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Ports security organization and functionality - Implementation of the ISPS Code in medium and small countries

Abstract. The paper deals with implementation of security measures in small to medium developing countries. Based on the Croatian experiences, it examines the possibilities to efficiently combine security measures that have to be implemented in respect of 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 looks at measures promoting more extensive use of information technologies, particular 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.

Keywords. Maritime security, non-SOLAS ships, enhancement measures,

Introduction

Throughout the centuries, as well as nowadays, 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. Whatever form they take, they directly and significantly influence merchant ships and ports. In order to prevent and/or mitigate these threats, particularly those which exploit inherent weaknesses in ports and on board ships, in 2004 the International Maritime Organization (IMO) adopted a standard set of harmonized measures. Aiming to reach global coverage as soon as possible, these measures have been incorporated into the SOLAS Convention [1] as a separate chapter. The regulations stipulated in the Convention are further specified in the International Ship and Port Facility Code (ISPS Code) [2]. With this, the shipping industry was for the first time provided with the mandatory instruments dealing with security issues, prescribing clearly defined security measures and standards, at sea as well as alongside.

The standardization of security measures at global level shows a kind of ambivalence – at the same time it could result with potentially positive as well as negative impact on security protection. The harmonized measures are significantly easier to implement, particularly in multicultural environment of the shipping industry. Consequently, the implementation of the security requirements on board ships went smoothly, on time and as anticipated. Contrary to this, effective implementation in port facilities in different countries varies significantly, experiencing numerous difficulties. These difficulties are mostly caused by limited economic potentials, differing positions

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on the status of national and international maritime security system, and finally, different understanding what mitigation measures should be accepted as appropriate in different countries.

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

1. Croatia – security background

Croatia is a southern Central European country. It borders with Slovenia and Hungary to the north, Serbia to the northeast, Bosnia and Herzegovina to the east, and Montenegro to the far southeast. Its southern and western flanks border the Adriatic Sea, and it shares a sea border with Italy and Slovenia in the north and with Montenegro on the south. Its mainland territory is split in 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, the Croatia was involved in war led by the Yugoslav National Army and rebellions groups from Serbian enclaves, strongly supported by the Serbian government. During the war time maritime trading almost completely ceased. Land borders were not protected and transfer of people and weapons, both legal and illegal was considerable. Even during 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 on the Kosovo.

Today, the economic as well as security situation has been significantly improved. The country is a candidate for membership of the European Union and received a NATO membership invitation in 2008. It is expected to formally join the 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 and 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 callings per year and almost 1.0 million people visiting Croatian ports on cruisers every year. The majority of these ships visit the port of Dubrovnik, particularly during the summer season and they count for almost 10% of all tourists visiting Croatia. In addition, every year approximately 900.000 foreign tourists are sailing along the Adriatic coast on different types of yachts and recreation boats.

2. Maritime security system in Croatia

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. First step was to involve major stakeholders, in particular shipping companies, harbour master offices, port authorities, potential recognized security organizations (RSO), educational organization, and maritime agents and to ensure their support for planned activities.

The second step was to develop a legal system compatible with requirements of the ISPS Code [3], but taking into account the existing national transport system, capabilities and functionalities of major ports, capabilities of existing organizations responsible for the national security, as well as characteristics of the present and near-future maritime traffic in the area. The job was assigned to the group of experts under 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 [4]. 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 to organize security infrastructure, communication channels, related reporting, organization and inspection. The attached figure shows the organization structure responsible for maritime security issues.

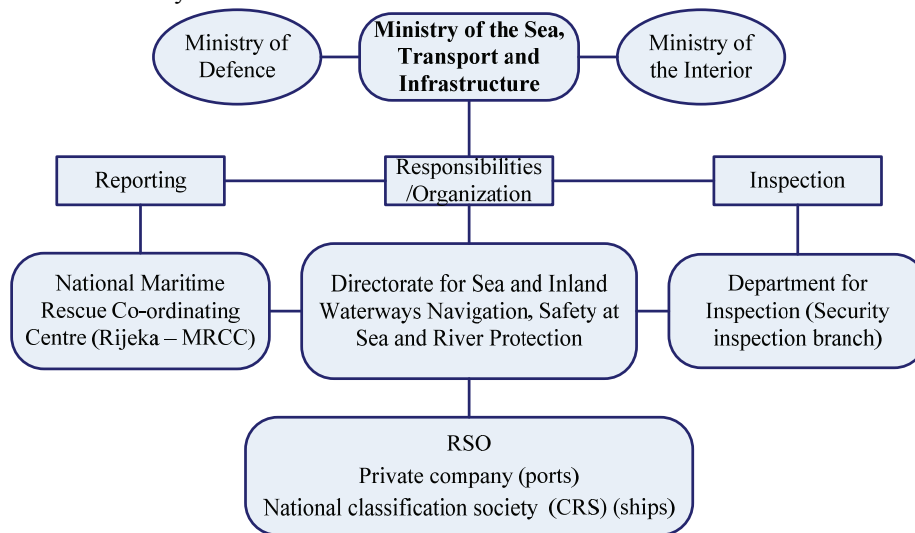


Figure 1 Croatian national ISPS framework

The Ministry of the Interior is responsible to set up security level in ports. If it is changed the Ministry of the Sea should be informed as soon as possible. After that, information on new security level will be conveyed (as a rule in less than 60 minutes) to all appointed Port Facility Security Officers (PFSO), harbour masters and to the person responsible for publishing Notices to Mariners. The National Maritime Rescue

Co-ordinating Centre is responsible for information exchange as well as for communications with ships at sea.

The presented system has served its purpose in the way it had been intended since its introduction. Consequently, the legal framework has not been changed since 2004. However, a need to amend it arose in 2008 with establishment of the Croatian Coast Guard within the Ministry of Defence. It is to take over some responsibilities in respect of the maritime border control and as such has to be formally included in the system. Also, some experiences gathered 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. Such configuration caused 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 their size, economic importance, ownership as well as according to the ship type they can or usually do accommodate. The system implemented in Croatia is essentially similar to the 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 bear responsibilities for steady economic development of the port areas assigned to them. They consist of one or more port terminals, geographically positioned at different places. Each port authority has at least one Port Facility Security Officer. They are responsible for the ISPS implementation and security-related issues within the port authority limits.

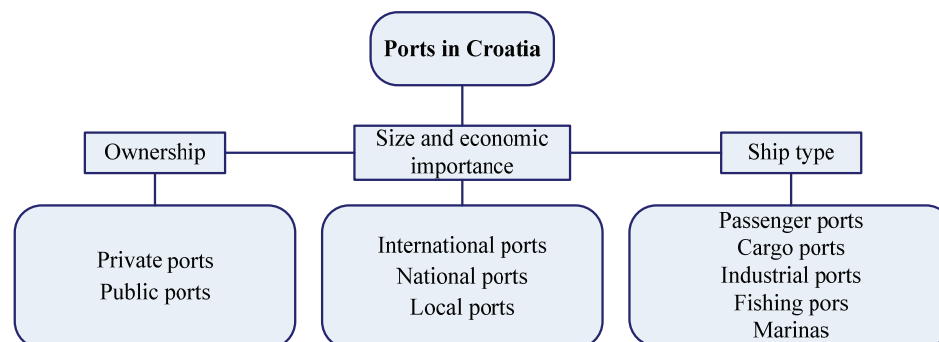


Figure 2 Ports organization structure

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

occasionally,² only one PFSO is usually appointed within an authority and is responsible for all the ports in the area.

Beside public ports open to all ships in accordance with rules set out by the government, there is a group of privately-owned ports. These ports are dedicated ports accommodating only ships connected with particular activity, 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 has to 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.

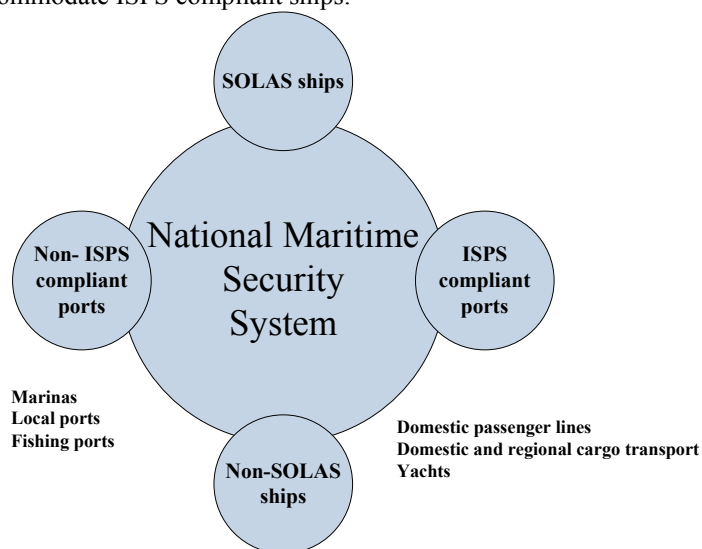


Figure 3 National maritime security system

The harbour master offices are responsible for safety of navigation 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 supervision of all activities that can in any manner affect the security status in ports [5]. Their area of responsibility is defined by the county borders so they are responsible for all ports, whatever status they can have, within these limits.

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 proposed new LNG terminal).

Ports of Rijeka and Ploče are largest cargo ports in the country. More than 5.2 MT dry cargos (in 2007) are loaded or unloaded in the port of Rijeka annually. The most prominent cargoes are dry bulk cargoes (3.2 MT) followed by containers (more than 150.000 TEUs). The port of Ploče follows the port of Rijeka with a total of 4.2 MT dry cargo in 2007. The major share belongs to bulk cargoes, with modest quantities of

² Usually such a small local ports occasionally accommodate smaller cruise ships which are ISPS compliant ships.

other cargoes. While the port of Rijeka serves, beside Croatian exporters and importers, customers from 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 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 cruisers and mostly during summer season when up to nine large cruise ships call in the port daily. Contrary to this, the port of Split is the biggest national passenger port with 3.6 M passenger 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 refinery as well as to 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 – a case of Croatian ports

Being a Mediterranean country, Croatia faces more or less the same challenges as other neighbouring countries. From the organizational standpoint the most demanding requirement is caused by significant difference between ISPS-compliant ports and ships on one side, and non-ISPS ports and ships, on the other. The security measures in ports open for international trade are well defined in the ISPS Code, both in respect of organization and responsibilities as well as in respect of procedures [6]. In addition, in these ports volume of trade and number of ships normally justifies investment in personnel and resources, resulting in relatively satisfactory level of maritime security and protection against illegal acts.

Ports which are not covered by the ISPS Code have to 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, custom, etc. could be quite a demanding task and could affect the efficiency of the ship's operations. In some cases, particularly in case of marinas where people are gathering for recreational purposes, the extensive or even visible security measures could negatively impact the overall enterprise success.

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

Attacks by terrorist groups could be undertaken against foreign governmental representatives, businessmen or against other innocent and unrelated persons. In rare occasion, they can be directed to certain national officials as an act of revenge for actions carried out while performing certain duties at international level (i.e. participating in international peace keeping forces). It can be assumed that these attacks would follow well known patterns and, as such, would require the standard preventive

procedures. It should be noted that executing preventive or mitigating measures at sea, for example in case of an attack against a ship, yacht or boat, could be quite a challenging task, requiring more efforts 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 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 ports they use are not covered by the ISPS Code, these vessels and people on them are particularly vulnerable. In addition, common intention to sail along the coast and spend vacations anonymously does not help to prevent any illegal activity.

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

In some cases implementing effective security measures may be even more difficult or will require additional efforts due to external influences, i.e. those that cannot be controlled by responsible authorities. In this respect, negative impacts can be expected if 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 the 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 the following:

- certain new threats (such as certain 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 response 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;
- general public does not consider security issues as key issue, mainly due to modest or no experience at all; consequently, the change in attitude in 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 who already collect necessary data but are not able to communicate these 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 these mentioned factors. In that 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 the stakeholders having security related information and responsibilities;
- encourage more robust institutional links among allied services.

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

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 the particular circumstances. Measures, considered as appropriate for the Republic of Croatia or countries sharing similar circumstances, have been presented in this paper. As a result, particular emphasize is placed on the measures promoting information fusion and dedicated decision support systems, being considered as technologies offering major advances in maritime security protection.

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