Review of Maritime Transport Safety and Security Practices and Compliance levels: case studies in Europe and South East Asia

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Abstract

The security in transport has become a crucial issue internationally, especially after the terrorist attacks of September 2001 and even more recently. Maritime, along with aviation, is considered a sensitive and of high-risk transport sector, in terms of security. Moreover, topics related to safety in maritime transport have become very important over the past decades mostly because of the numerous maritime accidents putting in danger both human lives and the environment.

Taking into account the global dimension of maritime transport along with the fact that the participation of Asia in the world trade during the past decade has been substantial, this paper examines the current maritime safety and security practices in the two areas. Although Europe and Asia comprise two completely different worlds, the need for enhanced safety and security in maritime transport is common in both areas.

This can only be achieved through the application of high standards and regulations setting the prerequisites for safe and secure navigation. In this direction, a significant number of Directives, Regulations and Initiatives on maritime safety and security have been introduced by international and European organizations, such as the International Maritime Organization, (I.M.O.), the International Labour Organization (I.L.O.) and the European Union (EU).

In the framework of this analysis, the levels of compliance of European and Asian countries, regarding the international legislation, is examined while special emphasis is given on the problems and difficulties encountered during the implementation processes. Furthermore, a number of recommendations aiming to enhance the existing levels of safety and security in maritime transport in both examined area is provided.

Key words: Maritime Safety and Security, International Legislation, Policy, Europe, South East Asia

1. Introduction – Scope of the paper

The scope of this paper is to provide an overview of the issue of safety and security in maritime transport globally based on the outcome of an analysis held in the Hellenic Institute of Transport. The analysis presented in the next pages was based on thorough review and surveys that have been implemented in both geographical areas aiming to provide an overview of the current status of maritime safety and security in the examined areas leading to a comparative analysis between Europe and Southeast Asia over the examined topics.
This comparative analysis has emerged from the need to identify the gaps and missing links regarding critical issues (such as maritime safety and security) having considerable impact on the increasing trading relations between the two geographical areas. The aim of the analysis and of this paper is to map the current situation and to provide key recommendations for the improvement of the current situation in the area of maritime safety and security.

2. Safety and Security in Maritime transport

2.1. Overview,

During the centuries the sea has been always considered a potentially hazardous and dangerous working environment. Today, following the significant changes that took place in international trade and transport, ship operators face new factors as well as pressures. The structure of the global marketplace requires that goods and materials be delivered not only to the geographical location where they are required but also within a very precise timeframe. Goods in transit are carefully factored-in to the supply chain and, as therefore, the transportation industry – which embraces both shipping and ports – has become a key component of a manufacturing sector which sets its store by providing a complete “door-to-door” service.

As a consequence, safety and efficiency have become two sides of the same coin: accidents are not only undesirable outcomes in themselves; they also have a negative impact on the supply chain that is at the heart of the new global economy.

Following the above and taking into consideration the global character of maritime transport as well as the identified need for standardization in the processes which would lead to increased levels of safety and security, a number of International Organizations have been established aiming to create a regulatory framework for maritime transport. The most important of those is the International Maritime Organization, IMO; however it must be mentioned that there are also other associations involved in this field such as the International Labour Organization (ILO), International Organization for Standardization (ISO), Secure Trade in APEC Region (STAR), United Nations Economic Commission for Europe (UN-ECE), Container Security Initiative (CSI), Custom-Trade Partnership against Terrorism (C-TPAT) and Smart and Secure Tradelanes (SST).

2.2. The role of International Maritime Organization (IMO) and its regulatory framework

The main activities and tasks of IMO since its establishment have been to develop and maintain a comprehensive regulatory framework for international shipping. Its mandate was originally limited to safety-related issues, but very soon it has been expanded to include other issues closely interrelated with shipping such as environmental, legal matters, technical co-operation and many topics affecting the overall efficiency of shipping – such as for example how to deal with stowaways or how a cargo manifest should be transmitted to the authorities ashore; piracy and armed robbery against ships. Most recently IMO has focused its activities in the security topic which has obtained a key importance nowadays, following the recent terrorist attacks of 2001.

The main responsibility of IMO is to ensure the highest practicable and globally acceptable standards aiming to improve maritime safety and security and, help prevent marine pollution takes on a new dimension. The direct output of this work is a
comprehensive body of international conventions, supported by guidelines and recommendations addressing almost all activities taking place within the shipping industry.

The measures of IMO fall into three categories:

- Measures aiming at the prevention of accidents, casualties and environmental damage from ships in the first place. This category comprises of conventions setting standards for ship design, construction, equipment, operation and manning.
- Measures which try to mitigate the negative effects of accidents such as for example rules concerning distress and safety communications, the provision of search and rescue facilities and oil spill clean-up and response mechanisms, all fall into this category.
- Measures concerned with the aftermath of accidents and, in particular, with establishing a mechanism for ensuring that those who suffer the consequences of an accident – and this refers, in particular, although not exclusively, to pollution victims – can be adequately compensated.

The most significant Regulations/ Conventions applied by IMO regarding safety and security in maritime transport are:

- **Safety Of Life At Sea (SOLAS):** The SOLAS Convention in its successive forms is generally regarded as the most important of all international treaties concerning the safety of merchant ships. The first version was adopted in 1914, in response to the Titanic disaster, the second in 1929, the third in 1948, and the fourth in 1960. The main objective of the SOLAS is to specify minimum standards for the construction, equipment and operation of ships, compatible with their safety. Flag States are responsible for ensuring that ships under their flag comply with its requirements, and a number of certificates are prescribed in the Convention as proof that this has been done. Control provisions also allow Contracting Governments to inspect ships of other Contracting States if there are clear grounds for believing that the ship and its equipment do not substantially comply with the requirements of the Convention - this procedure is known as port State control. The current SOLAS Convention includes Articles setting out general obligations, amendment procedure and so on, followed by an Annex divided into 12 Chapters.

- **The International Ship and Port Facility code (ISPS):** It was established in 2002 and sets out detailed standards and requirements relating to the security of the ship and the immediate ship/port interface, within an international framework for cooperation among Governments and their agencies, local administrations, shipping companies, port authorities and aiming to detect security threats and take measures to prevent security incidents affecting ships and port facilities used in international trade. The ISPS Code entered into force on 1 July 2004 and non-compliance by either ports and/or vessels will preclude these from participating in international trade.

Nowadays, considerable progress has been achieved with the regulatory framework implied from all the regulatory associations and the IMO. However, there is still room for further improvements since not all countries comply with the regulations and international standards on maritime safety and security as presented following this paper.
2.3. Facts and figures concerning Maritime Safety

The overall safety level of shipping over the years has been steadily improving at a global level, as indicated to the facts and figures provided below:

According to casualty statistics produced by Lloyds Register of Shipping¹ between 1966 and 1985 there were never fewer than 300 ships lost annually, with worst years, 1978 and 1979, when together 938 losses occurred (around 6.7 ships per thousand in the world fleet). Those numbers began to decrease significantly in 1980 and has continued on a downward curve ever since. In 1990, the number of annual losses accounted less than 200, while, by 2004, the overall figure had approached the 100 mark (Figure 1). Nowadays, relatively few ships actually sink at sea. The vast majority of so-called “losses” are actually those which are damaged and “written off” by the hull insurers as being beyond economical repair - described by underwriters as “constructive total losses”.

Figure 1: Total ship lost 2000-2005 (source IMO Secretariat database, 2005)

The same trend is presented in the figures produced by the United Kingdom P&I Club, which insures around 20% of the world's ships. According to this source, similar reductions in insurance claims for third party liability, such as incidents involving personal injury, cargo damage, pollution or damage to property (e.g. other ships or port equipment) have been noted. The decrease in the number of large claims is all the more significant given the increasing value of claims that are made.

Finally, regarding the topic of environmental pollution, according to the International Salvage Union, the numbers of major ship casualties and significant pollution incidents have decreased sharply. In 1974 there were 26 oil spills in excess of 700 tonnes while in 2004, there were just five such spills.

As in all transport sectors, lives are sadly lost as a result of accidents. However, the loss of life in shipping is in fact relatively modest and the overall trend is one of reduction in the number of fatalities, which is all the more impressive in view of the growth in the number of ships in the world fleet. In the next table, data from LR/Fairplay relating to lives lost on cargo ships show a continuing downward trend – and this covers the entire international industry, which employs over one and a quarter million people, plus many more employed in coastal trades.

¹ and latterly by LR-Fairplay
Table 1: Lives lost at sea compared to total seafarers and passengers

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<td>Lives lost</td>
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<td>Estimated total number of seafarers &amp; passengers (*1.000)</td>
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Source: Shippax, IMO Secretariat data for 2005

2.4. Facts and Figures concerning Maritime Security

Further to the safety and its recognized importance in maritime transport, maritime security is a high priority topic today, as practices and procedures have had to adapt to demand for increased security surrounding shipping and ports, which has led to new international rules and regulations being established. Countries, which are involved in maritime transport and industry, all over the world, focus their activities in enhancing the safety of maritime transport and also in trying to follow the new ‘maritime security philosophy’, by ratifying an important number of international Regulations and Conventions.

Maritime security is an integral part of IMO's responsibilities. A comprehensive security regime for international shipping entered into force on 1 July 2004. The mandatory security measures, adopted in December 2002, include a number of amendments to the 1974 Safety of Life at Sea Convention (SOLAS), the most far-reaching of which enshrines the new International Ship and Port Facility Security Code (ISPS Code), which contains detailed security-related requirements for Governments, port authorities and shipping companies in a mandatory section together with a series of guidelines about how to meet these requirements in a second, non-mandatory section.

It must be noted that besides the overall security concept, the sector of shipping in general and IMO in particular strongly concern about acts of piracy and armed robbery against ships which are mainly occur in the area of Asia (Figure 4). The fight to prevent and suppress these acts is linked to the measures to improve security on ships and in port facilities, adopted in December 2002. A statistical overview of the piracy incidents and their consequences from the year 2000 to 2005, is provided in the following figures.

Figure 2: Piracy incidents globally (Source IMO)

2 The ratio of lives lost compared to the estimated total number of seafarers and passengers is infinitesimally small, and therefore not presented in the table.
Based on the results of a recent study conducted by the International Chamber of Commerce (ICC) International Maritime Bureau (IMB), the reported piracy attacks (data 2006) world-wide are on the decline. The IMB report also notes that the Malacca Straits – which is considered one of the most dangerous areas in terms of piracy attacks - have been dropped from Lloyd’s of London’s list of dangerous waterways. However, there are still some ‘hotspots’ remaining such as for example Indonesia which still accounts more attacks than any other country, consolidating its position as the world’s hottest piracy hotspot. Therefore, there is still room for further amelioration especially in the more sensitive geographical areas such as SE Asia. The experience from the regulatory framework of Europe can provide a threshold for towards this direction and this is the purpose of the comparative analysis in the paper.

3. The European maritime policy towards safety and security

3.1. Overview of the European maritime policy towards safety

The notions safety and security are two of the main elements comprising the overall European maritime transport policy. The presentation of the European Policy on Maritime Safety that follows is based on official EU information mostly published on a dedicated session of the official website of European Community.

The main goal of the EU maritime safety policy is to eradicate substandard shipping essentially through a convergent application of internationally agreed rules.

At the area of maritime safety only a few legislative decisions were taken in the period 1978-1992 at Community level while the real start of the maritime safety policy occurred in 1993 through the adoption by the Commission of its first communication dealing with maritime safety: “A Common Policy on Safe Seas”.

The main reason for this breakthrough were the accidents with the oil tankers "Aegean Sea" which broke up near the entrance of La Coruna harbour (Spain) on December 3 1992 and "Brear" which grounded off the Shetland Island on January 5 1993 together with the abandoning of the unanimity rule for the maritime decision making process on January 1 1993.

In the following 5 years and as a follow-up of the above mentioned Communication as well as an implementation of a detailed action programme, a number of important legislative acts were proposed and adopted which remains the core of the EU’s maritime safety policy.

Although the number of legislative acts was increased, new tragedies that occurred in European waters, initiated additional actions focussing on specific shortcomings. After the "Estonia" tragedy, the Community adopted a comprehensive set of rules for
the protection of passengers and crew sailing on ferries operating to and from European ports, as well safety standards for passenger ships operating on domestic voyages within the Community.

Finally two important accidents namely the «Erika» and the «Prestige», obliged the Community to revise its existing rules and to adopt new rules concerning single hull tankers for the prevention of accidents with oil tankers.

3.2. Overview of the European Policy on Maritime Security

Recent events have shown that no country in the world is immune from terrorism. The terrorist attacks of September 2001 in New York and Washington modified probably forever the way security is approached in the transport sector. The use of transport vehicles as actual weapons of destruction targeting both passengers in the vehicles and individuals located in the target buildings exposed a whole new degree of vulnerability within the transport system.

Well before these terrorist strikes on the United States, transport infrastructure and equipment has been the target of terrorist action for a number of reasons, mostly because:

- it is relatively accessible
- it can attract significant public attention and media coverage
- it is often linked with national symbols such as national airlines
- it can affect large numbers of people in a single strike.

It is important to notice that “Whatever the reasons behind them, acts of terrorism can be committed at any time and in any place and shipping is no exception”. This issue is, alas, very important for the European Union while many of the EU Member States have taken steps to protect their citizens and modes of transport.

The major risk categories of transport systems as identified by the European Community along with the proposed and implemented measures and actions aiming to enhance maritime transport security are described in the following paragraphs.

3.3. Weaknesses, Risk categories, Potential threats and Proposed Measures

The major weaknesses - risk categories of freight transport security, according to the EU, can be summarised to the following three:

- Threats to key Infrastructure: Measures have been proposed at the European level to secure airports and ports. However there is no co-ordinated approach to secure other key transport infrastructure (such as major terminals, railway lines, bridges and tunnels) essential to the functioning of the European economy.
- Lack of common security standards: Today, the various actors mostly in surface transport implement different measures in different ways while there are no minimum-security standards for many international transport service providers.
- Lack of co-ordination or control of national activities: As each Member State relies on the checks and procedures in other Member States, to assure their security, it is obvious that agreed standards are effectively and transparently applied.

Emphasising in Maritime transport, the vectors of risk to terrorist attack, inherent to maritime shipping, include:
**The Ship:** any ship can be deliberately used as a weapon or be a carrier of weapons of mass destruction, or even the innocent carrier of inappropriate cargo, unless appropriate security and control measures are taken. Terrorist acts against a ship are possible, in particular by using another boat or from inside the ship by stowaways or terrorists who board the ship by force. Passenger vessels are particular targets because of the number of lives that can be immediately put in danger. Freight vessels are no less vulnerable and can be dangerous carriers. The very nature of cargoes or hazardous substances could prompt terrorists to attempt to blow up such vessels, e.g. in port areas, with horrendous human and environmental consequences. Moreover, the illicit transport of nuclear, bacteriological or chemical products by sea cannot be ruled out, for subsequent use against the country of destination of the cargo.

**People/Cargo:** attacking the ship to provoke human casualties, using cargo to smuggle people or weapons, to transport conventional, nuclear, chemical or biological weapons; using the cover of seafarer identities to insert terrorist operatives;

**Financial Terrorist Activities:** using revenue from shipping to fund terrorist activities; using ships to launder illicit funds for terrorist organizations.

4. **Maritime policy towards safety and security in Southeast Asia**

4.1. **General status of Maritime safety and security in Asia**

Safety of life at sea and in the port area, following the international trends, is seriously concerned in the Asian Countries. The controlling tasks on this issue in both Europe and Asia, are under the responsibility of governmental bodies and authorities.

In most Asian countries responsible authority for the maritime safety issues is the national Maritime Department (usually under the Ministry of Transport). These organizations basically control safety and security in maritime transport by following international regulations such as the IMO regulations (including the ISPS code) and the Custom Security Initiative (CSI).

An important issue is the level of the private sector participation in the above-mentioned controlling tasks. The Asian countries tend to not much allow this participation trying to put most of these activities into the hand of governmental agencies from the central government. On the other hand, the EU countries have allowed up to a certain extent the participation of the private sector. For instance, several countries in Europe (such as France and United Kingdom) have allowed the provision of pilotage services by private organizations under the administrative jurisdiction of the responsible Ministry for Merchant Marine while in the case of most Asian countries these activities around the country are still strictly performed by the Harbour Department or the Maritime Department which is under the Ministry of Transport.

It is also important to notice that all Asian countries realize that the environmental problem has become more and more serious while the transport industry is one of the major sources of the pollution across the world. They have all implemented some measures and regulations, which are quite the same, in order to solve and prevent the pollution in both land and sea transport, including the areas of port industry and international shipping.
4.2. The case of Southeast Asia

Today more than half of the world’s annual merchant tonnage traverses Southeast Asian waters; its oceans and seas yield vast revenues in such industries as fishing, hydrocarbon extraction, and tourism. In fact, more than 60 percent of Southeast Asians today live in or rely economically on the maritime zones. Asia sends more than 30% of its exports to US markets, and a further 15-20% to Western Europe. However, the sea is also the source of a variety of dangers that not only menace the prosperity of local populations, but directly threaten the security of states.

Those dangers include territorial disputes, nonstate political violence, transnational crime, and environmental degradation. Unsecured or ungoverned seas are potential havens for criminal or terrorist activity, providing relatively cheap and inconspicuous movement. The thousands of miles of coastline that the Southeast Asian Countries have, are often difficult to regulate. The threats of piracy, armed robbery and terrorism have become a common problem for most of the countries in Southeast Asia and maritime security, accordingly, is at the forefront of Southeast Asian political concerns.

At the other hand, the power of environmental phenomena is unquestionable, given the recent memory of the December 2004 Indian Ocean tsunamis that killed (according to estimates at the time of publication) well over two hundred thousand people. In addition, environmental damage not only causes direct harm to land, water, and populations but can precipitate tension or conflict within or between states.

This being the case, resource depletion and human degradation of the environment has been recognized as directly relevant to Southeast Asia’s security agenda.

4.3. Level of Compliance with the International regulations

Unlike the European case the Asian maritime policy can be characterized by a lack of a common framework (such the EU regulations) while regarding the implementation of maritime safety and security related legislation, the main international IMO conventions are not applicable in all countries. In table 2, the level of compliance from the each SE Asian country is provided.

Table 2: Compliance level of the SE Asian Countries with the international regulations

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Source, IMO

The differences in the compliance levels, result to an obscure situation in maritime transport which hampers the smooth maritime trading relations between the countries.

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Moreover, each country applies different rules according to its own safety and security standards. Indicative example is Singapore’s Maritime and Port Authority which requires all ships intending to call at the republic’s docks to complete a security form 24 hours before arrival. Vessels failing to do so will not be permitted to unload.

It must also be noted the fact that large exporters like Thailand and Indonesia are especially at risk, as they generally rely on foreign-flagged vessels to transport their goods with limited or undefined standards. Therefore, the need for enhanced and common safety and security standards in the above area is considered crucial for the SE Asian countries.

4.4. The Piracy problem in SE Asia

As mentioned previously, the piracy is an important issue of maritime transport globally. Following to the annual piracy report 2004 of the ICC International Maritime Bureau “Pirates preying on shipping were more violent than ever in 2004 and murdered a total of 30 crew members, compared with 21 in 2003”.

The number of attacks reported worldwide through the IMB Piracy Reporting Centre in Kuala Lumpur was 325, down from the 445 recorded in 2003.

Indonesian waters continue to be the scene of the highest number of attacks, with 93 incidents reported in 2004. While this is down from 121 in 2003, it still accounts for more than one quarter of piratical attacks reported worldwide.

The report said hijackings of tugs and barges and the kidnapping of crew members were on the rise, especially in Indonesian waters, in the Northern Malacca Straits, and off North Sumatra. While in the past these attacks had been thought to be acts of Aceh rebels, there were now increasing signs that crime syndicates are using fishing boats for such attacks. Figure 4 below illustrates a map of piracy attacks and armed robberies in Southeast Asia.

![Map of piracy attacks and armed robberies](image)

Maritime agencies are known to be concerned by the lax approach to security in Asian ports, which have a high exposure to piracy attacks, often linked to ethnic-based insurgency movements. However, it must be noted that around 30% of the world’s trade, equivalent to 50,000 vessels a year, is shipped through the Straits of
Malacca between Singapore, Malaysia and Indonesia, which is also the sea passage that witnesses the most piracy incidents.

The International Chamber of Commerce's Maritime Bureau lists Indonesia as having the world's most vulnerable ports to piracy, with Bangladesh's Chittagong docks holding down second place. There were 121 reported piracy attacks in Indonesian waters in 2003 and 58 in Bangladesh. Malaysia, Thailand, India and Sri Lanka also are highly vulnerable, partly because of lax security but also due to an official tolerance of flourishing smuggling trades.

5. Comparative analysis

Asia and Europe are two completely different areas not only in terms of geography and population but also regarding working culture, current level of development as well as other aspects. The development and evolution of maritime freight transport as well as the enhancement of maritime industry competitiveness, is a common goal for both areas, taking into account several problems that have been encountered, preventing the development of sustainable, effective, secure and environmentally friendly transport systems. Following this point of view, safety and security in maritime transport is very important for both Europe and Asia.

The analysis of maritime safety and security was based on an in depth research of the current situation in both areas in terms of legislation adopted and implemented but also in terms of relevant policies, actions and initiatives under the umbrella of the examined topics.

The main concluding remarks following this overview can be summarised to the following:

- In both Europe and Asia, responsible for maritime safety and security issues are the governmental authorities, which are usually national Ministries of Transport or other relevant sectors. However the participation of the private sector in the controlling tasks of maritime safety and security issues seems to gain ground in the case of many European countries. At the other hand, in the Asian countries, those activities still remain under the strict control of the government.
- Europe focuses its activities in the development of technologies for the needs of maritime safety and security but also pays attention in the cooperation between its member states. Indicative is the example of the Safe Sea Network development that aims at reinforcing the cooperation and the data exchange between the EU countries facilitating the maritime safety and security related activities.
- The current EU maritime safety and security policy is focused in the research by supporting and financing an important number of EU research projects in this area. At the other hand the Asian countries seem to start following the same approach by participating in projects and initiatives such as the BEST project (Bangkok/ Laem Chabang Efficient and Secure Trade) and the STAR initiative (Security Scheme in APEC Region) in cooperation with other countries outside Asia and especially the United States that has an important background in safety and security issues.
- An important element of transport security where, recently, emphasis is given is the container transport security and especially maritime container security. The main reason is that maritime containers are the most numerous container types involved in international trade and they are carried by maritime, inland waterway,
road and rail operators. The generalized concern regarding the use of shipping containers is mostly because of the potential for these to be used by terrorists as a delivery vehicle for a chemical, biological, radiological and nuclear (CBRN) weapon.

- The notion of transport security is very important internationally (especially after the recent terrorist attacks of 11th of September 2001). Nowadays, there is a need to enhance the security of the entire maritime transport logistics chain from the supplier to the consumer. Consequently, since the security of a transport chain depends upon its weakest link, an approach addressing the multimodal dimension in parallel will make it possible to improve the security of transport as a whole. Towards this direction, the companies involved to the different levels of a supply chain will be encouraged to take measures for ensuring high security levels in the whole supply chain. This consideration will help in eliminating the time and money spent in the key-nodes of the supply chain (such as port, borders etc) by facilitating the process of security control.

6. Key recommendation and Conclusions

The analysis that took place included an in depth review of the current situation in Europe and Asia, surveys and interviews with key experts from maritime transport such as ports, maritime authorities etc, aiming to identify the problems and needs of those countries in the examined topics. Following this work, several important suggestions and recommendations have been emerged aiming at a more effective and efficient implementation of the international regulations, conventions and standards over the two examined topics which are expected to further strengthen maritime transport safety and security.

6.1. Southeast Asian countries

Based on the identified problems and needs of S.E Asian countries, it is quite obvious that maritime security is considered as top priority topic. This applies especially for the Malacca Strait countries, which are considered as high-risk areas in terms of terrorism and piracy. At a strategic level, the development of a ‘One-Roof approach’ should be taken into serious consideration, since it looks like to be the best option for the time being looking at the current conditions. One-Roof Coordination and integrated supervision is also expected to reduce if not eliminate integrity problems.

Taking into consideration the particularities of each S.E. Asian country in terms of population structure and educational level, any security initiatives have to be given enough time to be socialized and introduced to all stakeholders before launched into full implementation. This process must involve all stakeholders, authorities and a wide range of users (e.g. labor unions), should also be in a regular basis and continuously updated following any changes made, if any, at all times. It must be pointed out that there is a need to gradually advance the maritime security awareness from a national to regional and then to an international level.

At a technical level, the use of internet-based wireless technologies is seen as a way of improving the current level of security in the Asian ports. Using wireless technology, the coverage area can be expanded, the tougher spots can be reached and consequently the security measures can be more effective. Furthermore, it must be stressed that important parameters for controlling security in ports are the road connections with the hinterland and especially the condition of the road network.
An important finding of the analysis that took place, regarding the safety topic, was the fact that most countries in the region lack the necessary human resources to construct, supervise and manage maritime safety and environmental protection actions and facilities.

According to the analysis presented previously and following the recent physical disaster of Tsunami, the need of a national disaster committee chaired by a person, such as the Prime Minister, who will have the power in both command and budget approval is a key priority.

Additionally, a master plan addressing issues related to safety and protection of the environment has to be devised, special units for safety operations have to be introduced in the organizational structure of the organizations undertaken the safety enforcements and all nine classes of dangerous goods have to be monitored in the ports and maritime transport. In most of those countries, overlapping and ineffective cooperation on the implementation of the legislation and jurisdiction related to maritime safety and environment protection in most SE Asian countries have been experienced.

At a higher level, the SE Asian countries consider that their position inside the IMO must be strengthened regarding the topics of safety and security. A stronger representation of their interests could influence their positions and create more lasting and tangible benefits for the countries and their competitive roles.

Finally, the national governments should set common levels of safety standards and implement a strict audit to all ports of the countries. Towards to this direction, a Legal Framework for the S.E. Asian countries in the area of maritime safety could be proven a helpful tool as long as it would take into consideration the particularities of each S.E. Asian country.

6.2. European Countries

Concerning the situation on Europe, the regulatory framework in maritime safety and security is mainly implied by the Maritime policy of EU, which the majority of the countries follow. The main points that have emerged from the analysis that need to be further assessed in order to improve the situation in Europe are the following:

- The cooperation between the European countries (members and non-E.U. member states) parties involved in an incident should be strengthened.
- Many officers have highlighted the overall involvement of the E.U. in order to enhance security levels in the member states. For example, the E.U. financial support for the implementation of the security measures required by the ISPS code is very important for the European countries.
- The security fee is a major issue for all European countries. According to ESPO, in two thirds of the EU member states, only rough estimations of the costs resulting to the implementation of the ISPS costs are known. An important recommendation is the conduct of economic analysis providing sound estimations of the security fees in order to facilitate both ports and governmental authorities in the allocation of the relevant costs. However, the view of the Shipowners is not clear in this topic.
- A central European marine casualty database will provide a common means for processing and analysing casualty data in Europe, based on a taxonomy (classification system) developed by the European Maritime Safety Agency (EMSA) in cooperation with the E.U. Member States. The data base, known as EMCIP, will
facilitate decision making in improving investigation methods, and will thus contribute to improved safety and pollution prevention at sea.

7. REFERENCES

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