Ports Security Organization and Functionality – Implementation of The ISPS Code In Medium And Small Countries

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Abstract. The paper deals with the implementation of security measures in small to medium developing countries. Based on Croatian experience, it examines possibilities for efficiently combining security measures that should be implemented in SOLAS ships and ISPS compliant ports with those appropriate to non-SOLAS ships and ports where measures defined in the ISPS Code are not mandatory. Finally, it examines measures promoting a more extensive use of information technologies, particularly information fusion and dedicated decision support systems, in order to enhance the level of maritime security and protection from illegal activities at sea and in ports.

Introduction

Throughout the centuries, as well as in the current day, maritime transport has been exposed to a variety of security threats. Among these, the most prominent threats are piracy, robbery attacks, terrorist attacks, smuggling, human trafficking and illegal migrations. Regardless of their particular nature, these threats directly and significantly influence merchant ships and ports. In order to prevent and/or mitigate these threats, particularly those that exploit inherent weaknesses in ports and on board ships, the International Maritime Organization (IMO) adopted a standard set of harmonized measures in 2004. Aiming to reach global coverage as soon as possible, these measures were incorporated into the SOLAS Convention 0 as a separate chapter. The regulations stipulated in the Convention are further specified in the International Ship and Port Facility Code (ISPS Code) 0. The shipping industry was for the first time provided with mandatory instruments for dealing with security issues, and clearly defined security measures and standards, at sea as well as alongside.

The standardization of security measures at the global level could have both a potentially positive and negative impact on security protection. Harmonized measures are significantly easier to implement, particularly in the shipping industry's

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multicultural environment. Consequently, the implementation of security requirements onboard ships goes smoothly, on time and as anticipated. Effective implementation varies significantly in port facilities of different countries, and numerous difficulties arise, caused by limited economic potentials, differing positions on the status of the national and international maritime security system, and disparate understanding of which mitigation measures should be accepted as appropriate.

In this respect, developing countries such as Croatia with a long coast, many ports, and a relatively developed maritime transport system, face a number of challenges in terms of the efficient implementation of prescribed security measures. The issues specific to those countries are discussed in the following sections, based on Croatian experiences.

1. Croatia – Security Background

Croatia is a southern Central European country. It borders Slovenia and Hungary in the North, Serbia in the Northeast, Bosnia and Herzegovina in the East, and Montenegro in the far Southeast. Its Southern and Western flanks border the Adriatic Sea, and it shares an ocean border with Italy and Slovenia in the North and with Montenegro in the South. Its mainland territory is split into two non-contiguous parts by the short coastline of Bosnia and Herzegovina, around the small town of Neum. Total length of the Croatian border is 1.982 km.

Croatia became an independent country in 1990 when it adopted its new Constitution. In the following years, it became a member of the United Nations, the Organization for Security and Co-operation in Europe and the Council of Europe. Unfortunately, between 1991 and 1995, Croatia was involved in the war led by the Yugoslav National Army and rebellion groups from Serbian enclaves, strongly supported by the Serbian government. During wartime, maritime trading almost completely ceased. Land borders were not protected and the transfer of people and weapons, both legal and illegal, was considerable. Even a few years after the war, the security situation did not improve appreciably due to much more brutal war operations in the neighbouring Bosnia and Herzegovina and later in Kosovo.

Today, the economic and security situation has been significantly improved. Croatia is a candidate for membership in the European Union and received a NATO membership invitation in 2008. It is expected to formally join NATO in 2009, making it the second former Yugoslav republic to join the NATO following Slovenia, which entered in 2004. Since October 2007, Croatia became a non-permanent member of the United Nations Security Council for the 2008-2009 terms. However, the neighbouring politically and economically unstable countries, Bosnia, Herzegovina and Kosovo, still influence the security situation in the region and have to be taken into account when assessing the maritime security situation.

Offshore Croatia consists of over one thousand islands varying in size. The largest islands are Krk and Cres (approximately 400 km² each), both located in the northern part of the Adriatic Sea. The major ports open for international trade are Rijeka, Split, Dubrovnik, Ploče, Zadar, Šibenik and Pula. During the year approximately 240.000 merchant ships are accommodated in Croatian ports, carrying more than 30 million tons of cargo and more than 26 million passengers. Among these are also approximately 900 cruise ships per year and almost 1.0 million people visiting Croatian ports on cruisers yearly. The majority of these ships visit the port of Dubrovnik,

particularly during the summer season, and count for almost 10% of all tourists visiting Croatia. In addition, approximately 900.000 foreign tourists sail along the Adriatic coast on different types of yachts and recreation boats yearly.

2. The Croatian Maritime Security System

2.1. Legal Framework

ISPS Code implementation started in Croatia in the second half of 2003. It was initiated and later coordinated by the Ministry of the Sea, Transport and Infrastructure. The first step was to involve major stakeholders, in particular shipping companies, harbour master offices, port authorities, potential recognized security organizations (RSO), educational organizations, and maritime agents and to ensure their support for planned activities.

The second step was to develop a legal system compatible with ISPS Code requirements 0, but taking into account the existing national transport system, capabilities and functionalities of major ports, capabilities of existing organizations responsible for national security, as well as characteristics of present and near-future maritime traffic in the area. The job was assigned to a group of experts under the supervision of the Ministry.

The developed legal framework was laid down in the Law on Security of Merchant Ships and Ports Open for International Transport 0. It entered into force in April 2004. Finally, following the formal familiarization of the administration staff with new regulations in 2004, as the last step, the education of ship, company and port facility security officers has commenced.

According to the Law, the Ministry of the Sea, Transport and Infrastructure plays the most important role in carrying out security measures. It is responsible for organizing security infrastructure, communication channels, and related reporting, organization and inspection. Figure 1 represents the organizational structure responsible for maritime security issues.
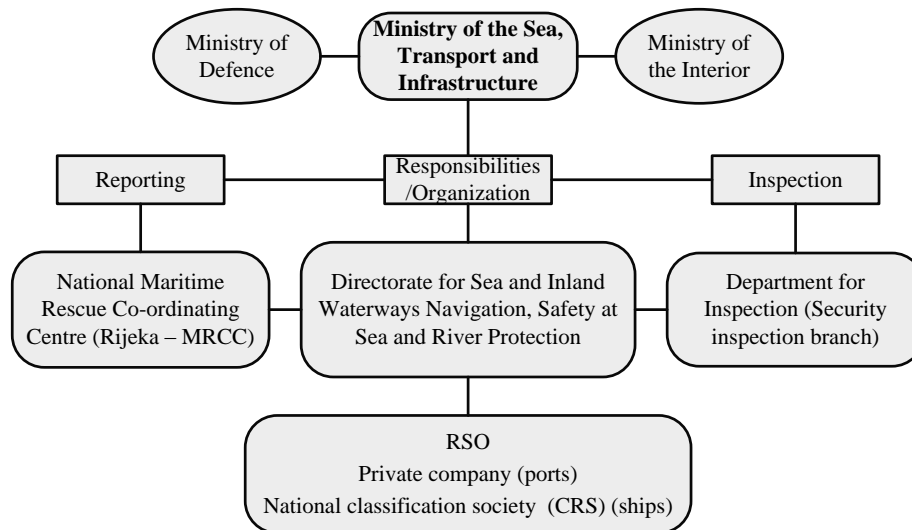
Figure 1. Croatian national ISPS framework

The Ministry of the Interior is responsible for setting up the security level in ports. If the security level changes, the Ministry of the Sea should be informed as soon as possible. Then, information on the new security level will be conveyed (in less than 60 minutes, as a rule) to all appointed Port Facility Security Officers (PFSO), harbour masters and to the person responsible for publishing Notices to Mariners. The National Maritime Rescue Coordinating Centre is responsible for information exchange as well as for communications with ships at sea.

This system has served its purpose since its introduction. Consequently, the legal framework has not been changed since 2004. However, a need to amend it arose in 2008 with the establishment of the Croatian Coast Guard within the Ministry of Defence. It is to take over some responsibilities of maritime border control and as such has to be formally included in the system. Also, some lessons learned during regular exercises in port areas as well as with shipping companies will be considered during the planned revision of the Law in the second half of 2009.

2.2. Ports Status and Security Issues

Croatia has a long and well-indented coastline with many islands. This configuration led to the development of numerous cities and ports along the coast as well as on the islands. Generally, the present economic and legal system in Croatia divides all ports according to size, economic importance and ownership, as well as according to ship types they can or usually do accommodate. The system implemented in Croatia is essentially similar to systems in place in numerous other countries.

The major ports (i.e. Pula, Rijeka, Zadar and Šibenik, Split, Ploče and Dubrovnik) are managed by their respective port authorities. Port authorities are established by the Government and are responsible for the steady economic development of port areas assigned to them. Port areas consist of one or more port terminals, geographically positioned in different locations. Each port authority has at least one Port Facility Security Officer, responsible for ISPS implementation and security-related issues within port authority limits.
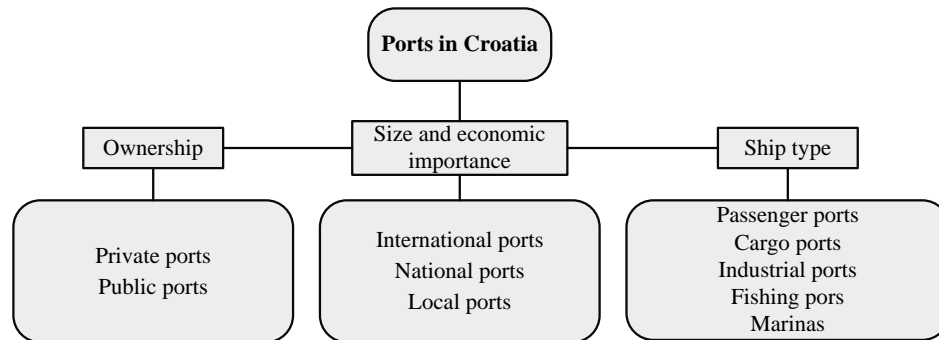
Figure 2. Ports organization structure

County port authorities are responsible for national and local ports within county borders. There could be one or more county port authorities in each county – usually each county port authority covers ports within an economically or geographically coherent area such as a large island. The ports assigned to a county port authority are fishing ports and local ports (boats, yachts and small recreational ships), and ports used for national passenger transport. However, since ISPS ships call at these ports only occasionally[2], only one PFSO is usually appointed per authority and is responsible for all ports in the area.

Besides public ports open to all ships in accordance with rules set out by the government, there exists a group of privately owned ports dedicated to accommodating only ships connected with particular activities and operated under concession agreement. The most important ports in this group are industrial ports (cement factories, refineries…), shipyards and marinas. If allowed to accommodate SOLAS ships, then each of these ports must have at least one PFSO. Consequently, most small shipyards and marinas are "outside" ISPS regulations since they are not allowed to accommodate ISPS compliant ships.

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[2] Usually, such small local ports occasionally accommodate smaller cruise ships that are ISPS compliant.
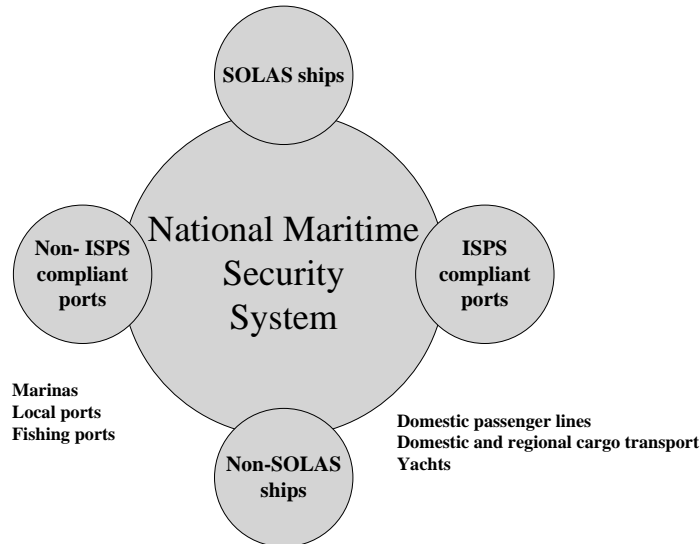
Figure 3. National maritime security system

Harbour master offices are responsible for navigation safety and pollution prevention, not only at sea but in ports as well. Consequently, together with representatives from the Ministry of the Interior, they are responsible for supervising all activities that in any manner affect the security status in ports 0. Their area of responsibility is defined by county borders, and they are responsible for all ports within these limits regardless of status.

Regarding traffic volumes, the following ports are considered as the most important ones:

- Rijeka and Ploče – general cargo and container terminals,
- Dubrovnik and Split – cruising and national passenger ports,
- Omišalj – oil terminal,
- Dina – chemical & LPG terminal (including the new LNG terminal proposed).

The ports of Rijeka and Ploče are the largest cargo ports in the country. More than 5.2 MT of dry cargo (in 2007) is loaded or unloaded in the port of Rijeka annually. The most prominent cargo is dry bulk cargo (3.2 MT) followed by containers (more than 150.000 TEUs). The port of Ploče had a total of 4.2 MT dry cargo in 2007. The major share belongs to bulk cargo, with modest quantities of other cargoes. While the port of Rijeka serves, beside Croatian exporters and importers, customers from a wider area, including Austria, Hungary, Czech Republic and Slovakia, the port of Ploče is almost entirely oriented to customers from Bosnia and Herzegovina.

The port of Dubrovnik is the biggest Croatian port and one of the principal cruise ports in the world, with more than 800.000 passengers every year. Almost all passengers arrive on board large cruise ships, mostly during the summer season when up to nine large cruise ships call in the port daily. The port of Split on the other hand is the largest national passenger port with 3.6 M passengers per annum.

The crude oil terminal located in the bay of Omišalj on the island of Krk has an annual throughput of about 7 MT of crude oil. Administratively, it belongs to the

Rijeka Port Authority. Its main task is to supply crude oil for neighbouring refineries as and other inland customers in Croatia and in neighbouring countries through the JANAF oil pipeline. In its immediate vicinity is the Dina chemical & LPG terminal, where, in addition to existing capacities, a large LNG terminal is expected to be built. This new LNG terminal is expected to accommodate approximately 180 ships per annum.

3. Maritime Port Security Issues in Developing Countries: The Case of Croatian Ports

Being a Mediterranean country, Croatia faces more or less the same challenges as other neighbouring countries. From an organizational standpoint, the most demanding requirement arises from the significant difference between ISPS-compliant ports and ships on one side, and non-ISPS ports and ships, on the other. Security measures in ports open for international trade are well defined in the ISPS Code, both with respect to organization and responsibilities, and to procedures 0. In addition, the volume of trade and the number of ships in these ports normally justifies the investment in personnel and resources, resulting in a relatively satisfactory level of maritime security and protection against illegal acts.

Ports not covered by the ISPS Code must cope with much more serious challenges. As a rule the number of ships visiting these ports is much smaller, thus making investments in personnel and resources unreasonable. In addition, coordinating preventive measures in combination with other services, such as migration offices, border control, customs, etc. can be quite a demanding task, and could affect the efficiency of ship operations. In some cases, particularly in marinas where people gather for recreational purposes, extensive or even visible security measures could negatively impact the overall enterprise success.

The Republic of Croatia, similarly to numerous developing countries, does not play a noteworthy role in international relations. Large-scale terrorist action against such countries is not likely. However, based on experience, terrorist attacks should be deemed as probable as those carried out by organized criminal groups.

Terrorist attacks are undertaken against foreign governmental representatives, businessmen or other innocent and unrelated persons. On rare occasion, they are directed at certain national officials as an act of revenge for actions carried out while performing certain duties at an international level (i.e. participating in international peace keeping forces). Terrorist action can also be aimed at prominent persons (e.g. judges) and politicians. It can be assumed that attacks follow well-known patterns and, as such, call for standard preventive procedures. Executing preventive or mitigating measures at sea, as in the case of an attack against a ship, yacht or boat, is quite a challenging task, requiring more effort than a comparable action ashore.

It is worthwhile noting that recently some criminal actions were executed in a form very similar to acts commonly considered as terrorist actions. Such actions could be aimed at prominent persons (e.g. judges), and politicians. These actions are primarily focused on people, but could also target ships and port facilities.

In countries where tourism is an important part of the national economy, notable targets for terrorist as well as criminal groups could be yachts owned or used by famous and/or wealthy people. Since yachts and corresponding ports are not covered by the ISPS Code, these vessels and the people on them are particularly vulnerable. In

addition, common anonymous participation in cruise vacations along the coast makes it difficult to prevent illegal activity.

Finally, beside human beings, illegal attacks could be directed against ships, port facilities, and the environment. In this respect, a large number of tankers sailing along the Adriatic Sea could be deemed highly potential targets, where attacks could aim to create large-scale pollution.

In some cases, implementing effective security measures may be even more difficult or requires additional effort due to external influences, i.e. that cannot be controlled by responsible authorities. In this respect, negative impact can be expected if a large sea area has to be secured, especially if there are numerous islands and sheltered areas, in areas where low coastal population density exists, and in areas where tourism is the most prominent economic activity. Additionally, in areas where substantial differences in regional development exist or where significant maritime traffic on international and domestic routes takes place, additional efforts should be expected.

Beside already mentioned external influences, a number of internal, inherited factors could affect the overall effectiveness of the implemented security system. According to the authors' opinion the most important internal factors are:

- Certain new threats (such as some criminal activities) are not yet anticipated as activities to be covered by the ISPS system; consequently, the system has to be amended as to be able to efficiently respond to these threats;
- Existence of a significant share of ISPS non-compliant traffic requires that different responses appropriate to particular circumstances and restraints, and depending on security capabilities on board ships under threat, be prepared;
- Improved co-operation among neighbouring countries could significantly decrease response time and increase overall efficiency; consequently it should be encouraged by any available means;
- The general public does not consider security a key issue, mainly due to modest experience or none at all; consequently, a change in attitude with respect to security issues should be encouraged as much as possible;
- Provision of well educated/trained personnel could be limited; the system should include appropriate education and training system with clear requirements for all participants, especially those with supporting roles;
- Lack of data sources and streams could jeopardize the outcomes of certain security measures; the system should be able to collect and manage data as needed; therefore, particular attention should be paid to data integration, particularly from subjects that already collect necessary data but are not able to communicate the data as required;
- Maritime security issues are characterized by a high level of local variability; consequently, the system has to be able to take into account local differences and to respond accordingly.

In the case of Croatia, future developments of the maritime security system should take into account all mentioned factors. In this respect, further developments should aim to:

- Promote better co-operation with neighbouring countries;

- Introduce additional education and training requirements for all personnel with security related tasks;
- Develop and implement human performance monitoring and assessment;
- Made access to data sources more efficient;
- Increase institutional capacities, particularly to improve communication between stakeholders having security related information and responsibilities;
- Encourage more robust institutional links among allied services.

Finally, these measures should encourage information fusion and the use of dedicated decision support systems. Notable advances can be expected when implementing these measures with non-SOLAS ships and ISPS non-compliant ports and marinas, where, as a final goal, adequate but invisible security protection should be put in place. Furthermore, satisfactory security protection of vessels, yachts and boats sailing within the territorial waters can be attained by combining security related data sources and services with navigation safety.

4. Conclusions

Maritime security measures implemented in the Republic of Croatia are, as in many other countries, based on rules and regulations prescribed by the SOLAS convention and the associated ISPS Code. However, these measures do not cover all aspects of security protection at sea, particularly in countries where tourism is an important economic sector generating significant maritime traffic. Consequently, national maritime security systems have to be amended by introducing measures appropriate for particular circumstances. Measures considered appropriate for the Republic of Croatia or countries sharing similar circumstances are presented in this paper. As a result, particular emphasis is placed on measures promoting information fusion and dedicated decision support systems that are considered technologies offering major advances in maritime security protection.

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