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INTERNATIONAL REGULATIONS FOR SEAPORTS IN THE BALTIC SEA REGION

Torstensson Håkan
Ekwall Daniel



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Keywords

Safety, Security, Ports, Transport, Regulations

Abstract

This report provides an overview of international rules and regulations related to ports, specifically security and safety in port facilities. There are four essential documents regarding safety and security in ports, two by the International Maritime Organization, IMO, and two by the European Union, EU. However, as a port is the interface between land transport and maritime transport it therefore must implement and be aware of rule-making for both sectors, in addition to port-specific acts and regulations. For the maritime side, the conventions and codes by the IMO are essential, while for the land transport side, several recommendations and agreements are implemented by the European Commission as, primarily, regulations and directives. Occupational safety and health for the maritime part are comprehensively treated in the Maritime Labour Convention by ILO. These documents and additional legislation are also implemented by EU regulations and directives.

The essential EU documents are categorized and listed under five main headings, port security, occupational safety and health, maritime safety, other modes of transport and cybersecurity. Due to the complexity of the legislative field, the report can only be used as an introduction and guidance to essential regulatory measures for ports. For full compliance, the specific convention, code, regulation, directive, etc. must be read in full and applicable amendments, local bylaws, instructions, etc. taken into account.

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LIST OF ACRONYMS

ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
COLREG	Convention on the International Regulations for Preventing Collisions at Sea
COSS	Committee on Safe Seas and the Prevention of Pollution from Ships
CSC	International Convention for Safe Containers
EEA	European Economic Area
EC	European Commission
EMSA	European Maritime Safety Agency
ENISA	European Network and Information Security Agency
EU	European Union
EUSBSR	EU Strategy for the Baltic Sea Region
IGC	International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk
IGF	International Code of Safety for Ships using Gases or other Low-flashpoint Fuels
ILO	International Labour Organisation
IMDG	International Maritime Dangerous Goods Code
IMO	International Maritime Organization
IMSBC	International Maritime Solid Bulk Cargoes Code
ISM	International Safety Management Code
ISPS	International Ship and Port Facility Security Code
LL	International Convention on Load Lines
MARPOL	International Convention for the Prevention of Pollution from Ships
MSC	Maritime Safety Committee (IMO)
PFSO	Port Facility Security Officer
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Regulation concerning the International Carriage of Dangerous Goods by Rail
SAFE	Framework of Standards to Secure and Facilitate Global Trade
SAR	International Convention on Maritime Search and Rescue
SOLAS	International Convention for the Safety of Life at Sea
STCW	International Convention on Standards of Training, Certification and Watchkeeping for Seafarers
TDC	Code of Safe Practice for Ships Carrying Timber Deck Cargoes
TEU	Transport Equivalent Unit (20 ft. container)
WCO	World Customs Organization

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1 THE HAZARD PROJECT

The HAZARD project aims at mitigating the effects of major accidents and emergencies in major multimodal seaports in the Baltic Sea Region, all handling large volumes of cargo and/or passengers. Ports, terminals and storage facilities are often located close to residential areas, thus potentially exposing a large number of people to the consequences of accidents. The HAZARD project deals with these concerns by bringing together Rescue Services, other authorities, logistics operators and established knowledge partners.

HAZARD enables better preparedness, coordination and communication, more efficient actions to reduce damages and loss of life in emergencies, and handling of post-emergency situations by making a number of improvements. These include harmonization and implementation of safety and security standards and regulations, communication between key actors, the use of risk analysis methods and adoption of new technologies.

Joint live exercises that reflect the concerns of partner seaports are an important part of the project. These will be dealing with, for example, leakage of hazardous materials, fire on a passenger ship at a port, oil spill in port areas as well as explosion of gases or chemicals. HAZARD provides a unique transnational learning platform, where Rescue Services and Seaports can evaluate and improve their procedures and practices in emergencies supported by strong knowledge partners.

HAZARD has 14 project partners from six countries in the Baltic Sea Region, with University of Turku (FI) as the Lead Partner. The consortium consists of Rescue Services and other authorities, Seaports and analytic and knowledge partners.

HAZARD is executed in Spring 2016 - Spring 2019, and it is a Flagship Project in the EU Strategy for the Baltic Sea Region (EUSBSR). The total budget of the project is 4.3 M€, which is partly funded by the EU's Interreg Baltic Sea Region programme (<http://www.interreg-baltic.eu>).

As a flagship project, HAZARD is an instrument to support the EU strategy for the Baltic Sea region (EUSBSR), which aims at the region becoming a model region for clean shipping. At present the policy of the member ports of the Baltic Ports Organization is stated in terms of the Baltic Sea as a model region for green ports and maritime transport.

More information about the Project: <https://blogit.utu.fi/hazard>

2 THE PORT AS INTERFACE BETWEEN SEA AND LAND TRANSPORT

Ports have always played a strategic role in a country's security and economic sustenance as an interface between sea and land transport and between international trade and domestic needs. Port facilities constitute a key infrastructure of international supply chains and national logistics systems and are directly responsible for a country's economy and welfare (Chulkov 2012). Disruptions of the flow of goods, such as by strikes or major accidents, can have large consequences for the supply chain with far-reaching domino effects (Ghadge et al. 2013). The key issue is that if one link in the chain fails to fulfill its intended purposes, the entire chain will fail (Rice and Caniato 2003).

Consequently different stakeholders interact to ensure that cargo handling operations are optimized and cost-effective, e.g. international shipping, logistics companies, trading communities, and regulatory bodies. For instance, from 2000 to 2016 the world container port traffic increased from 225 to 701 million TEUs (World Bank 2017). This leads to the standpoint, that many experts agree to, that port facilities are a key part of the infrastructure that are directly responsible for the a certain counties economy and welfare (Chulkov 2012).

Hence, for both business and state actors, it is of outmost importance that ports and different port operations are kept safe, secure and efficient at all times (Urciuoli et al., 2013). To ensure a high level of safety and security, while aiming for a minimum of trade barriers, international organizations have developed extensive legislative frameworks and guidelines for seafarers and port owners.

Principally, with a few exceptions, regulations and conventions for maritime transport are not destined to be applied in ports. However, with the port as the gateway between land and sea transport, ports must still be aware of several such documents and ensure proper compliance and enforcement.

There are four essential documents, which specifically cover safety and security in ports, two of them issued by the International Maritime Organization, IMO:

1. The International Convention for the Safety of Life at Sea (SOLAS), 1974
2. The International Ship and Port Facility Security Code (ISPS), 2002

They are further described in section 3.2 and 3.5, respectively, below.

The two other documents are issued by the European Commission:

1. Directive 2005/65/EC of the European Parliament and of the Council on enhancing port security
2. Regulation (EC) No 725/2004 of the European Parliament and of the Council on enhancing ship and port facility security

They are also mentioned in section 5.1 below.

Additional regulations have been issued to address specific fields in the SOLAS Convention, to ensure occupational safety and to cover new areas, such as cyber-security. Such regulations and guidelines are also described or listed in this report.

In addition each port has issued specific regulations, such as Stockholm (Stockholms hamnar, 2014) or Riga (Freeport of Riga, 2017).

There is continuous work in progress to amend and update the regulations. It is therefore necessary to consult the latest information on a specific document and take changes into account.

3 INTERNATIONAL REGULATIONS APPLICABLE WORLD-WIDE

As ports constitute the interface between sea and land with several complex operations, in many cases regulations for both maritime transport, road and rail transport, and occupational safety apply to ports. Maritime safety and security conventions and regulations primarily address ships and sea voyages, but all relevant factors, cargo, personnel, the ship itself, are at times present in the port and must pass the port. Land transport regulations in a similar way touch the port areas and port facilities. This report will provide an overview and analysis of such regulations, regarding their scope, applicability and organizational origin.

The most important piece of the multilateral regulatory framework for maritime issues, including maritime transport, is the United Nations Convention on the Law of the Sea (UNCLOS)¹ of 10 December 1982. It lays down a comprehensive regime of law and order in the world's oceans and seas establishing rules governing all uses of the oceans and their resources. It enshrines the notion that all problems of ocean space are closely interrelated and need to be addressed as a whole. One way or the other, all other parts of the maritime regulatory framework dealing with maritime transport and seaports are linked to the foundation laid by UNCLOS.

3.1 International organizations relevant to port facility safety and security

The International Maritime Organization, IMO, is a United Nations specialized agency having the role of global standard-setting authority for the safety, security and environmental performance of international shipping².

IMO is responsible e.g. for the International Convention for the Safety of Life at Sea (SOLAS), the most important of all treaties dealing with maritime safety, and for a large set of regulations supporting the compliance of SOLAS, such as the International Maritime Dangerous Goods (IMDG) Code, the International Maritime Solid Bulk Cargoes (IMSBC) Code, the International Code of Safety for Ships using Gases or other Low-flashpoint Fuels (IGF), the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC), the Code of Safe Practice for Ships Carrying Timber Deck Cargoes (TDC) and several Circulars, Codes of Practice, Recommendations and Guidelines. IMO also issues the International Convention for the Prevention of Pollution from Ships (MARPOL), the Convention on the International Regulations for Preventing Collisions at Sea (COLREG) and the International Convention on Load Lines (LL), which apply to ships, the International Ship and Port Facility Security Code (ISPS), covering both the ship and the ports, the International Safety Management (ISM) Code for shipping companies, and the International Convention on Standards of Training, Certification

¹ See: http://www.un.org/depts/los/convention_agreements/convention_overview_convention.htm

² A complete list of IMO's Conventions can be found at:
<http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/Default.aspx>

and Watchkeeping for Seafarers (STCW) regarding seafarers. For essential Conventions and Codes more details will be given below.

The International Labour Organization, ILO, also a United Nations specialized agency, is responsible for a.o. the ILO Maritime Labour Convention³.

The World Customs Organization, WCO, is an inter-governmental agency, which issues several best practices, aimed at enhancing the efficiency and effectiveness of customs administrations.

The European Commission has noted the importance of ports, as 74% of goods enter or leave Europe by sea, 400 million passengers pass the ports, and 1.5 million workers are directly employed in European ports. It has developed a set of Regulations and Directives for port facilities and port services, such as Regulation (EU) No. 2017/352 establishing a framework for the provision of port services and common rules on the financial transparency of ports, and Regulation (EC) No. 725/2004 on enhancing ship and port facility security. Several other EU Directives, as listed below, have been developed to ensure compliance with and enforcement of IMO's Conventions and the Maritime Labour Convention.⁴

3.2 The SOLAS Convention

The International Convention for the Safety of Life at Sea (SOLAS), 1974, is generally regarded as the most important of all international treaties concerning the safety of merchant ships.

The main objective of the SOLAS Convention is to specify minimum standards for the safe construction, equipment and operation of ships, including the basic safety equipment (such as fire protection, radio communication, navigation and life-saving appliances) to be carried on board. It also requires regular ship surveys and the issue by flag states of certificates of compliance.

In 2002, the SOLAS Convention was amended with Chapter XI-2 on special measures to enhance maritime security. The SOLAS Convention requires countries to assess their prevailing security situation that corresponds to a certain set of security measures to be taken by ships, ports and port authorities. In terms of security, SOLAS is supplemented by the ISPS Code, as described below. To provide guidance related to security in ports, a joint IMO-ILO working group has elaborated the Code of practice on security in ports. This code is not legally binding but intended to assist in the identification of the roles and responsibilities of governments, employers and workers.

SOLAS also includes requirements for stowage and securing of cargo or cargo units (such as containers), carriage of dangerous goods as well as additional safety measures for bulk carriers,

³ <https://www.ilo.org/global/standards/maritime-labour-convention/lang--en/index.htm>

⁴ See e.g.: https://ec.europa.eu/transport/modes/maritime/safety_en

which should be taken into account in seaports. These requirements are further detailed in the IMDG, IMSBC, IGF, IGC and TDC Codes and in several Circulars, Codes of Practice, Recommendations and Guidelines.

3.3 The MARPOL Convention

The International Convention for the Prevention of Pollution from Ships (MARPOL), 1973/1978, contains requirements to prevent pollution that may be caused both accidentally and in the course of routine operations. MARPOL concerns the prevention of pollution from oil, bulk chemicals, dangerous goods, sewage, garbage and atmospheric pollution, and includes provisions such as those which require certain oil tankers to have double hulls.

3.4 The STCW Convention

The International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW), 1978/1995/2010 establishes uniform standards of competence for seafarers, including training, certification and watchkeeping

3.5 The ISPS Code

The International Ship and Port Facility Security Code (ISPS), 2002, includes mandatory requirements to ensure ships and port facilities are secure at all stages during a voyage. It applies to international vessel traffic and associated port facilities and has had significant impact on port operations. The security of ships and port facilities is considered a risk management activity, and the Code determines appropriate security measures and risk assessment practices for different cases, including terrorism. The purpose of the Code is to provide a standardised framework for risk evaluation and required security measures. Those ships, which do not comply with the requirements of the code, should not be issued with International Ship Security Certificates and ship may be detained in port until it gets a certificate.

Development of a security plan is required from ports, which are engaged in international transport. Security plans must be approved by the Maritime Administration. A Port Facility Security Officer (PFSO) must be appointed as responsible for port security practices.

Security measures of the ports are based on fencing and access control of port facilities, and security checks of passengers and cargos. ISPS also defines security levels that should be taken into account in security management.

3.6 The CSC Convention

The International Convention for Safe Containers (CSC), 1972, aims to maintain a high level of safety of human life in the transport and handling of containers by providing acceptable test procedures and related strength requirements. It also facilitates the international transport of containers by providing uniform international safety regulations applicable to all modes of surface transport.

The Convention requires that the container type is subject to various tests, as described in its annexes, which represent a combination of safety requirements of both the inland and maritime modes of transport.

3.7 The Maritime Labour Convention

The ILO Maritime Labour Convention, 2006, provides a minimum labour standard for the shipping industry. It contains provisions on conditions of employment, accommodation and recreational facilities, food and catering, health protection, medical care, welfare and social security protection. It also states port State responsibilities, including inspections in ports. Inspections in a port shall be carried out by authorized officers in accordance with the provisions of the Code and other applicable international arrangements governing port State control inspections.

Directive 2013/54/EU of the European Parliament and of the Council concerning certain flag State responsibilities for compliance with and enforcement of the Maritime Labour Convention aims to ensure that EU countries fulfil their obligations with respect to the implementation.

3.8 Other IMO regulations germane to port facilities

In addition to the above-mentioned IMO documents, which are considered as corner-stones for acceptable safety, a number of Conventions and Codes are maintained by the IMO. These include the International Convention on Tonnage Measurement of Ships, the International Convention on Maritime Search and Rescue (SAR), the International Convention on Load Lines, and the International Regulations for Preventing Collisions at Sea (COLREGS).

IMO also issues Guidelines to support its safety and security management practices. An important security aspect, not least in ports, is cyber-security, addressed in Guidelines on Maritime Cyber Risk Management, MSC-FAL.1/Circ.3.

3.9 Other ILO regulations germane to port facilities

The ILO has adopted the Seafarers' Identity Documents Convention (Revised), 2003 (No. 185). The Convention provides for a uniform and global identity document that will permit the positive verifiable identification of the seafarer.

3.10 WCO conventions and standards

A number of customs-related instruments are of particular interest to ports, such as the International Convention on the Harmonized Commodity Description and Coding System (HS Convention), The International Convention on the Simplification and Harmonization of Customs procedures (revised Kyoto Convention) and the SAFE Framework of Standards to Secure and Facilitate Global Trade. The SAFE Framework is a non-binding instrument that contains supply chain security and facilitation standards for goods being traded internationally, enables integrated and harmonized supply chain management for all modes of transport and supports customs administrations in improving their capability to detect high-risk cargo.

4 GENERAL REQUIREMENTS AND PROSPECTS OF THE INTERNATIONAL REGULATIONS

Generally, the regulations mentioned above sets minimum standards for safety and security management on ships and, where applicable, in ports. Requirements include developing safety and security management plans and providing documentation, carrying out risk assessment, organizing training and drills, and performing audits and inspections. Certification is a key issue in some regulations. The following table provides an overview of how such measures relate to the different regulations.

Table 1. Safety and security measures in selected Conventions and Codes

	SOLAS	MARPOL	ISPS	ISM	CSC	TONN	SAR	ILO	LL	COLREG	STCW
Minimum standards	X	X	X		X	X		X		X	
Documentation	X	X			X	X					
Drills	X										X
Certificates	X	X	X		X						X
Dangerous goods section	X	X									
Pollution issues		X		X							
Control issues	X	X									
Management Plans	X	X				X			X		
Risk management issues			X								
Security Plans			X								
Safety Plans				X	X	X			X		
Auditing		X	X	X							
Harmonizing national plans					X						X
Inspections					X			X	X		
Accident focus							X				

Normally the international regulations, conventions, codes and guidelines are reviewed, revised and updated continuously by the relevant committees of the IMO, where the revisions are approved by the Maritime Safety Committee, MSC. Equivalent procedures are applied by the other mentioned organizations.

To fully understand the requirements of each convention or regulation, it is necessary to obtain and read the full text of it, including amendments and updates. Normally they can be found via the respective organization's website or in national legislation. It is also advisable to consult the

IMO/ILO Code of practice on security in ports, which provides comprehensive guidelines to the requirements for port security.

5 EUROPEAN UNION DIRECTIVES AND REGULATIONS

The European Union has issued a comprehensive set of directives and regulations, aiming at providing a common EU legislative basis for the implementation and enforcement of the above-mentioned IMO and ILO documents. Primarily they cover the following areas:

1. Port security
2. Occupational safety and health
3. Maritime safety
4. Other modes of transport

Due to the international character of transport and trade, and the European Union's principles of freedom of movement, the development and use of specifically national regulations and standards are discouraged. Member states are expected to implement the common regulations, as Directives, in their national law and comply with the EU Regulations. Consequently, there is a specific difference between Regulations and Directives in the EU vocabulary: A "regulation" is a binding legislative act. It must be applied in its entirety across the EU. A "directive" is a legislative act that sets out a goal that all EU countries must achieve; however, it is up to the individual countries to devise their own laws on how to reach these goals.

The titles of the listed documents usually explain their scope of application. For any legal or professional use of the documents, the full text must be obtained and read.

Some documents are duplicated in the list, due to their being applicable to more than one category.

5.1 Port security

The following acts apply to the Security and Safety of Ships and Port Facilities and serve as instruments for the compliance with and enforcement of the SOLAS Convention and associated IMO Conventions and Codes, and the MARPOL Convention, respectively.

1. Regulation (EC) No 725/2004 of the European Parliament and of the Council of 31 March 2004 on enhancing ship and port facility security (Text with EEA relevance)

The Regulation is the most essential EU document on security on ships and in port facilities. It was designed to ensure that decisions adopted by the IMO are interpreted and implemented uniformly. The European Union Maritime Security Strategy was launched with the adoption on 24 June 2014 of a Council decision approving it as a political and strategic measure for effectively addressing maritime security challenges using all the relevant international, EU and national instruments.

2. Directive 2005/65/EC of the European Parliament and of the Council of 26 October 2005 on enhancing port security (Text with EEA relevance)

3. Commission Regulation (EC) No 324/2008 of 9 April 2008 laying down revised procedures for conducting Commission inspections in the field of maritime security (Text with EEA relevance)

This Regulation lays down procedures for conducting Commission inspections to monitor the application of Regulation (EC) No 725/2004 at the level of each Member State and of individual port facilities and relevant companies.

4. Regulation (EU) 2017/352 of the European Parliament and of the Council of 15 February 2017 establishing a framework for the provision of port services and common rules on the financial transparency of ports (Text with EEA relevance)

5.2 Occupational safety and health

The following acts apply also to the occupational safety and health in ports and serve as instruments for the compliance with and enforcement of the Maritime Labour Convention. They apply to general and specific working conditions and to equipment and machinery used in workplaces.

The European Union's work on occupational safety and health is based on the so-called Framework Directive:

Council Directive of 12 June 1989 on the introduction of measures to encourage improvements in the safety and health of workers at work (89/391/EEC)

This directive introduces measures to improve the health and safety of people at work. It sets out obligations for both employers and employees to reduce accidents and occupational diseases in the workplace and specifically introduces as a key element the principle of risk assessment. The directive applies to nearly all sectors of public and private activity, including seaports. The general principles of prevention listed in the directive are the following:

- avoiding risks
- evaluating the risks
- combating the risks at source
- adapting the work to the individual
- adapting to technical progress
- replacing the dangerous by the non- or the less dangerous
- developing a coherent overall prevention policy
- prioritizing collective protective measures (over individual protective measures)
- giving appropriate instructions to the workers

In addition to the Framework Directive, a series of individual directives focusing on specific aspects of safety and health at work were adopted. Nevertheless, the Framework Directive continues to apply to all areas covered by the individual directives. Where individual directives

contain more stringent and specific provisions, these special provisions prevail. The individual directives define how to assess specific risks and, in some instances, set limit values for certain substances or agents.

Such complementary Directives are listed in Table 2 below together with their respective field of application.

In 2004 the European Commission issued a Communication (COM [2004] 62) on the practical implementation of the provisions of some of the directives, namely 89/391 EEC (framework directive), 89/654 EEC (workplaces), 89/655 EEC (work equipment), 89/656 EEC (personal protective equipment), 90/269 EEC (manual handling of loads) and 90/270 EEC (display screen equipment)]. This Communication stated that there was evidence of the positive influence of EU legislation on national standards for occupational safety and health made up of both national implementing legislation and practical application in enterprises and public sector institutions.

Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) is a European Union regulation that addresses the production and use of chemical substances, and their potential impacts on human health and the environment. For the transport of such substances, specific directives for the transport of dangerous goods apply, where these are also further regulated by the European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR), the European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (ADN) and the Regulations concerning the International Carriage of Dangerous Goods by Rail (RID). These international rules must be extended to national transport in order to harmonise across the EU the conditions under which dangerous goods are transported.

Member States are free to adopt stricter rules for the protection of workers when transposing EU directives into national law. Therefore, legislative requirements in the field of safety and health at work can vary across EU Member States.

Table 2. Directives and Regulations addressing occupational safety and health: Workplaces, equipment, signs, personal protective equipment

Directive or Regulation	Subject
89/654/EEC (1989)	Minimum safety and health requirements for the workplace
92/57/EEC (1992)	Implementation of minimum safety and health requirements at temporary or mobile constructions sites
2009/104/EC (2009)	Minimum safety and health requirements for the use of work equipment by workers at work
92/58/EEC (1992)	Minimum requirements for the provision of safety and/or health signs at work
1999/92/EC (1999)	Minimum requirements for improving the safety and health protection of workers potentially at risk from explosive atmospheres
89/656/EEC (1989)	Minimum health and safety requirements for the use by workers of personal protective equipment at the workplace
Regulation (EU) 2016/425 (2016)	Personal protective equipment
Regulation (EU) 2016/426 (2016)	Appliances burning gaseous fuels
2014/34/EU (2014)	Equipment and protective systems intended for use in potentially explosive atmospheres
2014/33/EU (2014)	Lifts and safety components for lifts
2014/68/EU (2014)	The making available on the market of pressure equipment
2014/29/EU (2014)	The making available on the market of simple pressure vessels
2010/35/EU (2010)	Transportable pressure equipment
2006/42/EC (2006)	Machinery
75/324/EEC (1975)	Aerosol dispensers

Table 3. Directives and Regulations addressing occupational safety and health: Exposure to chemical agents and chemical safety

Directive or Regulation	Subject
Regulation (EC) No 1907/2006 (2006)	Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency
Regulation (EC) No 1272/2008 (2008)	Classification, labelling and packaging of substances and mixtures
2008/68/EC (2008)	Inland transport of dangerous goods
95/50/EC (1995)	Uniform procedures for checks on the transport of dangerous goods by road
2000/39/EC (2009), 2006/15/EC (2006), 2009/161/EC (2009), (EU) 2017/164 (2017)	Lists of indicative occupational exposure limit values
2009/148/EC (2009)	Protection of workers from the risks related to exposure to asbestos at work
2004/37/EC (2004)	Protection of workers from the risks related to exposure to carcinogens or mutagens at work
98/24/EC (1998)	Protection of the health and safety of workers from the risks related to chemical agents at work
91/322/EEC (1991)	Establishing indicative limit values by implementing Council Directive 80/1107/EEC on the protection of workers from the risks related to exposure to chemical, physical and biological agents at work
2012/18/EU (2012)	The control of major-accident hazards involving dangerous substances ('Seveso III Directive')
Regulation (EC) No 1013/2006 (2006)	Shipments of waste
94/63/EC (1994)	The control of volatile organic compound (VOC) emissions resulting from the storage of petrol and its distribution from terminals to service stations
2004/35/EC (2004)	Environmental liability with regard to the prevention and remedying of environmental damage
2013/30/EU (2013)	Safety of offshore oil and gas operations

Table 4. Directive and Regulations addressing occupational safety and health: Exposure to physical hazards (physical hazards include ionising and optical radiation, electromagnetic fields, noise and vibration)

Directive or Regulation	Subject
2013/59/Euratom (2013)	Basic safety standards for protection against the dangers arising from exposure to ionising radiation
2013/35/EU (2013)	Minimum health and safety requirements regarding the exposure of workers to the risks arising from physical agents (electromagnetic fields)
2006/25/EC (2006)	Minimum health and safety requirements regarding the exposure of the workers to risks arising from physical agents (artificial optical radiation)
2003/10/EC (2003)	Minimum health and safety requirements regarding the exposure of workers to the risks arising from physical agents (noise)
2002/44/EC (2002)	Minimum health and safety requirements regarding the exposure of workers to the risks arising from physical agents (vibration)
2009/71/ Euratom (2009)	Establishing a Community framework for the nuclear safety of nuclear installations
2000/14/EC (2000)	Noise emission in the environment by equipment for use outdoors

Table 5. Directive and Regulations addressing occupational safety and health: Exposure to biological agents ('Biological agents' are classified into four risk groups, according to their level of risk of infection)

Directive or Regulation	Subject
2000/54/EC (2000)	Protection of workers from risks related to exposure to biological agents at work

Table 6. Directive and Regulations addressing occupational health and safety: Electrical safety

Directive or Regulation	Subject
2014/35/EU (2014)	The making available on the market of electrical equipment designed for use within certain voltage limits ('Low Voltage Directive', LVD)

Table 7. Directive and Regulations addressing occupational safety and health: Provisions on workload, ergonomic and psychosocial risks

Directive or Regulation	Subject
90/270/EEC (1990)	Minimum safety and health requirements for work with display screen equipment
90/269/EEC (1990)	Minimum health and safety requirements for the manual handling of loads where there is a risk particularly of back injury to workers
2005/47/EC (2005)	The Agreement between the Community of European Railways (CER) and the European Transport Workers' Federation (ETF) on certain aspects of the working conditions of mobile workers engaged in interoperable cross-border services in the railway sector
2003/88/EC (2003)	Certain aspects of the organisation of working time
2002/15/EC (2002)	Organisation of the working time of persons performing mobile road transport activities

Table 8. Directive and Regulations addressing occupational safety and health: Maritime labour

Directive or Regulation	Subject
2009/13/EC (2009)	Implementing the Agreement concluded by the European Community Shipowners' Associations (ECSA) and the European Transport Workers' Federation (ETF) on the Maritime Labour Convention, 2006
1999/63/EC (1999)	The Agreement on the organisation of working time of seafarers concluded by the European Community Shipowners' Association (ECSA) and the Federation of Transport Workers' Unions in the European Union (FST) with Annex: European Agreement on the organisation of working time of seafarers
93/103/EC (1993)	Minimum safety and health requirements for work on board fishing vessels
92/29/EEC (1992)	Minimum safety and health requirements for improved medical treatment on board vessels

5.3 Maritime safety

There are a large number of legislative documents from the European Union regarding maritime safety, mainly with the purpose to set the corresponding IMO Conventions and Codes in force in the Member States, in most cases also in the European Economic Area, EEA. The European Maritime Safety Agency, EMSA, in Lisbon, provides technical assistance and support to the European Commission and Member States in the development and implementation of such legislation on maritime safety, pollution by ships and maritime security. The following table (table 3) lists applicable directives, regulations and other documents on passenger safety, port state control, vessel traffic monitoring and reporting, flag state and recognized organizations, seafarers, pollution prevention, accident investigation, insurance and liability, technical safety requirements, the European Maritime Safety Agency (EMSA), and the Committee on Safe Seas and the Prevention of Pollution from Ships (COSS).

The following paragraphs explain briefly how each area is addressed by EU legislation.

- According to EMSA, which provides support to EU legislation on ship safety, there is currently a focus on damage stability of ro-ro passenger vessels, for which the majority of the world fleet flies EU Member State flags and sails in EU waters, but also potential issues on other passenger ships.
- The port State control Directive is followed by three implementing regulations and aims to ensure that there is effective control of compliance with international standards by ships in EU ports and that ships sailing in EU waters have been appropriately constructed and are adequately maintained. In addition, Directive 1999/35/EC (listed above) provides for a system of mandatory surveys for the ro-ro ferries and high speed passenger crafts to be carried out by the host States.
- The VTMS (vessel traffic monitoring and information system) Directive aims to improve the response of authorities to incidents, accidents or potentially dangerous situations at sea, including search and rescue operations, and contribute to a better prevention and detection of pollution by ships.
- The flag State has the authority and responsibility to enforce regulations over vessels registered under its flag, including those relating to inspection, certification, and issuance of safety and pollution prevention documents. The flag State's role is described in the 1982 United Nations Convention on the Law of the Sea (UNCLOS).
- The directives on seafarers support the STCW Convention of the IMO. The first directive in this field was 94/58/EC, which gave the 1978 STCW Convention the force of EU law.
- The EU Directive 2000/59/EC on port reception facilities for ship-generated waste and cargo residues, which aligns with the MARPOL Convention, aims to reduce pollution from the waste produced by ships. Under MARPOL and the Directive there is an obligation to provide port waste reception facilities, (PRF), which must be adequate to meet the needs of ships using the port, without causing undue delay. The EU PRF Directive also requires the delivery of ship generated wastes and the implementation of

a cost recovery system by the Member States covering the costs of planning for, collecting and disposal of this waste.

- EMSA is responsible for providing technical assistance for the implementation of Directive 2009/18/EC establishing the fundamental principles governing the investigation of accidents in the maritime transport sector.
- Efforts have been made to reduce risks in the maritime sector through better technology, rules and supervision and also through mechanisms of compensation. The Insurance Directive 2009/20/EC requires compulsory P&I (Protection and indemnity) to cover for EU and foreign ships in EU waters and ports. Foreign vessels that do not comply to the Directive may be expelled or refused entry into any EU port, although ships may be allowed time to comply before expulsion.
- The Directive 2014/90/EU replaced Directive 96/98/EC with the same aim to enhance safety at sea and the prevention of marine pollution. It relates to equipment to be placed on board ships, for which safety certificates are issued by or on behalf of member states pursuant to international conventions, to ensure the free movement of such equipment within the Community.
- The European Maritime Safety Agency, EMSA, was set up in 2002. Based in Lisbon, the Agency provides technical assistance and support to the European Commission and Member States in the development and implementation of EU legislation on maritime safety, pollution by ships and maritime security. It has also been given operational tasks in the field of oil pollution response, vessel monitoring and in long range identification and tracking of vessels.
- The role of the Committee on Safe Seas and the Prevention of Pollution from Ships, COSS, is to centralise the tasks of the committees set up under the Community legislation on maritime safety, the prevention of pollution from ships and the protection of shipboard living and working conditions, and to assist and advise the Commission on all matters of maritime safety and prevention or reduction of pollution of the environment by shipping activities.

Table 9. Directives, Regulations and Council Decisions addressing maritime safety: Passenger safety

Directive, Decision or Regulation	Subject
2009/45/EC (2009)	Safety rules and standards for passenger ships
1999/35/EC (1999)	A system of mandatory surveys for the safe operation of regular ro-ro ferry and high-speed passenger craft services
2003/25/EC (2003)	On specific stability requirements for ro-ro passenger ships
98/41/EC (1998)	Registration of persons sailing on board passenger ships operating to or from ports of the Member States of the Community
Regulation (EC) No 392/2009 (2009)	Liability of carriers of passengers by sea in the event of accidents
Decision 2012/22/EU (2011)	Accession of the European Union to the Protocol of 2002 to the Athens Convention relating to the Carriage of Passengers and their Luggage by Sea, 1974, with the exception of Articles 10 and 11 thereof
Decision 2012/23/EU (2011)	Accession of the European Union to the Protocol of 2002 to the Athens Convention relating to the Carriage of Passengers and their Luggage by Sea, 1974, as regards Article 10 and 11 thereof

Table 10. Directives, Regulations and Council Decisions addressing maritime safety: Port State Control

Directive, Decision or Regulation	Subject
2009/16/EC (2009)	Port State control
Regulation (EU) No 428/2010 (2010)	Implementing Article 14 of Directive 2009/16 EC as regards expanded inspections of ships
Regulation (EU) No 801/2010 (2010)	Implementing Article 10(3) of Directive 2009/16/EC as regards the flag State criteria
Regulation (EU) No 802/2010 (2010)	Implementing Article 10(3) and Article 27 of Directive 2009/16/EC as regards company performance
96/40/EC (1996)	Establishing a common model for an identity card for inspectors carrying out port State control

Table 11. Directives, Regulations and Council Decisions addressing maritime safety: Vessel traffic monitoring and reporting formalities

Directive, Decision or Regulation	Subject
2002/59/EC (2002)	establishing a Community vessel traffic monitoring and information system
2010/65/EU (2010)	reporting formalities for ships arriving in and/or departing from ports of the Member States

Table 12. Directives, Regulations and Council Decisions addressing maritime safety: Flag State and recognised organisations

Directive, Decision or Regulation	Subject
2009/21/EC (2009)	Compliance with flag State requirements
2013/54/EU (2013)	Certain flag State responsibilities for compliance with and enforcement of the Maritime Labour Convention, 2006
Regulation (EC) No 391/2009 (2009)	Common rules and standards for ship inspection and survey organisations, amended by Commission Implementing Regulation (EU) No 1355/2014
2009/15/EC (2009)	Common rules and standards for ship inspection and survey organisations and for the relevant activities of maritime administrations, amended by Commission Implementing Directive 2014/111/EU
Regulation (EU) No 788/2014 (2014)	Detailed rules for the imposition of fines and periodic penalty payments and the withdrawal of recognition of ship inspection and survey organisations pursuant to Articles 6 and 7 of Regulation (EC) No 391/2009
Decision 2009/491/EC (2009)	Criteria to be followed in order to decide when the performance of organisation acting on behalf of a flag State can be considered an unacceptable threat to safety and the environment
Notice 2015/C 162/06 (2015)	List of organisations recognised on the basis of Regulation (EC) No 391/2009 on common rules and standards for ship inspection and survey organisations
Regulation (EC) No 789/2004 (2004)	Transfer of cargo and passenger ships between registers within the Community

Table 13. Directives, Regulations and Council Decisions addressing maritime safety: Seafarers

Directive, Decision or Regulation	Subject
2008/106/EC (2008)	Minimum level of training of seafarers
2012/35/EU (2012)	Amending Directive 2008/106/EC on the minimum level of training of seafarers
79/115/EEC (1979)	Pilotage of vessels by deep-sea pilots in the North Sea and English Channel
2005/45/EC (2005)	Mutual recognition of seafarers' certificate

Table 14. Directives, Regulations and Council Decisions addressing maritime safety: Accident investigation

Directive, Decision or Regulation	Subject
2009/18/EC (2009)	Establishing the fundamental principles governing the investigation of accidents in the maritime transport sector
Regulation (EU) No 651/2011 (2011)	Adopting the rules of procedure of the permanent cooperation framework established by Member States in cooperation with the Commission pursuant to Article 10 of Directive 2009/18/EC
Regulation (EU) No 1286/2011 (2011)	Adopting a common methodology for investigating marine casualties and incidents developed pursuant to Article 5(4) of Directive 2009/18/EC

Table 15. Directives, Regulations and Council Decisions addressing maritime safety: Pollution prevention

Directive, Decision or Regulation	Subject
2000/59/EC (2000)	Port reception facilities for shipgenerated waste and cargo residue, amended by 2002/84/EC, 2007/71/EC, Regulation (EC) No 1137/2008 and 2015/2087
2002/84/EC (2002)	Amending the Directives on maritime safety and the prevention of pollution from ships
2005/35/EC (2005)	Ship source pollution and on the introduction of penalties, including criminal penalties, for pollution offences amended by Directive 2009/123/EC
Regulation (EU) No 911/2014 (2014)	Multiannual funding for the action of the European Maritime Safety Agency in the field of response to marine pollution caused by ships and oil and gas installations
1999/32/EC (1999)	Reduction in the sulphur content of certain liquid fuels and amending 93/12/EEC amended by Regulation (EC) No 1882/2003, 2005/33/EC, Regulation (EC) No 219/2009, 2009/30/EC and 2012/33/EU
Regulation (EU) 2015/757 (2015)	Monitoring, reporting and verification of carbon dioxide emissions from maritime transport
Regulation (EU) No 1257/2013 (2013)	Ship recycling
Regulation (EC) No 782/2003 (2003)	Prohibition of organotin compounds on ships
Regulation (EC) No 536/2008 (2008)	Giving effect to Article 6(3) and Article 7 of Regulation (EC) No 782/2003 on the prohibition of organotin compounds on ships and amending that Regulation

Table 16. Directives, Regulations and Council Decisions addressing maritime safety: Insurance and liability

Directive, Decision or Regulation	Subject
2009/20/EC (2009)	The insurance of shipowners for maritime claims
Decision 2002/762/EC (2002)	Authorising the Member States, in the interest of the Community, to sign, ratify or accede to the International Convention on Civil Liability for Bunker Oil Pollution Damage, 2001 (the Bunkers Convention)
Decision 2002/971/EC (2002)	Authorising the Member States, in the interest of the Community, to ratify or accede to the International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea, 1996 (the HNS Convention)
2004/246/EC (2004)	Authorising the Member States to sign, ratify or accede to, in the interest of the European Community, the Protocol of 2003 to the International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, 1992

Table 17. Directives, Regulations and Council Decisions addressing maritime safety: European Maritime Safety Agency (EMSA)

Directive, Decision or Regulation	Subject
Regulation (EU) No 100/2013 (2013)	Amending Regulation (EC) No 1406/2002 establishing a European Maritime Safety Agency

Table 18. Directives, Regulations and Council Decisions addressing maritime safety: Committee on Safe Seas and the Prevention of Pollution from Ships (COSS)

Directive, Decision or Regulation	Subject
Regulation (EC) No 2099/2002 (2002)	Establishing a Committee on Safe Seas and the Prevention of Pollution from Ships (COSS)

Table 19. Directives, Regulations and Council Decisions addressing maritime safety: Technical safety requirements

Directive, Decision or Regulation	Subject
2014/90/EU (2014)	Marine equipment (The Directive will ensure the uniform application of the SOLAS Convention on equipment for commercial vessels, making the IMO resolutions deriving from it mandatory)
Regulation (EU) No 530/2012 (2012)	Accelerated phasing-in of double-hull or equivalent design requirements for single-hull oil tankers
2001/96/EC (2001)	Establishing harmonised equipments and procedures for the safe loading and unloading of bulk carriers amended by Directive 2002/84/EC and Regulation (EC) No 1137/2008
Regulation (EC) No 2978/94 (1994)	Implementation of IMO resolution A.747(18) on the application of tonnage measurement of ballast spaces in segregated ballast oil tankers
97/70/EC (1997)	Setting up a harmonised safety regime for fishing vessels of 24 metres in length and over
Regulation (EC) 336/2006 (2006)	Implementation of the International Safety Management Code within the Community
Decision 2014/195/EU (2014)	Authorising Member States to sign, ratify or accede to the Cape Town Agreement of 2012 on the Implementation of the Provisions of the Torremolinos Protocol of 1993 relating to the Torremolinos International Convention for the Safety of Fishing Vessels, 1977

5.4 Other modes of transport

There is currently no EU legislation addressing land transport security (apart for dangerous goods where there is some overlap of safety and security requirements), despite that the number of deaths in the EU from terrorist attacks on land transport far exceeds that in aviation or maritime transport, and theft of cargo from road and rail is estimated to cost some €8 billion per year. EU Transport Ministers have, to date, not requested the Commission to bring forward any legislation for EU security requirements for either road or rail transport. The LANDSEC Expert Group on Land Transport Security was created in 2012 but has not elaborated any legal documents.

The European Commission aims to promote and strengthen the competitive position of inland waterways in the transport system, and to facilitate its integration into the intermodal logistics chain. Some 21 out of 28 Member States have inland waterways.

Of particular interest for ports is the dangerous goods directive, as ports are interfaces between sea transport, where the IMDG Code must be complied with, and land transport, where ADR (road) and RID (rail) are the essential sets of regulations, set into force through this directive. There has been issued an EU publication, Cargo securing for road transport (2014), European best practices guidelines, which also has relevance here, although it is not a binding legal document. The purpose of the guidelines is to provide basic practical advice and instructions to all persons involved in loading/unloading and securing cargo on vehicles, including carriers and shippers.

Table 20. Directives and Regulations addressing inland waterways and land transport

Directive or Regulation	Subject
Inland waterways	
87/540/EEC (1987)	Access to the occupation of carrier of goods by waterway in national and international transport and on the mutual recognition of diplomas, certificates and other evidence of formal qualifications for this occupation
2009/100/EC (2009)	Reciprocal recognition of navigability licences for inland waterway vessels
(EU) 2016/1629 (2016)	Technical requirements for inland waterway vessels
(EU) 2017/2397 (2017)	Recognition of professional qualifications in inland navigation
Regulation (EU) 2016/1628 (2016)	Requirements relating to gaseous and particulate pollutant emission limits and type-approval for internal combustion engines for non-road mobile machinery
2005/44/EC (2005)	Harmonised river information services (RIS) on inland waterways in the Community
Rail and road transport	
(EU) 2016/798 (2016)	Railway safety
(EU) 2016/797 (2016)	Interoperability of the rail system within the European Union
2008/68/EC (2008)	Inland transport of dangerous goods
95/50/EC (1995)	Uniform procedures for checks on the transport of dangerous goods by road

In addition to the EU-based regulations on inland waterways and land transport, there is also a rather comprehensive set of Conventions and Agreements on these under the purview of

UNECE⁵. These have been ratified at various degrees by countries in Europe, North Africa, Middle East and Central Asia. While most of these Conventions and Agreements under the custody of UNECE stipulate over general principles of international road, rail and inland waterway transport of goods and passengers, many cover also safety and partly also security aspects⁶.

5.5 Cybersecurity

The cybersecurity Directive states that 'Member States shall ensure that operators of essential services take appropriate and proportionate technical and organisational measures to manage the risks posed to the security of network and information systems which they use in their operations. Having regard to the state of the art, those measures shall ensure a level of security of network and information systems appropriate to the risk posed'. It includes a.o. airlines, shipping firms, ports and airports, rail and road authorities, traffic management authorities and many other operators.

The applicable directive is *Directive (EU) 2016/1148 of the European Parliament and of the Council of 6 July 2016 concerning measures for a high common level of security of network and information systems across the Union*.

The European Network and Information Security Agency (ENISA) issues analyses and recommendations in the cybersecurity field, such as Analysis of cybersecurity aspects in the maritime sector (2011)

⁵ See: <http://www.unece.org/trans/welcome.html> and for the list of Conventions and Agreements and their signatory Parties: <http://www.unece.org/trans/conventn/intro.html>

⁶ See e.g.: <http://www.unece.org/trans/main/ac11/ac11.html>

6 LITERATURE AND REFERENCES

All IMO publications can be obtained from IMO Publishing, 4 Albert Embankment, London SE1 7SR, United Kingdom.

IMO publications catalogue is available at: www.imo.org/en/Publications/Pages/Home.aspx

All European Union directives and regulations mentioned in this report have been published in Official Journal of the European Union. The web gateway to all legal documents, including Official Journal, is the EUR-Lex website, <http://eur-lex.europa.eu/homepage.html> .

Other EU Publications are available at: <http://publications.europa.eu/en/home>

The Maritime Labour Convention is available from the ILO website, www.ilo.org/global/standards/maritime-labour-convention/lang--en/index.htm .

Also the ILO and IMO code of practice on security in ports, from www.ilo.org/public/libdoc/ilo/2004/104B09_186_engl.pdf

The WCO conventions and recommendations can be found via the WCO website, www.wcoomd.org/en.aspx .

The SAFE Framework of Standards can be found at: http://www.wcoomd.org/en/topics/facilitation/instrument-and-tools/frameworks-of-standards/safe_package.aspx

RID is available from the OTIF website, http://otif.org/en/?page_id=174

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World Bank 2017, Container port traffic, <https://data.worldbank.org/indicator/IS.SHP.GOOD.TU>

HAZARD project has 15 full Partners and a total budget of 4.3 million euros. It is executed from spring 2016 till spring 2019, and is part-funded by EU's Baltic Sea Region Interreg programme.

HAZARD aims at mitigating the effects of major accidents and emergencies in major multimodal seaports in the Baltic Sea Region, all handling large volumes of cargo and/or passengers.

Port facilities are often located close to residential areas, thus potentially exposing a large number of people to the consequences of accidents. The HAZARD project deals with these concerns by bringing together Rescue Services, other authorities, logistics operators and established knowledge partners.

HAZARD enables better preparedness, coordination and communication, more efficient actions to reduce damages and loss of life in emergencies, and handling of post-emergency situations by making a number of improvements.

These include harmonization and implementation of safety and security standards and regulations, communication between key actors, the use of risk analysis methods and adoption of new technologies.

See more at: <http://blogit.utu.fi/hazard/>

