

Selected aspects of ensuring supply chain safety in seaports

Wybrane aspekty zapewnienia bezpieczeństwa łańcucha dostaw w portach morskich

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Abstract

The article presents selected regulations and requirements responding to the needs of the market in the scope of managing safety in the logistic chain with particular consideration of marine transport and seaports. Based on conducted qualitative research by the method of deepened interview, there has been described the only, so far, case of using and implementing the certificated standard of ensuring safety in the global supply management chain according to ISO 28000. It was found that the quantification of risk is a process extremely difficult, since it relates to future events, the estimation is carried out in a situation of limited access to certain information, and is associated with subjective opinion and use the experience and knowledge of the evaluator.

Słowa kluczowe: łańcuch transportowy, port morski, bezpieczeństwo dostaw, szacowanie ryzyka, identyfikacja zagrożeń

Abstrakt

W artykule przedstawiono wybrane przepisy i wymagania będące odpowiedzią na potrzeby rynku w zakresie zarządzania bezpieczeństwem w łańcuchu logistycznym ze szczególnym uwzględnieniem transportu morskiego i portów morskich. Opierając się na przeprowadzonych badaniach jakościowych metodą wywiadu pogłębionego, opisano jedyny jak dotąd na świecie przypadek wykorzystania i wdrożenia potwierdzonego certyfikatem standardu zapewnienia bezpieczeństwa w globalnym łańcuchu dostaw wg ISO 28000. Stwierdzono, że kwantyfikacja ryzyka jest procesem wyjątkowo trudnym, gdyż dotyczy przyszłych wydarzeń, których oszacowanie prowadzone jest w sytuacji ograniczonego dostępu do pewnych informacji i wiąże się z subiektywną opinią i wykorzystaniem doświadczeń i wiedzy oceniającego.

Introduction

Modern logistic enterprises operating under conditions of high competitiveness are made to search for uncommon means of survival on the market and to compete against prospering rivals. Such possibility is provided by participation in the global supply management chain.

Seaports are among the most essential links of the transport chain, being a complex communication junction combining land and sea transport (compare figure 1). Their location close to cities, concentrating a significant cargo mass on relatively small space, the neighbourhood of port-related enterprises essentially affected the undertaking of

activities aimed at ensuring safety and protection of the ports themselves, as also the people employed there, port equipment and infrastructure, means of transport included [1, 2]. The availability of port services became a crucial factor favouring regulations in the scope of good practice concerning the safety of ports and port objects.

Safety of the marine supply chain participants

In December 2002, after nearly one year's work, the International Maritime Organisation (IMO) accepted the International Ship and Port Facility Security – ISPS Code. The Code was introduced in

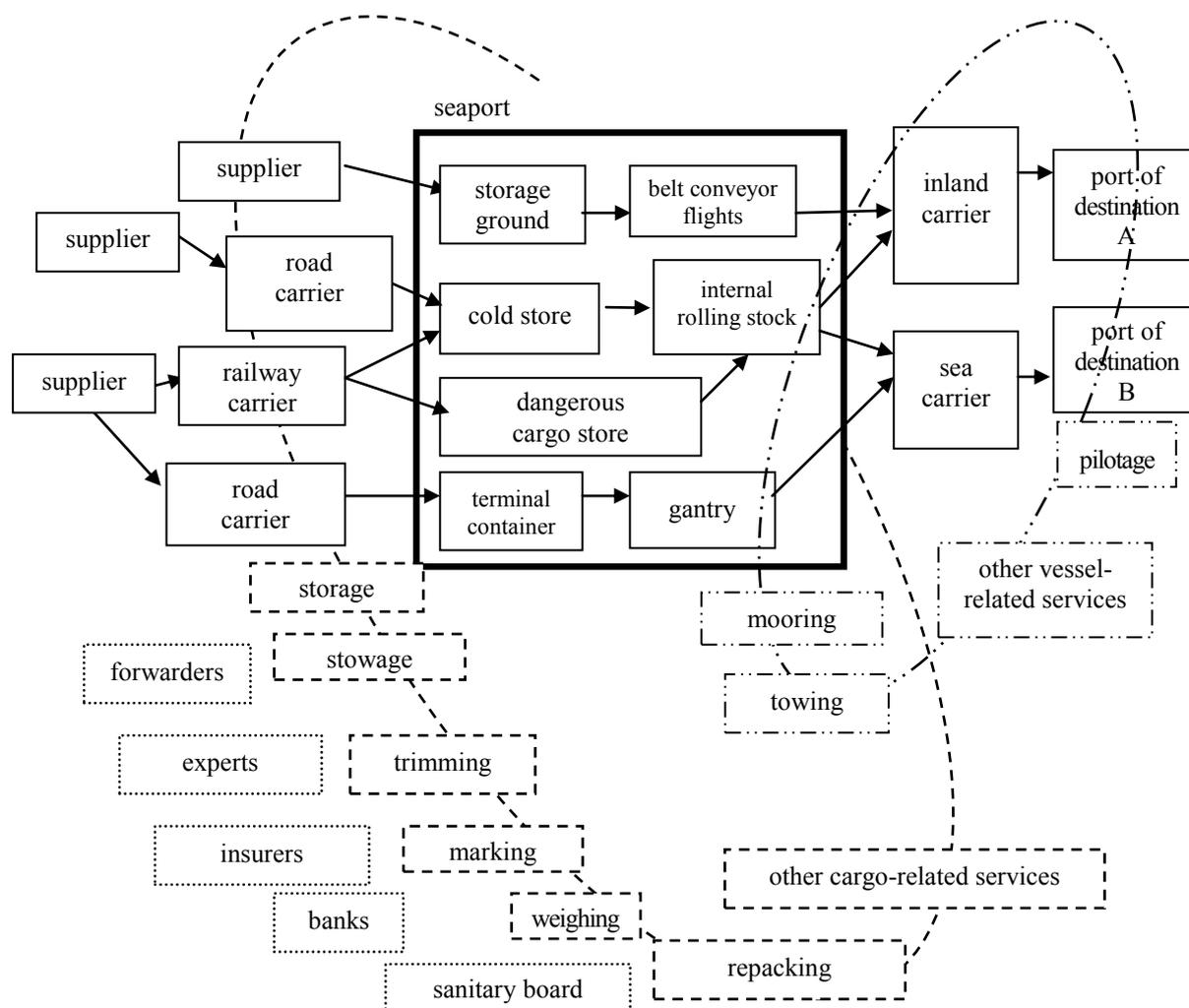


Fig. 1. The seaport as a land-sea link of the transport chain

Rys. 1. Port morski jako łącznik komunikacyjny między lądem a morzem w transporcie morskim

in the form of an appendix to the SOLAS 1974 – International Convention for the Safety of Life at Sea amendment. SOLAS provides chapters concerning, among other things, fire protection, fire detection and fire extinction, life-saving appliances and arrangements, safety of navigation, carriage of cargoes, carriage of dangerous goods, management for the safe operation of ships, safety measures for high-speed craft, additional safety measures for bulk carriers – resolution 2 concerning the introduction of ISPS Code. Chapter XI of the convention, “Special measures to enhance maritime safety” was altered to Chapter XI-1, and Chapter XI-2 was added “Special measures to enhance maritime security”, concerning the present code. The above resolutions, operative in Poland from 1st July 2004, provide the international framework for cooperation between vessels, objects and port appliances for the purpose of identifying and preventing acts menacing safety in sea transport. In accordance with IMO

objectives, all amendments to the convention stress and favour the need to raise awareness and development of culture concerning protection and safety. All participants involved in the functioning of vessels and ports should be aware of potential dangers to navigation. The newly created regulations have provided a tool permitting the realisation of the priorities mentioned.

The next step towards increasing the safety of organising cargo transport between the shipper on one continent and the receiver on another was a common enterprise of government administrations and economic circles, verified in 2007, described as the C-TPAT (Customs-Trade Partnership Against Terrorism) agreement. The specific requirements cover importers, licensed customs brokers, air carriers, sea carriers, land carriers (railway and road carriers), firms consolidating air shipments, sea transport agents and multimodal transport operators (NVOCC – Non Vessel Operating Common Carri-

er) and warehouses. Separate requirements concern sealing cargo units and containers [3].

The basis for C-TPAT is the stage of risk estimation, next planning and activities aimed at minimising risk. Therefore, the program allows for flexibility and the customization of security plans based on the member's business model. Consolidators must have written and verifiable processes for the screening and selection of business partners including foreign contractors. Ensure that contracted service provider companies who provide transportation, cargo handling, and security services commit to Security Guidelines. Periodically review the performance of the service providers to detect weakness or potential weaknesses in security.

Consolidators should ensure that all contracted service providers have procedures in place to maintain container security. Container integrity must be maintained to protect against the introduction of unauthorized material and/or persons. At point of stuffing, procedures must be in place to properly seal and maintain the integrity of the shipping containers. All seals must meet or exceed the current PAS ISO 17712:2006 for high security seals [4]. This standard establishes uniform procedures for the classification, acceptance and withdrawal of acceptance of mechanical freight container seals. It provides a single source of information on mechanical seals which are acceptable for securing freight containers in international commerce.

Procedures must be in place to verify the physical integrity of the container structure prior to stuffing, to include the reliability of the locking mechanisms of the doors. A seven-point inspection process is recommended for all containers: front wall, left side, right side, ceiling / roof, inside / outside doors, outside / undercarriage. Written procedures must stipulate how seals are to be controlled and affixed to loaded containers. Procedures must be in place for recognizing and reporting compromised seals and/or containers to U.S. Only designated employees should distribute container seals for integrity purposes. Containers must be stored in a secure area to prevent unauthorized access and/or manipulation. Procedures must be in place for reporting and neutralizing unauthorized entry into containers or container storage areas.

Taking into account staff processes must be in place to screen prospective employees and to periodically check current employees. Maintain a current permanent employee list (foreign and domestic), which includes the name, date of birth, national identification number or social security number, employment history and references must be verified prior to employment.

The trend of enterprises to increase effectiveness and ensure competitive advantage inclines the top management to make decisions resulting in implementing management systems according to ISO standards. Undoubtedly, preparing for certification and implementing the requirements of any quality standard (depending on the branch and kind of activity) yields measurable advantages in the form of lowering costs by more effective use of resources, standardising and binding systemic documentation and systemic actions (audits, reviews, corrective and preventive measures etc.), comprehensiveness of management or stimulating innovative solutions in the realm of management.

To ensure proper safety in international trade, in 2005 the International Standards Organization worked out the first edition of ISO/PAS 28000 standard, revised last year and appearing in the form ISO 28000:2007: Specification for security management systems for the supply chain [5, 6].

The standard's requirements define guidelines for constructing systems of managing processes in organisations cooperating within a supply chain. The structure of the system, built on the basis of this standard's requirements, permits the risk minimisation of incidents and preventing negative events likely to occur in particular supply chain stages. The system's construction is based on the risk estimation of particular process elements (financial, production, information flow etc.). The application of the guidelines as based on the standard mentioned is feasible in any type of organisation (production, service, storage, transport enterprises), where the specificity of processes and customers' demands necessitate proper safety mechanisms.

Global supply chain – analysis result

By means of IDI, Individual in-Depth Interview, with representatives of leading certification units of domestic and international range (SGS, TUV, PCBC, LRQA, DNV, BVQI, KEMA) information was obtained on implementing a standard in accordance with ISO 28000 in just one firm in the world.

The first ISP/PAS 28000:2005 certificate concerning safety in the international supply chain was confirmed by Lloyd's Register Quality Assurance in November 2006. The certificate was received by the operator of container terminal in Dubai DP World.

DP World was formed in September 2005 with the integration of the terminal operations of the Dubai Ports Authority (DPA), which was focused

on the UAE ports of Rashid and Jebel Ali, and DPI (Dubai Ports International) which had been set up to export this success internationally [7].

When it was first established in 1999, DPI had initially applied its expertise to managing ports in the Middle East, India and Europe. Its first project was at Jeddah Islamic Port (in 1999), where it collaborated with its local partner on the management and operation of the South Container Terminal (SCT). In 2003, SCT was the first terminal in the Kingdom of Saudi Arabia to exceed 1 million TEU (twenty-foot equivalent container units) and volumes in 2004 exceeded 1.3 million TEU. DPI then went on to develop successful operations at the ports of Djibouti (2000), Vizag in India (2002) and Constanta in Romania (2003).

In January 2005, DPI transformed its network with the strategic acquisition of CSX World Terminals (CSX WT), the international terminal business of CSX Corporation. This acquisition gave the company a strong presence in Asia with major operations in Hong Kong and China as well as operations in Australia, Germany, Dominican Republic and Venezuela. Importantly for the future development and expansion of its network, DP World also acquired CSX WT's strong project pipeline, which included the 9-berth Pusan Newport (PNC), South Korea, where DP World holds the management contract as well a significant equity interest, and other projects in the rapidly expanding markets of India and the Middle East.

In February 2005 DP World signed an agreement with the Cochin Port Trust (CoPT) to construct, develop and operate an international container transshipment terminal at Vallarpadam, Kochi, India. It is the largest single operator container terminal currently planned in India and the first in the country to operate in a special economic zone. The new terminal will make Kochi a key centre in the shipping world reducing India's dependence on foreign ports to handle transshipment.

In March 2005, DP World was awarded a 30 year concession to develop and operate the container terminal at the Port of Fujairah in the UAE. This was followed in July 2005 by the awarding of a management contract for Mina Zayed Port, Abu Dhabi. These concessions will enable DP World to streamline operations at the major container facilities of the UAE and further increase the choices available to our customers.

In November 2005 we also announced agreements to develop new container terminals at Yarmouk in Turkey and Qingdao in China.

DP World possesses worldwide his branch offices at present. It hugs with one's range eight

regional management teams in: Africa (Djibouti, Mozambique), Americas (Argentina, Canada, Dominican Republic, Venezuela, Peru), Asia Pacific (China, Hong Kong, Indonesia, Philippines, South Korea, Russia, Thailand, Vietnam), Australasia & New Zealand, Europe (Belgium, France, Germany, Romania, UK, Turkey), Middle East (Saudi Arabia), Indian Subcontinent (India, Pakistan), UAE (Dubai, Fujairah, Abu Dhabi). Firm provides a wide range of cargo handling services, with our core activity being container terminal operations. The throughput for the company was around 42 million TEUs (twenty-foot equivalent container units) in 2006. In addition to containers, many DP World terminals are also able to handle: general cargo, bulk cargo, Ro-Ro vessels, passenger.

Realizing the qualitative commandment of continuous improvement DP World worked out mission of one's activity which assembles oneself on: "A global approach to a local business environment where excellence, innovation and profitability drive our core business philosophy of exceptional customer service [8]."

Conclusions

Marine economy, seaports included, is subject to any changes taking place in the world, which results first of all from the international nature of the transport junction which the seaport just is. The cooperation and responsibility of global participants in the logistic chain require not only caring about attaining lucrative financial goals on the part of particular parties, but also, what is stressed more and more frequently, the insurance of safety and possibility of supervision of all transport – storage – procedural operations of particular links of the chain considered as a logistic monolith.

The requirements of the new management system in accordance with ISO 28000 are adapted to the specificity of enterprises, which conduct activity in the range of a supply chain or are somehow dependent on it. This system helps to estimate risk, introduce control and preventive measures permitting the avoidance of threats on the part of the supply chain by subjects acting in all economy sectors; in the same way, other variables, crucial for the functioning of the organisation can be managed, like quality, work safety, or the customer's satisfaction.

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