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Security Threats to Port Critical Infrastructure

Abstract

Critical infrastructure is a key element of the functional security of any country. Sea ports (but also river ports) are part of the CI system of the country. The security of such sites is particularly important for the continuity of supply and transit of goods transported by vessels. Ports have always been protected from potential threats. Today, these threats have become more real, particularly as a result of the Russian Federation's attack on Ukraine. Poland, which today has the status of a frontier state, is a target of espionage and sabotage activities. Security is a state of non-threat. This is the state to which we aspire in every area of modern life of every society, every country. Seaports, like other places, which are essential (special) for the unimpeded and secure delivery of goods. They've always been under special surveillance and special protection. Destruction of the port makes it impossible to transport by sea, which is obvious. Threats to port security come from different sources, but at a time of ongoing war in Ukraine, terrorist attacks come to the fore. It is also necessary to highlight the hybrid actions on the border with Belarus, which affect the state of security. Poland, as a front-line country, is particularly vulnerable to acts of terror, diversion and espionage, which is confirmed by the actions of the special services. Monitoring of seaports is part of the security strategy of the critical infrastructure of these places. The threat of CI ports is real, especially at the present time. This applies in particular to the LNG terminal in Świnoujście, which is regularly visited

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by ships (gas carriers) supplying raw materials of strategic importance. Violation of security rules (principles) may lead to a threat that cannot be ruled out, however, the most important and dangerous are those that come from the outside and are of an intentional nature.

Key words: critical infrastructure, threat, security, seaport

Introduction

Critical infrastructure is a term defined in the Crisis Management Act. This also includes the infrastructure of seaports. The purpose of this study is to identify potential threats to such facilities, in particular those related to the ongoing war beyond Poland's eastern border. The analysis of the literature on the subject and other sources leads to the conclusion that such threats are not only theoretical issues. The presented text consists of several parts in which the essence of the port's critical infrastructure, its security, potential threats and security management in these places are presented.

Critical port infrastructure

The legislator defined the term critical infrastructure in Art. 3 point 2 of the Act of 26 April 2007 on crisis management. In the statutory approach, these should be understood as „systems and their functionally related objects, including buildings, devices, installations, services crucial for the security of the state and its citizens and serving to ensure the efficient functioning of public administration bodies, as well as institutions and entrepreneurs. Critical infrastructure includes systems:

- a) supply of energy, energy resources and fuels,
- b) communication,
- c) ICT networks,
- d) financial,
- e) food supply,
- f) water supply,
- g) health protection,
- h) transport,
- i) rescue,
- j) ensuring the continuity of public administration,

k) production, storage, storage and use of chemical and radioactive substances, including pipelines of hazardous substances”¹.

In view of this definition, port facilities (in the broadest sense) fall within the scope of the term „port infrastructure” primarily because they are intended for the supply of energy resources, fuels, food and transport systems. The definition of the term in question is also found in the Directive of the Council of the European Union 2008/114/EC of December 8, 2008 (Art. 2): „critical infrastructure’ means a component, system or part of infrastructure located within the territory of the Member States which is essential for the maintenance of essential social functions, health, safety, security, material or social well-being of the population, and the disruption or destruction of which would have a significant impact on the Member State concerned as a result of the loss of those functions”². All these systems, functioning as intended, ensure security of supply or transit of goods. The literature on the subject emphasizes that seaports are among the most complex, in terms of space, socio-economic and subjective, organisms in the modern world economy³. It is difficult to disagree with the thesis that seaports are a conglomerate consisting of quays, port handling facilities, storage facilities, internal and access roads, service buildings and port administration. According to Przemysław Pozański, the infrastructure of seaports consists of two main parts, namely the water and the land part. The water part consists of waterways, anchorages, port basins, while the land part consists of port areas: quays, storage yards, warehouse buildings, handling facilities, communication routes, petrol stations, etc.⁴. Seaports in Poland are places with limited access, which means that only authorised entities have access to the port area. In today’s reality, the protection of these areas is carried out by specialized agencies. The Regulation of the Minister of Infrastructure of 24 November 2021 on the determination of port waters and publicly accessible facilities, equipment and installations forming part of the

1 Act of 26 April 2007 on Crisis Management, Journal of Laws 2023, item 122.

2 Council Directive 2008/114/EC of 8 December 2008 on the Identification and Designation of European Critical Infrastructures and the Assessment of the need to improve their protection (Text with EEA relevance), Official Journal of the European Union 2008, L 3450.

3 M. Pluciński, *Pomoc publiczna w realizacji inwestycji infrastrukturalnych w portach morskich. Przykład portu Szczecin*, „Problemy Transportu i Logistyki” 2017, no. 1, p. 259–271.

4 P. Pozański, *Współczesne zagrożenia elementów infrastruktury morskiej oraz systemy ich detekcji*, „Polish Hyperbaric Research” 2011, no. 2, p. 20.

port infrastructure for each port of fundamental importance for the national economy specifies precisely which elements are part of the port infrastructure of Polish seaports⁵.

Security of critical port infrastructure

Port infrastructure falls within the scope of the critical infrastructure of the State because of the importance for the security of the functioning of the State, for example in the area of food supplies, fuels such as and other goods. Every modern seaport in Poland has compatible road and rail connections, which is of particular importance in the distribution of goods. A special element of CI is the gas port in Świnoujście. Security is commonly understood as the absence of threats. The term is broadly defined in the subject literature⁶, hence, citing individual definitions seems unnecessary due to the limited scope of the study. Port infrastructure is unique and is not limited to quays, warehouses or handling facilities. It is assumed that „seaports, as large spatial and technological economic complexes with a complex and diversified industrial and economic structure, belong to areas whose facilities require special protection”⁷. Safety in this case has a multi-faceted or multi-segment dimension (e.g. fire protection, transshipment). It is fully understandable that care for safety (lack of threats) determines the functioning of the port and its role in international maritime transport.

Security threats to port critical infrastructure

Ports are places at the heart of security science. Numerous studies point to different risks, including those of a human-dependent nature and those where

5 Regulation of the Minister of Infrastructure of 24 November 2021 on the determination of port waters and publicly accessible facilities, equipment and installations forming part of the port infrastructure for each port of fundamental importance for the national economy specifies precisely which elements are part of the port infrastructure of Polish seaports, *Journal of Laws* 2021, item 2334.

6 S. Koziej, *Bezpieczeństwo: istota, podstawowe kategorie i historyczna ewolucja*, „*Bezpieczeństwo Narodowe*” 2011, no. 2, p. 19–39.

7 A. Tubielewicz, M. Forkiewicz, P. Kowalczyk, *Zarządzanie kryzysowe w portach morskich*, „*Komputerowo Zintegrowane Zarządzanie*” 2010, no. 2, p. 585.

there is no such dependence (natural). Numerous scientific papers provide different definitions of the term „hazard”. Just for the sake of consideration, we would like to stress that this is the opposite of the term „security”, which is nothing new, and even more revealing. Piotr Lubiewski and Aneta Drózdź concluded that the list of threats in the modern world is not closed. Natural hazards are unpredictable, but also those that are the result of destructive human activities⁸. Recently, the greatest threat to the CI ports is considered to be terrorist activities. It is difficult to disagree with such a thesis in the perspective of the war going on beyond the eastern border of Poland. In the light of these considerations, the Russian Federation’s attack on Ukraine proves that it is right to highlight the terrorist threat to seaports, but also to the associated transport routes (rail and road). Examples are artillery shelling, bombing or drone attacks on port infrastructure in Odessa and other Ukrainian seaports. Destruction of port grain warehouses, damage to quays and handling equipment is a vivid expression of the terrorist activity of Russian troops. On the one hand, the CI of the port was destroyed, on the other hand, food (grain) prepared for transport by sea. Poland (Świnoujście) has the newest European gas port. It is precisely to Świnoujście that ships transport liquefied gas, which is stored in tanks at the port and then transported inland. Gasport, like any port, is subject to special protection due to its purpose. Fuels are raw materials that are of strategic importance for the security of any country. Damage to the port’s CI causes a serious threat not only in the sphere of interrupted deliveries, but also generates an environmental threat. Access to the LNG terminal is monitored. Physical security and segregated areas are obvious elements of a security system. In the literature on the subject, it is emphasized that it is particularly important to assess the risk of a threat, which is understood as „the dependence of the consequences and the probability of an event threatening security. It is about identifying potential, intentional, unlawful acts committed to damage or destroy ships, port facilities and harbours”⁹. In the case of a port dedicated to the transport of fuel, the risk is always very high. According to Andrzej Ostrokólski, Przemysław Rajewski and Magdalena Łuczowska, „the greatest threat to ships and ports, due to the number of incidents, is not terrorist attacks, but mistakes made by people working on ships and ports or securing their functioning. In second place are

8 P. Lubiewski, A. Drózdź, *Zagrożenie – rozważania na gruncie teorii*, „Zeszyty Naukowe Państwowej Wyższej Szkoły Zawodowej im. Witelona w Legnicy” 2020, no. 1, p. 85.

9 A. Tubielewicz, M. Forkiewicz, P. Kowalczyk, op. cit., p. 583.

the risks caused by the failure of technical equipment. It is only in the third place that criminal and terrorist activities should be identified as a source of threat, although the consequences of these activities may be the most severe and cause the greatest losses"¹⁰ (10 p. 133). It is difficult to disagree with this thesis, although in the context of the current situation (the ongoing war in Ukraine), the threat of terrorist acts has increased significantly in the states supporting the attacked state. This risk has increased in particular in the area of Polish ports through which Ukrainian grain is transported to third countries. The threat of this nature has clearly increased, among other things because the Polish intelligence services report further arrests of citizens of the Russian Federation and Belarus, suspected of espionage activities against the Republic of Poland. Such arrests took place in various regions of the country, including Zachodniopomorskie Voivodship. Importantly, in all cases, the courts decided on the provisional arrest of the suspects at the request of the law enforcement authorities, which clearly indicates the high social harmfulness of the acts alleged against these foreigners.

Port infrastructure security management

Security management is a complex process, which is emphasized in the subject literature. Andrzej Tubilewicz, Marcin Forkiewicz and Piotr Kowalczyk are of the opinion that the assessment of the state of port security is based on the regulations contained in the International Ship and Facility Security Code, the International Ship and Port Facility Security Code¹¹. The authors clearly emphasise „the assessment of the level of risk of a breach event occurring. Risk is understood as the dependence of the consequences and probability of occurrence of a security event. It is about identifying potential, intentional, unlawful acts aimed at damaging or destroying ships, port facilities and ports"¹². Bearing in mind the threats (in the broadest sense) caused by the aggression of the Russian Federation against Ukraine, it should be pointed out

10 A. Ostrokólski, P. Rajewski, M. Łuczowska, *Polityka bezpieczeństwa a dostrzeżenie zagrożeń bezpieczeństwa portów morskich*, „Rocznik Bezpieczeństwa Morskiego” 2008, no. 2, p. 133.

11 M. Forkiewicz, A. Tubielewicz, *Założenia modelu zarządzania kryzysowego bezpieczeństwem w portach morskich*, „Logistyka” 2011, no. 5, p. 582.

12 Ibidem, p. 583.

that, in addition to the typical identified (known) threats, a special place has been taken by those associated with acts of terror and diversion. According to Józef Urbański, Waclaw Morgasius and Zdzisław Kopacz, the term „management” „from a praxeological point of view is an action consisting in causing the functioning of things, persons and organisations, type of activity, etc. subordinate to the manager in accordance with the objective set by him”¹³. The authors also emphasize the essence of the management process, including the formation of the objective of the activities, the planning of the ways of implementation (as well as its control) and the acquisition and deployment of the necessary resources¹⁴. Security management is really the administration of a continuous process. Shipping is closely linked to ports, without which it would not be possible. The literature of the subject emphasizes the importance of managing the security of seaports¹⁵.

In the 21st century, the protection of critical infrastructure in seaports is reinforced by increasingly modern technological measures. Security administration is a compatible system that takes into account all potential threats and their consequences and ways to eliminate them. In managing the security of CI ports, it is important not only to protect the port, but also the people working there, which is emphasized in the literature¹⁶.

13 J. Urbański, W. Morgaś, Z. Kopacz, *Żegluga morska: jej przedmiot, zasady zarządzania oraz zarządzanie jej bezpieczeństwem morskim i ochroną na Południowym Bałtyku*, „Zeszyty Naukowe Akademii Marynarki Wojennej” 2007, no. 4, p. 131.

14 Ibidem.

15 R. Leśmian-Kordas, J. Pleszko, *Ocena postępu i kierunków wdrażania systemów zarządzania jakością i systemów komplementarnych w portach Morza Bałtyckiego*, „Towaroznawcze Problemy Jakości” 2007, no. 4, p. 103–110; P. Popovic, R. Orlandic, *Systems for improvement of business integrated management processes in ports*, „International Journal for Quality Research” 2017, no. 1, p. 113; C.A. Durán, F.M. Córdova, F. Palominos, *Method for improving critical strategic and operational success factors in a port system*, „Procedia Computer Science” 2028, no. 139, p. 448–455; R. Nováková, K. Cekanova, A. Pauliková, *Integration management system – new of requirements of ISO 9001: 2015 and ISO 14001: 2015 standards*, „Production Engineering Archives” 2016, no. 4, p. 35–40.

16 M. Kopczewski, J. Szużalski, *Ochrona infrastruktury krytycznej obiektów portowych/baz morskich*, „Rocznik Bezpieczeństwa Morskiego” 2013, vol. 7, no. 3, p. 157–170.

Conclusion

Security is a state of non-threat. This is the state to which we aspire in every area of modern life of every society, every country. Seaports, like other places, which are essential (special) for the unimpeded and secure delivery of goods. They've always been under special surveillance and special protection. Destruction of the port makes it impossible to transport by sea, which is obvious. Threats to port security come from different sources, but at a time of ongoing war in Ukraine, terrorist attacks come to the fore. It is also necessary to highlight the hybrid actions on the border with Belarus, which affect the state of security. Poland, as a front-line country, is particularly vulnerable to acts of terror, diversion and espionage, which is confirmed by the actions of the special services. Monitoring of seaports is part of the security strategy of the critical infrastructure of these places. The threat of CI ports is real, especially at the present time. This applies in particular to the LNG terminal in Świnoujście, which is regularly visited by ships (gas carriers) supplying raw materials of strategic importance. Violation of security rules (principles) may lead to a threat that cannot be ruled out, however, the most important and dangerous are those that come from the outside and are of an intentional nature.

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Zagrożenia bezpieczeństwa infrastruktury krytycznej portów

Streszczenie

Artykuł dotyczy zagrożeń infrastruktury krytycznej portów morskich w Polsce. Infrastruktura krytyczna jest kluczowym elementem bezpieczeństwa funkcjonowania każdego państwa. Porty morskie, a także porty rzeczne wchodzą w skład systemu IK kraju. Bezpieczeństwo takich miejsc jest szczególnie istotne dla ciągłości dostaw i tranzytu towarów przewożonych statkami. Porty zawsze były chronione przed potencjalnymi zagrożeniami. Dziś zagrożenia te stały się bardziej realne, szczególnie w wyniku ataku Federacji Rosyjskiej na Ukrainę. Polska, która dziś ma status państwa przygranicznego, jest celem działań szpiegowskich i sabotażowych.

Monitoring portów morskich wpisuje się w strategię bezpieczeństwa infrastruktury krytycznej tych miejsc. Zagrożenie bezpieczeństwa IK jest realne, zwłaszcza obecnie. Dotyczy to w szczególności terminalu LNG w Świnoujściu, który regularnie przyjmuje statki (gazowce) dostarczające surowce o znaczeniu strategicznym. Najbardziej niebezpieczne są te zagrożenia, które pochodzą z zewnątrz i mają charakter zamierzony.

Słowa kluczowe: infrastruktura krytyczna, zagrożenie, bezpieczeństwo, port morski