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ALL ON TIME IN THE LOGISTICS OF SECURITY AND CRITICAL INFRASTRUCTURE

Przedstawiony artykuł może posłużyć do głosu w dyskusji lub wykorzystania i popularyzowania nauk o logistyce w bezpieczeństwie. W ramach swych kompetencji i możliwości, wraz ze studentami autor bada zasady wykorzystywania logistyki, formy czy metody przygotowania i funkcjonowania gospodarki narodowej, poszczególnych podmiotów użytkujących i wykorzystujących IK. Próbuje ustalić co jest niezbędne do spełniania zadań na rzecz bezpieczeństwa państwa i mieszkańców aglomeracji oraz analizuje i ocenia stan bezpieczeństwa we wszystkich jego wymiarach i kształtach. Zawartość artykułu obejmuje: wątki z teorii logistyki, związki z innymi działaniami które ograniczają możliwości wypełnienia swej roli i funkcji w społeczeństwie. Na zakończenie podnoszone są kwestie podstawowych zagadnień dotyczących podmiotów odpowiedzialnych za poszczególne elementy bezpieczeństwa infrastruktury nawet jeśli ona nie jest ustawowo zaliczona do krytycznej.

This article can be used in discussions and popularization of logistics in security as a science. The author has cooperated with the students and within the framework of their competence and capabilities, the rules for the use of logistics, forms and methods of preparation and operation of the national economy and individual entities using CI are hereby presented. The author attempts to determine what is necessary to fulfil the tasks for the security of the state and the agglomeration and analyse and assess the security situation in all its dimensions and shapes. Article content includes topics from the theory of logistics, associations with other activities that limit the ability to perform its role and function in a society. At the end the fundamental issues concerning the entities responsible for various elements of infrastructure security, even if not officially classified as critical, are raised.

Słowa kluczowe: infrastruktura krytyczna, potrzeby społeczności lokalnej logistyka obszary bezpieczeństwa.

Keywords: logistics, security areas, critical infrastructure, the needs of local community.

Introduction

As the basis for the proposed logistics management procedures in emergency situations, the textbook author adopted the latest trends in logistics' perception (as a scientific discipline) in its three main aspects: functional, where logistics is presented as a general process of management, including the formulation of strategies, planning, organizing, motivating and controlling; objective, in which logistics is presented as a body of knowledge about the physical flow of materials (read - supply measures), logistics services and information between suppliers and customers; and evaluation of logistics which is treated as a scientific discipline that provides solutions for high performance of business processes oriented to meet customer needs (read - the recipient). Emergency logistics, precursors of which are military logistics and business logistics, considered by the textbook author as a scientific specialization, is the sum of all the activities of management and executive units implementing the logistical (and medical) tasks, that shape, control and monitor the procurement processes and services in the logistics chains organized in crisis. Through the integration and synchronization of logistics, strictly necessary supplies as well as logistical and medical services should reach the affected population on the right time, in the right place, in the right (desirable, necessary) quantity and the right quality (in the proper condition).

Task definition

The primary objective of this article is to help the reader understand and acquire the most important issues related to the organization of logistic protection of the affected population in crisis situations caused by non-military threats. When a potential crisis appears, security logistics functions in its full sense and all the activities are consistent with the provisions of the Act of 26 April 2007 on emergency management (Journal of Laws of 2007 No. 89, item 590) and the Act of 18 April 2002 on the state of natural disaster (Journal of Laws of 2002 No. 62, item 558). It is generally accepted that the supply together with logistic and medical services (necessary to protect the affected population's health and life and to survive the crisis) are carried out efficiently, if they reach all recipients: the right time, the right place, the proper form and the relevant (necessary) quantity. Logistic support for the affected people in crisis situations includes the supply of vital products together with logistic and medical services organized by the logistics organs (working groups - a group of logistic support, a group of health care and social-existential assistance) supervised by crisis management teams appointed at various levels of public administration. The products provided to the affected population in crisis are mainly: drinking water, food, consumer goods (clothes, personal hygiene products, bedding, household products, cleaning products, alternative light sources), energy (fuel, liquid fuels, gas, electricity, etc.).

Logistic services and medical services for the affected population in crisis situations are divided into specialized services, economic-existential services, and social assistance. Specialized services are: medical-evacuation activities, sanitary-hygienic activities, anti-epidemic activities, transport and repair services. On the other hand, economic-existential services include gastronomic services (preparation and delivery of meals), baking and delivering bread; lodging services (provision of temporary accommodation), bathing and laundry services, shoemaking and tailoring services, hairdressing services, commercial services, etc. Social assistance is usually financial help (payment of cash allowances) and material help (issuance of food parcels and cleaning products) for people who have problems in overcoming difficult situations by themselves. It needs to be emphasized that the logistic security for the affected population in crisis is organized and carried out under time pressure. Logistics seems to be more important than other services, ex. Just In Time. In this case, the needs represent the expectations of a society (people affected), formulated as a request to assure the conditions of survival in the event of an emergency, and also to eliminate the threat and the consequent risk of loss of life, health, and environmental destruction.

Findings

Efficient and effective implementation of logistic and medical tasks for the people affected in crisis situation requires the organization of logistics management. It is a component of the crisis management. Logistic management in crisis situations, such as other types of management includes: formulation of strategy, planning, initiating, controlling and monitoring the implementation of logistic (and medical) tasks throughout the supply chain (supply and services) organized for the affected population. Logistic groups are responsible for logistics management (groups of logistic security and groups of health care and social-existential assistance). The issue of protection of strategic buildings has been included, inter alia, in the law on the objects of particular importance to national security and defence, and their special protection. The abovementioned regulation enumerates a number of areas, facilities and equipment subject to mandatory protection and specifies the criteria for the distribution of the infrastructure, dividing it into defence-related, protection of economic interests of the state, public security and other important interests of the state. The areas were also included in the study on the police cooperation with other security organs. The regulation indicates the categories and the importance of buildings, the author cites them in order to raise their strategic value which cannot be replaced by financial means. Other divisions associated with the state defence potential include:

- manufacturing and refurbishing plants, armaments, military equipment and munitions' warehouses;

- research and development plants as well as construction plants in the field of security and defence;
- state reserves warehouses (ex. database, storage of liquid fuel, food, medicines and sanitary materials);
- objects subordinated to the minister of national defence or supervised by the minister;
- infrastructure facilities of road, rail, air, sea, communications and inland water transport;
- centres of geodetic and cartographic documentation;
- dams;
- hydro-technical equipment;
- buildings belonging to entities of Intelligence Agency;
- buildings of the Polish National Bank;
- buildings of Bank Gospodarstwa Krajowego (institution providing banking services for the public finance);
- buildings of Polish Security Printing Works and Mint of Poland;
- telecommunication facilities broadcasting radio and television programs;
- buildings and places which manufacture, use or store nuclear material or radioactive sources and waste.

These areas are certainly included in the areas of interest of logistics and play a significant role in the proper functioning, maintenance, use and safety.

The second category includes buildings related to the proper functioning of the public administration and ensuring an adequate level of security and public order:

- buildings of organizational units subordinated to the minister of internal affairs and administration or supervised by the minister;
- buildings of organizational units of the Internal Security Agency;
- buildings of the Police, Border Guard and State Fire Service;
- buildings that are the properties of the Minister of Justice, Prison Service and organizational units that are subject to the Minister of Justice or are supervised by the

minister;

- plants related to the extraction of minerals;
- buildings (places), which manufacture, use or store materials that pose a risk of fire or explosion;
- buildings in which people use toxic chemicals and their precursors, biological and microbiological microorganisms, toxins and other substances that cause illness in humans and (or) animals;

- power plants and other power facilities;
- other buildings within the jurisdiction of the authorities of government or local government bodies, formations, government agencies, and private entrepreneurs.

According to the Act on Crisis Management on 26 April 2007, protection of critical infrastructure shall be associated with the following systems:

- energy supply and consumption;
- communications and networks;
- financial systems;
- water and food supply;
- health care;
- transport and communication;
- life-saving systems;
- systems ensuring the continuity of the public administration;
- production, storage, handling and use of chemicals and radioactive hazardous substances including pipelines.

All of these areas show which important objects are assigned to critical infrastructure requiring constant monitoring, upgrading, maintenance and modernization which need logistics and its systems. Among others, a system Just In Time is used. It is a system of organization of supplying all items including: materials, spare parts, components, semi-finished products, etc., strictly according to the requirements notified by the recipient directly to the position of work (production line) - "just in time". Such a delivery system which is closely synchronized in time with the schedule of the production process (excluding storage) enables reducing costs and capital expenditures due to a significant reduction (or even elimination) of the premises and warehouse space, and a drastic reduction in current assets in the form of stocks.

Most of the following issues in the form of a question, should - depending on the area - give an answer to people dealing with the logistics of security, whether the entity responsible for the security of that critical infrastructure is important and what is its crucial importance and role in the life and functioning of society and urban agglomerations.

- Choosing a provider who offers low prices, or rather the one that ensures fast delivery?
- How important are the frequent deliveries, or rather their punctuality, diligence, honesty?
- Can we afford more shipments in order to reduce storage?
- What kind of supply do we expect - fast, reliable, frequent, large, specialized?
- Is the air supply cost-effective in order to shorten the delivery time?
- How large/small supplies influence the cost of handling orders?
- Is it good to pay attention to useful package, and if so, to what extent it will affect the way and the cost of transportation?
- Talking about packaging with suppliers or manufacturers of packaging?
- What should an advanced information system look like, given the investments which it requires?
- Who should take care of the storage or transport, and whether specialists shall be involved?
- Whom to cooperate with when risk appears and how to do this?
- If the sales department expands its clientele in a certain sector, how it will affect the total cost of distribution?
- Is it possible to reduce the size of packaging in order to reduce the area of the warehouse?
- What is the most common disturbance in the flow of goods? To what extent does it depend on the errors in the system?

Basic tasks for logistics while dealing with critical situations:

1. Shortening and acceleration of all processes at each stage of distribution.
2. Coordination of flow of raw materials, production materials and final products.
3. Minimizing the cost of the flow.
4. Organizing the logistics department requires customer service - supply of a the desired level of service.
5. Optimizing activities to achieve a desired level of performance of the business.
6. Offering customers the right products and information.
7. Developing an adequate level of profit for the company.
8. Efficient and rational flows adapted to the customers or people in need.
9. Coordination and implementation of the objectives of the company in terms of market requirements and the environment.

Main goals of logistics:

1. Achieving long-term satisfaction of customers or people in need.
2. Minimizing the time and cost of physical distribution at a given level of services.
3. Strengthening the position and achieving competitive advantage.
4. Shaping the optimal structure of incurred costs and striving for optimal relation between the level of its current and desired benefits and services and the level of costs.
5. Creating supply and appropriate solutions to problems related to the needs and preferences of customers in the logistic segments of the market.
6. Discovering and creating new potential of productivity and efficiency, and supporting the market success of the company.
7. Create systems and models of cooperation (strategic alliances and alliances of companies).
8. Determination of how much additional profit would the company obtain by improving the quality of service.

Scope of logistics:

The area of interest includes the physical transactions in supply chains. It does not cover parallel transactions consisting of sales and purchase.

1. Selecting the supply of products and materials, parts, components and assemblies.
2. Forecasting demand and purchasing policy.

3. Flow of information.
4. Control of stocks.
5. Distribution - implementation of orders.
6. Inventory management.
7. Transport organization.
8. Service of returns.
9. Storage and location of warehouses.
10. Waste management.
11. Shipment.

Conclusions

In these areas there are visible links between logistics of the companies and emergency logistics in which the companies are also involved, by putting the production on this segment that is necessary or cost-effective. All these and other changes take place step by step or on the basis of requirements of time or urgency. It can be compared with the militarization of the industry not only for the army but also for the needs of victims of the crisis. The first serious reflection on today's components of protection of critical infrastructure in Poland was launched in February 2001 with the participation of the working panel appointed to oversee the security of the Internet CERT Polska (Computer Emergency Response Team) and - then - Bureau of Communications and Informatics Security at UOP. It was a time of thinking of ways to prevent and respond to incidents that disturb the security in the areas of information or network. In the same year, in November, the conference SECURE'2001 revealed NATO's activities in the field of security of all the information. Issues on infrastructure security were also discussed in April 2002 during the "Secure Infrastructure - Coordination of activities in the country", and in subsequent years in all kinds of business meetings with companies and institutions in charge of the infrastructure and ensuring its security.

The most important conclusion from all these meetings was noting the lack of regulation of relations between public authorities responsible for the safety of citizens, and often private owners of infrastructure that provide various services. Being aware of the potentially possible negative effects for large failures, the legislative administration has taken actions aimed at legal regulation of these issues.

In addition to the amendments to the 2007 Law on Crisis Management, the Government Security Centre was established in 2008. One of the main functions of the Centre relating to the protection of critical infrastructure is implementation of the tasks of planning and programme in the field of crisis management and critical infrastructure protection. At the same time the Centre cooperates with institutions and organizational units of NATO and the European Union and other international organizations responsible for emergency management and critical infrastructure protection^[1].

In 2010, the Council of Ministers adopted the National Programme for Critical Infrastructure Protection, which aim is to create conditions to improve the security of critical infrastructure. The most important was to prevent the malfunctioning of critical infrastructure, prepare it to emergency situations, to react to situations of destruction or disruption of critical infrastructure and to restore critical infrastructure. In addition, the program sets national priorities, goals, requirements and standards to ensure the smooth functioning of critical infrastructure, as well as detailed criteria to distinguish objects, installations, equipment and services included in the systems of critical infrastructure, taking into account their importance for the functioning of the state and meeting the needs of citizens. At the same time the institutions and people responsible for these actions are appointed^[2].

The tasks in the field of security and protection of CI are characterized by complexity, manifested not only in terms of its actions to protect, but also actions to reduce the effects of possible disturbances in its functioning so that they are possibly short-lived and not causing additional losses for the citizens and the economy. Planning appropriate actions includes the preparation of appropriate solutions in the event of destruction or disruption of critical infrastructure and should take into account the ensuring of the functioning and the possibility of restoration of critical infrastructure. This is confirmed by the already mentioned act of crisis management where critical infrastructure protection is defined as "all activities aimed at ensuring the functionality, continuity and integrity of critical infrastructure in order to prevent threats, risks or weaknesses and limitations and neutralize their effects and the rapid restoration of the infrastructure for emergency attacks and other events interfering with its proper functioning"^[3].

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^[1] Regulation of 10 July 2008 on the organization and functioning of the Government Centre for Security, Dz. U. 08.128.821 on 18 July 2008

^[2] Regulation of 30 April 2010 on the National Program for Critical Infrastructure Protection, Dz. U. of 17 May 2010 No. 83, item 541.

^[3] Act on management art. 5.... op. cit.

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