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EFFECTS OF ROAD TRANSPORT ON HUMAN SAFETY IN THE MAZOWIECKIE PROVINCE

The objective of the article is to frame a panorama of issues related to the negative influence of road transport-related threats on public safety in the Mazowieckie Province. On the basis of collected empirical data and its interpretation in the light of adopted theoretical assumptions, the author will try to identify and explain the conditions (reasons), types, and directions of changes regarding road transport threats and present their negative impact on security of the population in the study region. The research terminology that we may encounter in the subject literature on the security of the population and society relates to multiple determinants. Conducting a pilot study, it was found that the level of security of the population, living in the territory of the Province depends on the interaction of many negative factors, generated or resulting from activities carried out, which include, among others, risks caused by road transport. The level of security depends, inter alia, on the maintenance standard of existing infrastructure. The main problem of the Polish road network is the lack of motorways and express roads. This is an essential factor in reducing the transport accessibility of Poland and its individual areas. Because of the role that road transport plays in international trade and supply logistics for industry and commerce, the lack of road networks with high bandwidth becomes one of the most important factors causing danger to people using the road infrastructure.

Keywords: Road transport, Public safety, Social security, Road transport threats.

1. INTRODUCTION

Road transport is currently of crucial importance not only to logistics but also to many other areas. From the point of view of its economic definition, transport is a process of production accounting for the movement of people, goods and energy in space with the use of limited resources. In the context of its functions, transport guarantees a flow of resources from a low-demand to a high-demand site. The underlying logistic functions of transport relate to: the consumption function, which entails satisfying shipping needs by the provision of transport services; the production function, meaning satisfying production needs by the provision of transport services, i.e. by offering conditions for a business activity, stimulating this activity, and having an impact on market operations and goods' exchange; and the integration function, which integrates the state and the society via transport services. Safety associated with transport and the marketing of goods relates to the following aspects: assuring security in trade of goods of strategic importance, eliminating terrorist threats to transport infrastructure, and improving road infrastructure used by both civil and military transport users.

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Research terminology applied in source literature with regards to social security refers to manifold conditions. In the course of considerations it was noted that the level of social security of the population inhabiting a given area of a country depends on the effect of numerous negative factors, which are either generated by or resultant from conducted activities, including but not limited to other risks posed by road transport. The present standard of infrastructure maintenance and low quality collective transport stimulate individual car transport development. The basic problem of the Polish road network is lack of motorways and express roads. It is a key factor decreasing transport accessibility of the whole Polish territory and its individual regions. The capacity of connections “between main agglomerations has already been exhausted, resulting in heavy traffic on main state roads. Due to the role road transport plays in international exchange and logistic supplies for industry and trade, such shortage of high-capacity roads is becoming one of the most notable risk factors for populations using road infrastructure. Literature review, own observations, pilot studies, and data provided by the Information Processing Institute revealed that there are no research studies concerning the relationship between social security and the negative effect of road transport threats. Hence, there is a need for research in said area and for solutions aimed at improving social security and reducing the number of risks posed by road transport. Another key issue regarding security of trade of goods of strategic importance is an ongoing supervision to ensure that such goods and technologies are applied for peaceful purposes rather than arrive at countries willing to use them in an unconventional manner. And therefore the European Union trade policy’s application of transport control when exporting dual-use items and technologies. As indicated by expert research, strategic goods are not the only ones on the list of terrorist threats. Threats found in transport affect various lines of business, such as retail, land transport (rail and road transport) and industrial transport. In the examination of aspects of safety related to terrorist attacks in transport, we refer to the notion of anti-terrorism, i.e. all protective actions to reduce the probability of threatening situations or to limit their consequences. Such protection involves drafting crisis management plans and securing and providing measures to grant help and assess potential risks. The Ministry for Transport, Construction and Maritime Economy specifies the Transport Development Strategy, the main objective of which is to increase transport accessibility and improve safety of road users and the effectiveness of the transport sector by developing a coherent, sustainable and user-friendly system of transport on the state, European and global level. The strategic goal of the above strategy is to create an integrated system of transport and conditions allowing smooth functioning of transport markets and effective development of transport systems. A specific aspect of research concerns considerations on the influence of risks posed by road transport on social security. And it is the study’s objective to present the specificity of the issue.

2. THE IDEA OF SOCIAL SECURITY

For the purpose of conducting research in the thematic area, the author has selected a number of definitions regarding social security found when analysing Polish literature. For B. Rysz-Kowalczyk, social security means “freedom from want of material means of subsistence and presence of real guarantees of complete development of individuals, hence involving not only freedom from social risks but also from threats regarding psychological and social development of an individual that could originate from all social, political and

economic determinants”². R. Jakubczak, R. Kalinowski and K. Loranty, on the other hand, are of an opinion that social security referring to some components constituting the category of a society is defined as “quality of culture of the society, social structure and the system of distribution of work, allowing citizens to achieve individual values, manifested through undertaking cooperative actions oriented at common good by individuals, and natural and formal groups, and realizing well-recognized values of cultures with the use of accepted measures, and also maintaining and reinforcing social bonds assuring the shaping of community identity of a society under state’s political organization”³.

According to M. Leszczyński social security refers to “all legal, organizational actions carried out by (national and international) government entities, non-governmental bodies and citizens themselves, which aim at assuring a certain level of life to people, families and social groups and at preventing their marginalization and social exclusion...”⁴. The definition of social security formulated by A. Korcz, based on general security principles and understood within the context of national security, determines “such state of the society which ensures not only continuation and survival of the state-nation but also its development”⁵. For the purpose of this study the following definition of social security by A. Skrabacz is adopted: “as one of categories of national security, [social security] stands for protecting existential basics of human life, ensuring for ability to meet individual needs (material and spiritual ones), and accomplishing life aspirations by creating conditions for work and study, health protection and pension guarantees”⁶.

3. POPULATION SAFETY AND SOCIAL SECURITY VERSUS ROAD TRANSPORT THREATS

A structural problem of the Polish road network is that roads pass through developed areas thriving along road axes. This refers to both urban and rural areas. Transit traffic disorganises and disturbs life in many Polish cities. It often affects historical city centres. On many occasions, traffic becomes a nuisance for the inhabitants as it causes accidents, noise, fumes and vibrations. This, along urban traffic, leads to serious traffic congestion. On the other hand, transit through cities results in the creation of bottlenecks in the national road network, which decreases its capacity. The only solution is to move transit traffic out of the urban areas through the construction of ring roads.

Small towns and rural areas suffer not only from the unusual burden of transit traffic but also from exceptionally large risk it poses to health and life of their populations. In Poland, small towns and villages develop alongside main communication routes, in the immediately contiguous areas, which makes the state roads crossing through them major communication routes used for walking and cycling. To increase safety of people living there one needs to

² B. Rysz-Kowalczyk (ed.), *Leksykon polityki społecznej*, Warszawa 2001, p. 20.

³ R. Jakubczak, R. Kalinowski, K. Loranty, *Bezpieczeństwo społeczne w erze globalizacji*, Siedlce 2008, pp. 59–60.

⁴ M. Leszczyński, *Bezpieczeństwo społeczne a bezpieczeństwo państwa*, Kielce 2009, p. 37.

⁵ A. Korcz, *Bezpieczeństwo społeczne Rzeczypospolitej Polskiej*, materiał na prawach maszynopisu <http://adamkorcz.w.interiowo.pl/spol.pdf>, p. 18 (04.01.2016 r.).

⁶ A. Skrabacz, *Pojęcie, typologia i uwarunkowania bezpieczeństwa społecznego XXI wieku* [w:] *Współczesne bezpieczeństwo społeczne*, ed. M. Kubiak, M. Miękina, Warszawa–Siedlce 2013, p. 37.

build pavements, install traffic safety devices, and in many cases also stabilise traffic by constructing roundabouts, curving vehicle paths, elevating pedestrian crossings and cross-roads, etc.

One of the drawbacks of the state road network in Poland is an insufficient number of bridge crossings, especially through large rivers. The longest distance between distinct crossings on the Vistula river is 82 km. Having regards to the obstacles to the state system of transport, the most crucial areas involved are the northern and central part of Poland. The river contours enhance developmental disproportions between different regions. Yet another problem is poor capacity of many of the existing bridges.

The parts of state roads crossing urban districts are overseen by municipal management boards. The condition of these road sections is worse than that of the remaining parts. Their improvement is associated with very high costs generated, for example, by the need to build new bridge crossings, ring roads within cities, to add new lanes or to construct multilevel crossroads. Such investment usually exceeds financial capabilities of cities, hence it is necessary to support modernization of urban sections of state roads with state resources.

The General Directorate for National Roads and Motorways (in Polish: Generalna Dyrekcja Dróg Krajowych i Autostrad), which is a central authority, acts as an investor managing all new projects involving state roads (but for the sections of roads in urban districts). As a central governmental authority, GDDKiA is subject to limitations regarding the number of jobs and the payment fund, which seriously impedes investor works. At the same time, the general increase in investment expenditure creates demand for skilled staff in design and contractor companies, leading to an outflow of GDDKiA's human resources. For instance, only some of the employees of the former body, the Agency for Construction and Maintenance of Motorways, transferred to GDDKiA. The rest of staff found employment in commercial companies. These issues ought to be regulated urgently⁷.

Roads do not conform to the requirement for 115 kN per axle. The total number of kilometres of roads conforming to the requirement for axle load of 115 kN is currently 637 km. The EU Accession Treaty provides that in the international transport corridors running through Poland past 2008 the distance of roads meeting the above requirement for 115 kN per axle will be incrementing as follows: as of 1st January 2009 – 1,975.4 km, as of 1st January 2010 – 2,216.50 km, as of 1st January 2011 – 2,502.80 km. Such increase in carrying capacity requires large funding.

The condition of road surface is unsatisfactory. Needs regarding road repair and upgrade are unusually large. The present condition of roads is as follows: 46% – good condition, 28% – satisfactory condition, 26% – bad condition.

All this makes it necessary for new investment tasks to be conducted parallel with large scale renovation works and renewals of existing roads. Economic rationale requires that new, spectacular investments do not lead to the reduction of maintenance works or degradation of the infrastructure already in place.

Current condition of road infrastructure significantly affects the level of road safety. Major phenomena include: dangerous passes of roads through towns and cities, including transit roads, incorrectly designed crossroads and pedestrian crossings, lack of clear division into non-motorised transport modes and motorised transport modes, type and direction structure of traffic, "hard" road side environment, and improper road side management. Road network safety can be demonstrated by the following indicators: state roads – 20%

⁷ *Ibidem*, p. 86.

accidents, 37% fatalities, provincial roads – 14% accidents, 20% fatalities, municipal poviat roads – 36% accidents, 15% fatalities, other roads – 30% accidents, 28% fatalities.

Elements of roads and road sides: colliding with a tree or a pole – 11% accidents, 16% fatalities, transit roads passing through towns and cities – 16% accidents, 17% fatalities, crossroads – 23% accidents, 12% fatalities, separate pedestrian crossings – 20% accidents, 9% fatalities⁸.

The present discussion regarding management and effective practical experience of developed countries seem to indicate that there is a need for company aims and strategies to become predominantly time, quality, flexibility, innovation, and safety-oriented with regards to product development and completion⁹.

Safety is a state of non-threats, security and peace, i.e. freedom from harmful effects of wars.

Safety is a complex structure composed both of mental and non-mental elements, whereas security factors may take on a material and organizational form¹⁰.

4. SAFETY OF CIVILIAN POPULATION DURING MILITARY TRANSPORTS USING ROAD INFRASTRUCTURE

According to the law, strategic goods are products which may constitute a threat to security, peace, human rights considerations and civil liberties. In accordance with the statutory definition, strategic goods are dual-use goods or military goods. They are made for civilian purposes but due to their specific features there is a possibility of using them to manufacture conventional weapons and weapons of mass destruction.

Trading strategic goods is determined by legal provisions, including treaties, conventions and agreements. With the intention to ensuring strategic goods trading security, international bodies and organizations operate worldwide and combat illegal trade with said goods. Amongst the most important of said entities are: UN, Council of Europe, European Union, NATO and OSCE.

Problems regarding specialist transport in Poland refer to unsatisfactory condition of road infrastructure, insufficient capacity of main traffic routes, e.g. traffic limitations during military transport, insufficient interconnections between regions, low level of traffic security, low quality of service regarding intelligent transport systems. As indicated by expert research, strategic goods are not the only ones on the list of terrorist threats. Threats can be detected in the transport of various lines of business, such as retail, land transport (rail and road transport) and industrial transport.

5. SUMMARY

The main directions of interventions to enhance road security as identified and described in the National Programme of Road Security for the years 2013-2020 will concentrate on the following fields: safe behaviour of road users, safe road infrastructure, safe transport vehicles, effective system of emergency medical assistance and medical care, security sys-

⁸ *Ibidem*, p. 89.

⁹ P. Blaik, *Logistyka*, Warszawa 2001, pp. 135–136.

¹⁰ H. Wyrębek, *Wpływ polityki regionalnej na bezpieczeństwo regionów* [in:] *Determinanty bezpieczeństwa państwa*, (scientific ed.) T. Bąk, Z. Ciekanowski, L. Szot, Jarosław 2014, p. 218.

tems for military transport movements. Issues concerning road transport security in relation to reinforcement of institutions and facilitation of operations of competent authorities, including but not limited to the Police, Fire Brigade and other rescue services, have been included in the Strategy 'Efficient State 2020'. They are in line with the guidelines of the IV European Road Safety Action Programme 2011-2020, announced by the European Commission, and the Global Plan for the Decade of Action for Road Safety 2011-2020, specified by the UN. In comparison with many other sectors of the Polish economy, transport has exceptionally high developmental opportunities. Substantive changes in the sector, related mostly to obtaining large funds from EU for structural assistance, have already been started¹¹. It may be expected that the funds granted and continued assistance, together with increased domestic resources, will allow the basic transport-related needs of the country to be met by 2020. The scale of available resources should create within that time a modern network of national roads, including but not limited to all of the planned motorways and expressways. Even though further investment in the transport network will still be needed, it will mostly involve high-tech expenditures.

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¹¹ H. Wyřębek, *Transport w działalności logistycznej*, in: „Systemy Logistyczne Wojsk” nr 38/2012, pp. 322–326.

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WPŁYW TRANSPORTU DROGOWEGO NA BEZPIECZEŃSTWO LUDNOŚCI W WOJEWÓDZTWIE MAZOWIECKIM

Cel artykułu stanowi nakreślenie panoramy zagadnień związanych z negatywnym wpływem zagrożeń, powodowanych przez transport drogowy, na bezpieczeństwo ludności i społeczeństwa, mieszkającej w województwie mazowieckim. Autor korzystając z zebranych danych empirycznych i ich interpretacji w świetle przyjętych założeń teoretycznych, podejmuje próbę wyjaśnienia i identyfikacji uwarunkowań (przyczyn) oraz rodzajów i kierunków zmian zagrożeń powodowanych przez transport drogowy, jak również wskazania negatywnych skutków oddziaływania na bezpieczeństwo ludności, mieszkającej w badanym obszarze kraju. Terminologia badawcza, z którą możemy się spotkać w literaturze przedmiotu, dotycząca bezpieczeństwa ludności i społeczeństwa, odnosi się do wielorakich uwarunkowań. Prowadząc badania pilotażowe stwierdzono, że poziom bezpieczeństwa ludności, mieszkającej w danym obszarze państwa, zależy od oddziaływania wielu negatywnych czynników, generowanych lub będących skutkiem prowadzonych działań, do których należą między innymi zagrożenia powodowane przez transport drogowy. Poziom bezpieczeństwa zależy między innymi od standardu utrzymania istniejącej infrastruktury. Podstawowym problemem polskiej

sieci drogowej jest brak autostrad i dróg szybkiego ruchu. Jest to zasadniczy czynnik zmniejszający dostępność komunikacyjną terytorium Polski oraz poszczególnych jej obszarów. Ze względu na rolę, jaką transport drogowy odgrywa w wymianie międzynarodowej oraz w dostawach logistycznych dla przemysłu i handlu, brak sieci dróg o dużej przepustowości staje się jednym z najistotniejszych czynników powodujących zagrożenia dla ludności korzystającej z infrastruktury drogowej.

Słowa kluczowe: Transport drogowy, bezpieczeństwo ludności, bezpieczeństwo społeczne, zagrożenia powodowane przez transport drogowy.

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