

Information Flow in Maritime Safety Management Systems

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ABSTRACT: The priority of the maritime transport operation is a high level of security, which must be constantly monitored by shipowners with a security management system. The origin of the International Code for the Management of Safe Ship Operations and Pollution Prevention and the revised guidelines for the administration of the ISM Code by administrations, the first formal mandatory standard for safety management and pollution prevention goes back to the early 1980s. Arrangement of safe ship management and operation and consequent minimization of errors human being by far the most common cause of marine disasters is its main. The shipowner's and ship's certification procedure for the Safety Management System (SMS) is in line with Regulation (EC) No 336/2006 [1] of the European Parliament and the Council of Europe of 15 February 2006 on the implementation of the ISM Code in the Community, together with the Commission's amendment European Union of June 16, 2008. The documentation contains a developed Safety Management System adapted to the conditions of a given shipowner. All elements of the system must be documented, and, above all, the duties must be described in the organizational structures. Documentation must indicate how management supervises activities at various levels, employee participation and individual management representatives in individual processes, and how the safety management system is constantly improved. The shipowner maintains a security management system in line with the requirements of the Code and complies with the requirements of the certification system.

The amount of information and the speed of changes taking place in the environment makes it necessary to introduce a system of information management and channels of their flow not only within the organization, but also in communication with third parties. Proper management of information resources increases the efficiency and effectiveness of the system. In the publication, the possibility of a formalized description of information flow in a well-functioning shipowner's safety management system.

1 INTRODUCTION

The priority of the maritime transport operation is a high level of security, which must be constantly monitored by shipowners with a security management system. The genesis of the International Code for the Management of Safe Ship Operations and Pollution Prevention and the revised guidelines for the administration of the ISM Code by

administrations goes back to the early 1980s. Arrangement of safe ship management and operation and consequent minimization of errors human being by far the most common cause of marine disasters is its main. The shipowner's and ship's certification procedure for the Safety Management System (SMS) is in line with Regulation (EC) No 336/2006 [1] of the European Parliament and the Council of Europe of 15 February 2006 on the implementation of the ISM Code

in the Community, together with the Commission's amendment European Union of June 16, 2008.

ISM Code is the first in the history of shipping a formal, mandatory standard of safety management and pollution prevention. Its creation was aimed at organizing the principles of safe management and operation of ships, and thus the total or at least partial elimination of human errors, which are the most common cause of maritime disasters. These errors are prevented by developing and implementing the safety management system (SMS) in each shipping company and ships. The shipowner maintains a security management system in line with the requirements of the ISM Code and complies with the requirements of the certification system [2][3].

The amount of information and the speed of changes taking place in the environment makes it necessary to introduce a system of information management and channels of their flow not only within the organization, but also in communication with third parties. Proper management of information resources increases the efficiency and effectiveness of the system. The publication describes the possibility of a formalized description of information flow in a well-functioning shipowner's safety management system with a comparison of similar identification for a safety management system operating in railway transport.

2 SAFETY MANAGEMENT SYSTEM

According to the Regulation (EC) no 336/2006 of the European Parliament and of the Council of 15 February 2006 on the implementation of the International Safety Management Code within the Community and repealing Council Regulation (EC) No 3051/95, it is required to specify:

- 1 Safety and environmental protection policy;
- 2 Company responsibilities and authority;
- 3 Designated person(s) to provide a link between the company and those on board;
- 4 Master's responsibility and authority;
- 5 Resources and personnel;
- 6 Development of plans for shipboard operations;
- 7 Emergency preparedness;
- 8 Reports and analysis of non-conformities, accidents and hazardous occurrences;
- 9 Maintenance of the ship and equipment;
- 10 Documentation of the safety management system (SZB);
- 11 Company verification, review and evaluation.

Functional requirements for a SMS are set out in point 1.4. Regulation (EC) No. 336/2006. According to them, the documentation should specify at least:

- 1 A safety and environmental protection policy;
- 2 Instructions and procedures to ensure safe operation of ships and protection of the environment in compliance with relevant international and flag State legislation;
- 3 Defined levels of authority and lines of communication between, and amongst, shore and shipboard personnel;
- 4 Procedures for reporting accidents and non-conformities with the provisions of ISM Code;

- 5 Procedures to prepare for and respond to emergency situations;
- 6 Procedures for internal audits and management reviews.

The company is responsible for the development, implementation and maintenance of the SMS [1][5]. According to the definition contained in the regulation Company' means the owner of the ship or any other organisation or person such as the manager or the bareboat charterer, who has assumed the responsibility for the operation of the ship from the shipowner and who on assuming such responsibility has agreed to take over all the duties and responsibility imposed by the Code.

The ISM Code applies to the following types of ships to companies operating them:

- cargo ships and passenger ships, flying the flag of a Member State, engaged on international voyages;
- cargo ships and passenger ships engaged exclusively on domestic voyages, regardless of their flag;
- cargo ships and passenger ships operating to or from ports of the Member States, on a regular shipping service, regardless of their flag;
- mobile offshore drilling units operating under the authority of a Member State.

3 INFORMATION FLOW

In accordance with the requirements of the Regulation no 336/2006, the shipowner must designate a person to supervise the SMS, it is a key person in the system. It is responsible, among other things, for ensuring communication between the shipowner and the ship's crew as well as providing information and events to designated persons. This person is responsible, among others, for ensuring communication between the shipowner and the ship's crew as well as transferring information and events to designated persons. As part of the functioning of the safety management system, it is possible to determine the external and internal information flow channels. The article presents the possibility of identifying external information flow channels. An example of the implementation of such a process in rail transport is also described.

Rail carriers and infrastructure managers are required to have a certified safety management system in accordance with:

- Commission Regulation (EU) No 1158/2010 of 9 December 2010 on a common safety method for assessing conformity with the requirements for obtaining railway safety certificates;
- Commission Regulation (EU) No 1169/2010 of 10 December 2010 on a common safety method for assessing conformity with the requirements for obtaining a railway safety authorisation;

point O of Annex II requires the establishment of mechanisms to ensure enough access to information within the organization and, where appropriate, information exchange between organizations using the same infrastructure.

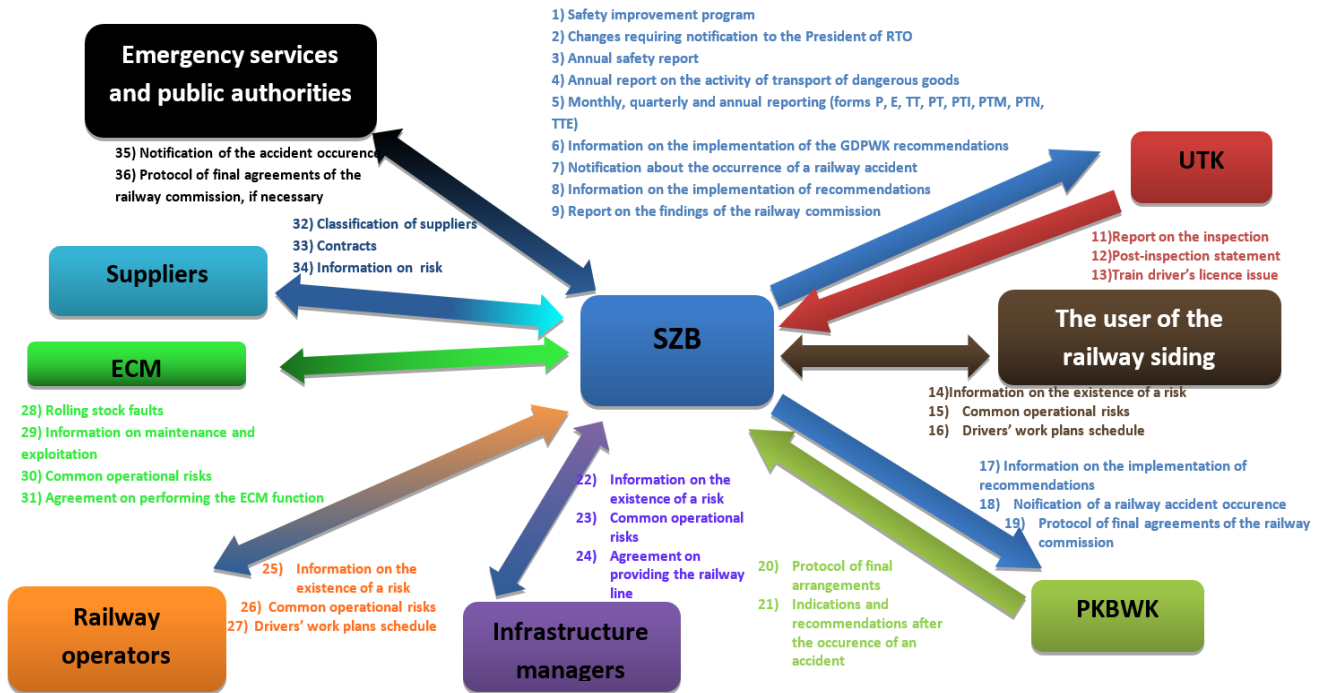


Figure 1. The flow of external information for the railway operator [own elaboration based on [8], [9]]

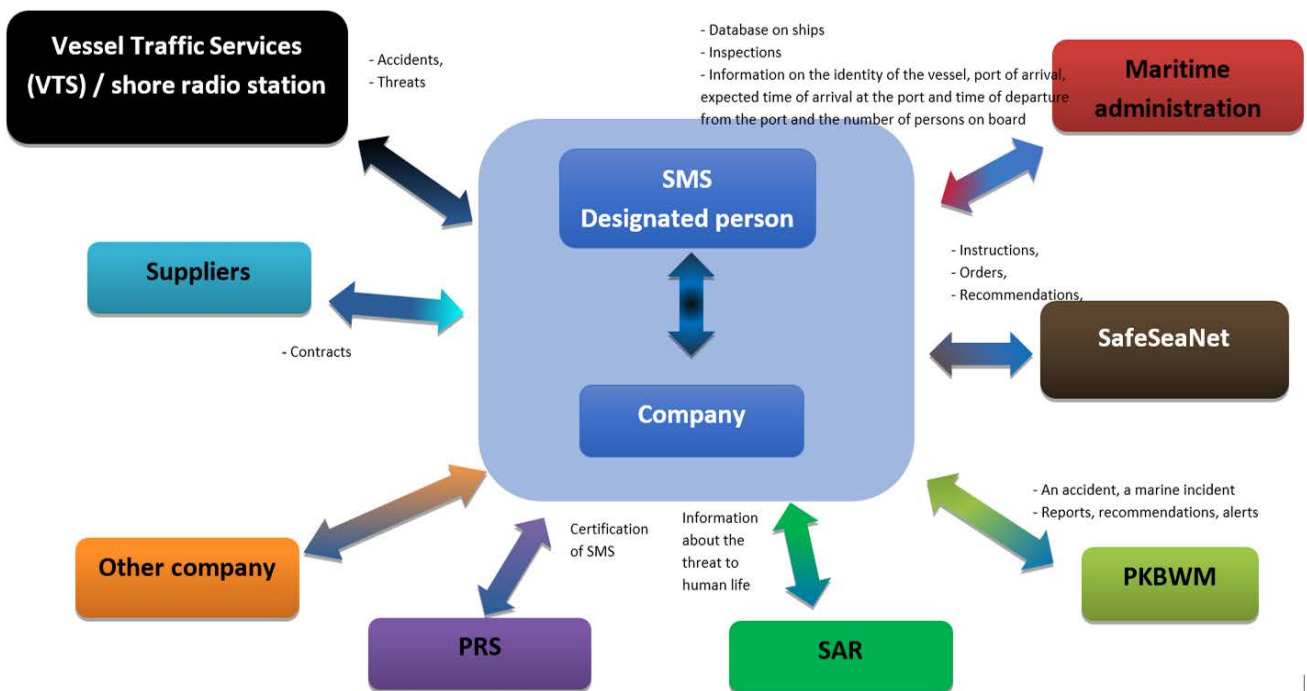


Figure 2. The flow of external information for the Maritime SMS [own elaboration based on [3], [6], [7]]

Figure 1 presents proposals for internal and external information flow maps for the railway operator. Important information provided in the legal requirements is included [8][9].

As part of the external information flow map (Fig. 1), third parties cooperating with the railway operator were identified, i.e.:

- The Office of Railway Transport;
- The National Railway Accident Investigation Committee (PKBWK);
- emergency services and public authorities;

- suppliers;
- entities in charge of maintenance - ECM;
- railway operators;
- infrastructure managers;
- users of railway sidings.

The map describes key security information passed between identified parties along with an indication of who is the sender and who is the recipient. This information includes:

- safety improvement program;

- changes requiring notification to the President of UTK;
- an annual safety report;
- annual activity report on the transport of dangerous goods;
- monthly, quarterly and annual reporting (forms P, E, TT, PT, PTL, PTM, PTN, TTE);
- information on the implementation of the PKBWK recommendations;
- notification of the occurrence of a railway accident;
- information on the implementation of recommendations;
- protocol of the railway commission's findings;
- train driver's statement about providing services for another entity;
- inspection report;
- post-inspection statement;
- train driver's license issue;
- information on the existence of a risk;
- information on risk;
- common operational risks;
- schedule of drivers' work plans;
- indications and recommendations after the occurrence of an accident;
- information on the existence of a risk;
- agreement on providing the railway line;
- faults (exclusion) of rolling stock;
- information on maintenance and operation;
- agreement on performing the ECM function;
- classification of suppliers;
- contracts with suppliers.

Similarly, the process of external information flow can be identified in maritime transport. It will allow to increase the supervision over the communication management of the person designated to implement the processes of the safety management system in accordance with the ISM Code. Figure 2 presents the proposal for such identification [4][3][6][7]. Within it, external entities cooperating with a designated person were identified, such as:

- Company;
- Maritime administration;
- The National Maritime Accident Investigation Committee (PKBWM);
- Suppliers;
- National SafeSeaNet;
- Maritime Search and Rescue Service (SAR Service);
- Polski Rejestr Statków S.A (PRS);
- Vessel Traffic Services (VTS) / shore radio station.

4 SUMMARY

Implementation of security objectives is conditioned by fast access to reliable and up-to-date information about processes occurring within the safety management systems. The amount of information and the speed of changes taking place in the environment makes it necessary to introduce a system of information management and channels of their flow not only within the organization, but also in communication with third parties. Proper management of information resources increases the efficiency and effectiveness of SMS functioning. The article presents the possibility of a formalized description of the external information flow in the Maritime SMS and a similar example from railway transport.

REFERENCES

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