise any alarm on-board the ship; and

4. continue the ship security alert until deactivated and/or reset.

The ship security alert system shall:

1. be capable of being activated from the navigation bridge and in at least one other location; and

 2. conform to performance standards not inferior to those adopted by the Organization.

The ship security alert system activation points shall be designed so as to prevent the inadvertent initiation of the ship security alert.

The requirement for a ship security alert system may be complied with by using the radio installation fitted for compliance with the requirements of chapter IV, provided all requirements of this regulation are complied with.

When an Administration receives notification of a ship security alert, that Administration shall immediately notify the State(s) in the vicinity of which the ship is presently operating.

When a Contracting Government receives notification of a ship security alert from a ship which is not entitled to fly its flag, that Contracting Government shall immediately notify the relevant Administration and, if appropriate, the State(s) in the vicinity of which the ship is presently operating.

2.5 Threats To Ships

1. Contracting Governments shall set security levels and ensure the provision of security level information to ships operating in their territorial sea or having communicated an intention to enter their territorial sea.

2. Contracting Governments shall provide a point of contact through which such ships can request advice or assistance and to which such ships can report any security concerns about other ships, movements or communications.

3. Where a risk of attack has been identified, the Contracting Government concerned shall advise the ships concerned and their Administrations of:

1. the current security level;

2. any security measures that should be put in place by the ships concerned to protect themselves from attack, in accordance with the provisions of part A of the ISPS Code; and

3. security measures that the coastal State has decided to put in place, as appropriate.

2.6 Requirements For Port Facilities

1. Port facilities shall comply with the relevant requirements of this chapter and part A of the ISPS Code, taking into account the guidance given in part B of the ISPS Code.

2 .Contracting Governments with a port facility or port facilities within their territory, to which this regulation applies, shall ensure that:

.1 port facility security assessments are carried out, reviewed and approved in accordance with the provisions of part A of the ISPS Code; and

.2 port facility security plans are developed, reviewed, approved and implemented in accordance with the provisions of part A of the ISPS Code.

. 3 Contracting Governments shall designate and communicate the measures required to be addressed in a port facility security plan for the various security levels, including when the submission of a Declaration of Security will be required.

3. Economic Impacts of Maritime Security Threats

Approximately 80% of world trade currently travels by sea, representing around 93,000 merchant vessels, 1.25 million seafarers, and almost six billion tons of cargo. Since the end of the Second World War, seaborne trade has doubled every decade. It is unavoidable that this results in incredible amount of money that criminals would surely target, thus security threats such as piracy or drug smuggling will always be looming.

3.1 The Costs of Maritime Piracy

It is estimated that piracy costs between $1 and $16 billion per year. These studies note the complex difficulties faced in calculating the cost of piracy, and most have been primarily focused on addressing first-order costs (such as the cost of ransoms, security deterrence equipment, and the presence of international navies). They have generally not looked at the knock-on secondary costs of piracy, such as affects on foreign investment in regional nations, or how piracy affects commodity price inflation.

There are also strong disagreements between different industry and government representatives over the costs of piracy. One study shows some of the key contentions between different representatives. It relays how a shipping investment specialist in New York says: "It's no big deal - insurance covers it." A maritime lawyer claims: "It's putting a lot of pressure on costs at a time when the market is still quite depressed from where it was 18 months ago. Either you pass on those costs or it drops to the bottom line." While an industry consultant asserts: "The insurance industry hasn't completely got its hands around it." Finally, Per Gullestrup, CEO of the Danish Clipper Group who had a ship captured in 2008, states: "This whole thing is costing the industry billions."

Some of the toughest challenges in calculating the cost of piracy were:

1. Data limitations.

2. Imperfect reporting on piracy.

3. Disaggregating effects from general financial/political instability.

3.1.1 The Direct Economic Costs Of Piracy

The following section addresses the main direct costs of piracy, including: the cost of ransoms, piracy insurance premiums, deterrent equipment, re-routing vessels away from piracy risk zones, naval deployments in piracy hot zones, piracy prosecutions, and organization budgets dedicated to reducing piracy.

3.1.2 The Cost of Ransoms

One of the most spectacular increases in the costs of piracy in recent years has been the increasing price of ransoms paid to release hijacked ships. Ransoms are generally sought by Somali pirates. Pirates in other regions have more often stolen the vessel or cargo, rather than ransoming the value of the seafarer's lives and their ship. In November 2010, the highest ransom on record, $9.5 million, was paid to Somali pirates to release the Samho Dream, a South Korean oil tanker. Indeed, 2010 set a remarkable record for the cost of ransoms, with the year kicking off to a $7 million ransom paid in January to release the Greek supertanker MV Maran Centaurus, which had been carrying $162 million of crude oil from Saudi Arabia to the United States. The ransom demonstrated the exponential increase in the price of ransoms in recent years. In 2005, ransoms averaged around $150,00015. By 2009, the average ransom was around $3.4 million. In 2010, ransoms are predicted to average around $5.4 million. Problematically, increasing ransom payments appear to be lengthening negotiations, and therefore the duration seafarers are held hostage. The average length of negotiations has more than doubled over the past year as pirates seek, and receive, larger ransom payments. Ships were held for an average of 106 days between April and June of 2010, up from just 55 days in 2009, and the last four ships released in November 2010 were held for an average of 150 days. Seafarers now face the likelihood of three to four months of captivity. The total cost of ransom is estimated to be around double the value actually paid to pirates. The total cost is duplicated by a number of factors, such as: the cost of negotiations, psychological trauma counseling, repair to ship damage caused while it is held captive, and the physical delivery of the ransom money, often done by helicopter or private plane. Finally, large costs result from ships being held and out of service. For instance, it costs around $3 million for a cargo ship to be held for two months at a charter hire rate of $50,000 per day.

3.1.3 The Cost of Insurance

The growing threat and cost of ransoms, the maritime insurance industry has responded by increasing its shipping rates and premiums, especially in designated high-risk piracy zones. Shipping insurance comes in four main types: war risk, kidnap and ransom, cargo, and hull insurance.

a) War Risk: War Risk insurance is an excess charge for a vessel transiting a war risk area. The Gulf of Aden was classified as a war risk area by Lloyds Market Association (LMA) Joint War Committee in May 2008. Since this date, the cost of war risk premiums have increased 300 fold, from $500 per ship, per voyage; to up to $150,000 per ship, per voyage, in 2010. Other regions affected by piracy have also

been classified as war risk zones in the past, such as the Malacca Strait between 2005 and 2006.

b) Kidnap and Ransom (K&R): Generally K&R insurance covers the crew against ransom demands, but not the vessel or cargo. However, some marine insurance policies have recently expanded to include both crew and property. Insurance giant Munich Re., estimates that K&R premiums increased tenfold between 2008 and 2009.

c) Cargo: Cargo insurance covers goods transported by a vessel. The excess premium on cargo transiting piracy regions is estimated to have increased by between $25 and $100 per container in the past few years.

d) Hull: Hull insurance covers physical damage to the ship, including harm from heavy seas, collision, sinking, capsizing, grounding, fire or piracy. It estimated that piracy has doubled the cost of hull insurance.

In calculating the global costs of maritime piracy, we take the largest insurance premiums related to piracy (war risk and K&R) and multiply these rates by 90% of the total ship traffic transiting the high risk region of the Gulf of Aden (around 30,000 ships). We deduct 10% of ship traffic under the assumption that this proportion of ships opts to reroute around the Cape of Good Hope, and is therefore not liable for insurance premiums in the war risk. This gives us a figure for the total amount payable for war risk insurance and K&R insurance if all ships purchased this insurance. Under the assumption that not all ships purchase insurance premiums, we then work out a lower bound estimate of 10%, and a higher bound estimate of 70% of ships purchasing insurance.

3.1.4 The Cost of Re-Routing

For some vessels, especially low and slow- moving ships, which are at the greatest risk of piracy attack, avoiding risk zones altogether may be a safer or cheaper option. For example, some ships may opt to avoid the risk of transiting through the Gulf of Aden and Suez Canal, and instead take the longer voyage around the Cape of Good Hope. While robust data on the proportion of ship owners and masters who re-route their vessels via this longer route is not readily available, some companies have announced that they are diverting their fleet. For example, AP Moller-Maersk, Europe's largest ship owner, is diverting all 83 tankers, as are the Norwegian Stolt tanker fleet, Odfjell shipping group (with a fleet of 90 tankers), and Frontline, one of the world's major oil carrier companies. We also know that Egypt's Suez Canal revenue (fees collected from ships transiting the Suez Canal) has decreased by 20% in the past couple of years. We hypothesize that around half of this figure (10%) is a result of reduced shipping volume related to the recent global economic downturn. Therefore, we speculate that around 10% of shipping traffic avoids transiting this region as a result of the threat of piracy. Re-routing ships via this longer voyage also has its costs. Routing a tanker from Saudi Arabia to the United States via the Cape of Good Hope, adds about 2,700 miles to the voyage. A re-routing from Europe to the Far East will add almost six extra days to a journey for a liner and up to 15 to 20 days

for a cargo ship. This excess duration of transit time reduces a vessel's annual voyages from six to five, equal to a 17% reduction in its yearly delivery capacity.

The OEF Cost of Piracy Model uses data from the U.S Department of Transport Maritime Administration (MARAD) and the Baltic and International Marine Council (BIMCO) for a 10,000 TEU (Twenty Foot Equivalent Units shipping container) and a 300,000 DWT (Dead Weight Tonnage) VLCC (Very Large Crude Carrier), to estimate the costs of re-routing each ship, per day. We then multiply each of these figures by the average number of excess days various rerouted voyages take to complete. We find that the average number of days is around ten. Note that the Cost of Piracy Model allows for this figure to be altered by the user to adjust the overall calculation of the cost of re-routing. Using our assumption above that 10% of ships opt to take the longer route, we work out our lower bound estimate by multiplying the cheaper ship to re-route (the 300,000 DWT VLCC) by 10% of ships transiting the Gulf of Aden region (3,000 ships), which amounts to around $2.34 billion per year. We then do the same for the more expensive ship to reroute (the 10,000 TEU ship), which amounts to around $2.95 billion per year. Therefore, we make a rough estimate that the shipping industry pays around $2.3 to $3 billion per year to re-route ships to avoid piracy each year.

3.1.5 The Cost of Deterrent Security Equipment

Ship owners may also attempt to protect their property and crew from pirate attacks by preparing their ships with security equipment and/or personnel prior to transiting a high-risk zone. Robust data on the proportion of ships purchasing deterrence equipment, and the type of deterrence equipment, is not easily accessed. Nonetheless, average costs of deterrence equipment and personnel are quite high

The OEF Cost of Piracy Model estimates that if a ship were to purchase all forms of security equipment and personnel, on average, they would pay around $134,000 per transit. We then multiply this by 90% of the total ship traffic transiting the Horn of Africa. (We deduct 10% of the total shipping traffic, under our earlier assumption that this proportion might opt to re-route around the Cape of Good Hope, therefore avoiding having to purchase security equipment to transit the high-risk piracy zone of the Horn of Africa.)

Just as we did for the cost of insurance premiums above, we approximate a lower bound (10% of ships) and an upper bound (70% of ships) estimate, for the total cost of deterrence equipment to the shipping industry. We calculate that the total cost of deterrence equipment to the shipping industry is between $360 million and $2.5 billion, per year.

3.1.6 The Cost of Naval Forces

Over 27 countries currently contribute naval forces towards piracy deterrence. Most military and naval attention is devoted to the Horn of Africa, where the big three anti-piracy missions are focused: Operation Atalanta, Operation Ocean Shield and

Combined Task Force (CTF) 151. Operation Atalanta was launched in November 2008 by the European Union with the primary goal of protecting World Food Program vessels delivering aid to Somalia, as well as other shipping in the region. Operation Ocean Shield is a NATO initiative to protect shipping in the region, with a current mandate to the end of 2012. CTF 151 is a multinational task force established in January 2009 in the Gulf of Aden and the eastern coast of Somalia.

Together, the three military efforts make up over 43 vessels operating off the Horn of Africa and the Indian Ocean. We take the estimation given by the 2010 Government Accountability Office (GAO) report on Maritime Security, that one U.S. navy vessel costs around $82,794 to operate per steaming day. Multiplying this by the total 43 vessels deployed, and 365 days, we approximate the costs of these military vessels to be around $1.3 billion per year. Adding in the administrative budgets of the three major missions, along with additional independent expenditures from other nations, we come to a rough estimate of $2 billion being spent on military operations in the region every year.

3.1.7 The Cost of Piracy Prosecutions

 Under Universal Jurisdiction for piracy, any state can prosecute the crime, regardless of whether it has a direct nexus (e.g. nationality of the ship owner, nationality of the criminal, nationality of the crew), to the act. Due to the low prosecutorial capacity of countries where pirates originate (such as Somalia), the international community has lent financial support to regional countries to encourage them to conduct piracy trials, and in some cases, imprisonment. For example in recent years, Kenya and the Seychelles have signed Memorandums of Understanding (MoUs) with the European Union, United States, United Kingdom, Canada, Denmark, and Australia, stating their willingness to accept pirates for trial.

Improving prosecutorial capacity in regional countries has its costs. In May 2009, the United Nations Office of Drugs and Crime (UNODC) Counter Piracy Programme received $10 million in funds from the European Commission, the United Nations, United States and Canada, among others. Much of these funds are dedicated to building piracy prisons, such as the Shimo La Tewa prison in Mombasa, Kenya, as well as legal training and development.

It is estimated that the cost of piracy prosecutions each year by multiplying the average cost of criminal prosecutions in regional nations (i.e. Kenya, the Seychelles and Yemen), North America, and Europe, by the number of prosecutions occurring in each of those respective regions. From these rough calculations, we estimate that the cost of piracy prosecutions was around $31 million.

3.2 The Costs of Maritime Drug Trafficking

Even in the absence of instability, drug trafficking can destabilize the economy in several ways. First, inflows of illicit profits may inflate the currency and make legitimate exports less competitive, which is known as the Dutch disease. Second, drug traffickers may evade customs excises at the same time that their containers evade inspection, which allows them to under price their competitors and push them out of the market. Such unfair competition was a particular concern made public by the business community in Mozambique. Third, to launder money, drug traffickers may invest in real estate or front operations such as hotels, which can contribute to disproportionately expanded financial, real estate and construction industries and elevated real estate prices, increasing the costs of business across all sectors of the economy. Interviewees in Ghana, Liberia, Kenya, and Sierra Leone raised concerns about inflated real estate prices due to laundering drug proceeds in this sector. Finally, the illicit gains from drug trafficking may result in investment in non-productive sectors, encourage "conspicuous consumption at the expense of long-term development," and exacerbate unequal income distribution.

Efforts to ameliorate these economic impacts largely center around creating a financial and regulatory environment that supports legitimate business development and restricts illicit economic activities and money laundering. For example, development assistance could support passing and applying anti-money laundering legislation and safeguards based on the Financial Action Task Force (FATF),banking regulations, greater oversight into real estate and other sector development, and tighter regulation of businesses, investments and financial flows. Arguably the best approach to ameliorating the economic impacts of drug trafficking is to invest in governance efforts that deter DTOs from operating in a given country.

The social impacts of drug trafficking stem largely from the increased retail market and local consumption that the drug trade almost inevitably promotes in transit countries, even where local populations are poor. Retailers are able to offer their product in forms that their consumers can afford, such as crack or marijuana cigarettes laced with cocaine. Evidence from the case studies confirms this: problematic drug use is increasing along trade routes and affecting people with divergent backgrounds ranging from uneducated former child soldiers to private school students from relatively well-off families. In Africa, consumption of hard drugs is more common in urban or coastal areas. Interviewees in Ghana, Guinea, Kenya, Liberia, and Sierra Leone indicated that cocaine, including crack cocaine, and heroin are available on the streets, and the Report of the International Narcotics Control Board states that there is increasing level of cocaine and heroin abuse.

Drug-related flows affecting the Central Bank's international reserves are not explicitly reported in the official balance of payments. As currently constructed, the balance of payments does not report the main flows directly related to drug activities, such as opium and opiate exports, or capital outflows corresponding to investment of such revenues in foreign assets (including export receipts that do not enter the country). Other activities, such as imports of vehicles by drug traffickers or of food by opium farmers, which are statistically indistinguishable from non-drug related flows,

tend to be captured by the officially recorded trade data or as "unrecorded imports" which are estimated and included in official trade data. While the drug revenue financing these imports is not recorded, the imported goods purchased through illicit income are mostly captured in balance of payments data. Thus, an implicit discrepancy stems from the fact that while substantial drug-related net inflows (i.e. opium exports minus drug-related capital outflows) are not recorded in the current presentation of the balance of payments, this does not translate into substantial positive errors and omissions.

4 Interviews

This chapter contains two interviews from two different individual Seafarers. The first one Vlachogiannis Stergios is an experienced Second Officer and a soon to be Chief Officer and SSO. The second interview is from Mr. Tsigounakis Giannis which has served as SSO and also as a Chartering Manager at Maritime Shipping Companies. These interviews will give us insight on how a experienced SSO officer and a non security officer but well educated and trained react on security threats, which are the duties of each one and how they approach the different threats or possible threats they encounter.

4.1 Interview with Mr. Stergios

" Mr. Stergios Vlachogiannis to begin with, I would like to thank you for finding the time out of your busy schedule as a Second Officer to conduct this interview. Mr. Stergios what is your opinion about security as a whole?

" Security has become a hotly debated issue the past few years as new regulations keep coming into force for creating a safe working environment. In my opinion the governments should focus on creating safer ports and develop the existing ones resulting in a higher security. It is rather difficult for a crew member to address such issues. Proactive measures and regulations which would make the ports themselves safer and reducing the number of breaches of security would be a starting point. This issue can be resolved in different ways. For example any person boards the ship or even enters the port should have in ID card and be part of the port. It goes without saying of course, that we, the crew, need to be vigilant at all times and exercise utmost caution"

"That was a very interesting opinion. Mr. Stergios according to your company policy who is considered Ship Security Officer and what qualifications are required?

"In the vessels that I have worked the Master and the Chief Officer were considered Ship Security Officers. Needless to say that any officer needs to be trained and be

certificated regarding security. A necessary certificate for all officers is the "Ship Security Officer" certificate. This certificate focuses on the security threats, how to avoid them and how to react during the threat. Also High Risk Areas and Security Levels are thoroughly analyzed for a greater understanding. Apart from that, we receive both company and onboard security awareness training with various drills that truly test our preparedness and reaction at any given hypothetical scenario. Even though I am not still considered Ship Security Officer I undergo sufficient training since I strive to become one in the foreseeable future.

" Mr. Stergios during your career have you ever encountered any major security threat?"

"I have not had any major incidents, but as a second officer I regularly need to address breaches of security especially during cargo operations. These issues need not taken very seriously as they may result in major threats."

" I agree with you during cargo operation issues appear quite often. As a second Officer what are the counter-measures you need to take to ensure the safety of your vessel"

"That is a nice question. To begin with, at port stay there is a responsible Able Seaman at the entrance of the vessel with the critical duty of identifying and even searching if required, every person boards the vessel and if anything happens we have portable VHFs for communication. Also as a second officer I have the duty to accompany whoever wishes to go inside the vessel until they meet the person they request"

"It seems you consider unauthorized entry of high importance. What is your company's policy in case of stowaways and unauthorized entry?"

"Of course as mentioned before unauthorized entry can result in major threats for ship's safety. Stowaways and unauthorized entry are two different incidents with different procedures. In case of unauthorized entry, when we find the invader we inform local authorities and the proceed with the arrest. Stowaways, though, require far more extensive procedures. In most of the cases stowaways are found when the vessel is underway. Upon finding the person we immediately need to inform the Company Security Officer and Designated Person Ashore (CSO & DPA) and proceed according to their instructions and the Safety Management System of the company. Of course the local authorities need to be informed about the incident but it is unlikely

that the vessel will return since she probably has gone for hundreds of miles. In this scenario we need to provide the stowaway with a room to stay and of course food and supplies. Additional measures suggest interrogation as it is common that he not be the only one boarded the vessel without permission. The stowaway needs to be guarded constantly as he can hide again or even jump into the sea out of fear. Upon reaching the next port of call we need to inform the local authorities about the stowaway so they can take him and repatriate him.

"That indeed sound like a complicated procedure. One last question. During the past months there has been reported cases of drug smuggling upon your company's vessels. How has this changed the policy of the company regarding security threats?

" There were some unfortunate events lately, which reinforced company's policy and additional measure are currently being taken to avoid such incidents. To begin with, an even more thorough search of the vessel must be conducted before departure of the vessel as the places for someone to hide drugs are too many. Also the company informed that since these incidents became public, some of the vessels of the company underwent unscheduled security inspections from local authorities to determine whether or not there are drugs on board. This has resulted in more strict rules on the SMS regarding security and especially requires the crew to be vigilant at all times"

" That is a very helpful insight. Mr. Stergios thank you very much for the interview, you have been more than useful to my research"

4.2 Interview with Mr. Tsigounakis

" To begin with, I would like to thank you Mr. Tsigounakis for your help to this project. As a Ship Security Officer (SSO) what were your duties? "

" I served in merchant vessels for a period of seven years, I was Chief Officer in Bulk Carriers and SSO. I was charged with the duties of the SSO at the same tame as the ISPS CODE came into force, meaning 2003. I was in charge of enforcing the procedures necessary and I was on the vessel on the first Inspection by the Ministry Of Merchant Marine. It is well known that when a new code or a new international regulation comes into force everything is more strict and formal. My main duties were those described in the ISPS CODE such as the enforcement of the Ship Security Plan on the vessel, the definition of the restricted areas in every port in compliance with the appropriate security level, the training of the crew members regarding security and SSP as much as practicable because the SSP is confidential and it is preserved on the

vessel and of course the monitoring of the security levels of both the ports and the countries individually.

" Thank you captain. Well as an SSO have you ever faced and major security threat? "

"I would not classify it as major but it was quite significant. In Casablanca, Morocco we were attacked from some locals, possible stowaways, who may wanted to board the vessel. We countered it and soon after they attacked us with rocks. I informed the authorities and filled the Security Declaration Form and also I informed the Ministry Of Merchant Marine which Ministry demanded all the vessels under Greek Flag to increase their Ship Security Level to Level 2. After the incident that occurred on my vessel, apart from the Greek Flag vessels, every flag state decided that the Port of Casablanca will be treated with Security Level 2"

" That is very helpful. Do you think that current measures against security threats are sufficient? "

"No. I think that they are insufficient. The means available on the vessels are not enough for the substantial protection of the ship. For example in most vessels we don't have metal detectors. Long story short, we have no means to inspect the stevedores mainly which come from the port. Obviously I am not talking about Rotterdam or London but in cases like Port Sudan in which come on board a high number of stevedores we don't have the ability to inspect everyone so we don't know what they may be carrying.

" That is well understood. One last question Captain. Since you are Chartering Manager on Maritime shipping companies, how do security threats have affected the Merchant economy and the freight market? "

"For the 10 years that I have been Chartering Manager and Superintendent in Maritime Shipping Companies, I never considered that we were affected financially by this situation. I do accept that there is a rather accepted fear in some regions but this does not affect the freight market that much in comparison with Ebola or other factors."

"Well thank you very much Captain. You have been more than useful to my research."

Conclusion

The Maritime industry has suffered and still suffers damages due to security threats. In order to minimize the damages both the ship and especially the port facility need to strengthen the prevention measures in order to deter possible criminals to board and harm the vessel, the cargo and especially human lives.

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