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## THE INFLUENCE OF ROAD INFRASTRUCTURE IN POLAND ON INTERNAL SECURITY

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**Abstract :** *Security of country is the result of many factors affecting this state of absence of risks and a sense that the basic values of state such as: the existence, survival and development are guaranteed. Insecurity, both in terms of external and internal causes attains anxiety and prevents the normal development of the country, which is the aim of policies of all states. One of the elements influencing the complex aspects of internal security of the state is the condition of infrastructure, particularly of road infrastructure, which is an important element in performing a number of tasks, a side the transport. In the foreseeable future a very large increase of demand on transport, is begin anticipated directly related to the expected economic growth and a significant increase in Polish foreign trade turnover. The most important predictions for demand on transport are:*

- large increase in freight transport by road, at the level of 2-3% per year;*
- very large increase in demand for road transport of Polish foreign trade (an increase of 300%);*
- increase in the number of passenger cars by 50 - 70%;*
- decrease in public transport traffic by 5 - 10%;*
- decrease in suburban bus transportation (25%), with the growth of individual automotive transportation (50% - 70%) at the same time.*

*As shown by experience of recent years, development of road infrastructure in the various regions of the country contribute to the economic and social prosperity, simultaneous ensuring sustainable basis for the internal security of the state.*

*The purpose of this article is the attempt to identify relations and dependencies between the state of road infrastructure and internal security of the state.*

**Key words:** *road infrastructure, internal security of the state, technical condition of national road network.*

### INTRODUCTION

Implementation of tasks correlated with the mission of the state, including tasks targeted at ensuring security is inextricably linked with physical and informational flows. Priority role in this area falls to transport and to related directly to transport infrastructure, which is an integral part of the technical infrastructure. Preparation, maintenance and development of technical infrastructure elements is correlated with the objectives of the state defense, which must first of all preserve the sovereignty, independence and integrity. The efficiency of the implementation of tasks in different systems of technical infrastructure is dependent on their potential and quality and mainly translates into proper execution of tasks to ensure security.

The main tasks of the technical infrastructure in the implementation of security-related tasks are:

1. Ensuring optimal conditions for growth and economic development of regions.
2. Enabling mobility of populations.
3. Limiting the number of accidents.
4. Ensuring conditions for maintenance and training, broadly defined national security subjects.
5. Preparing the database for execution by security tasks bodies during the national security threat and during armed conflict.
6. Providing conditions for the survival of the population in extreme situations.

Between the departments of the national economy forming the technical infrastructure of the state are strong relations and links. Interference in any system affect to a greater or lesser extent the state and condition of another one, which is an important factor from the viewpoint of the state defense system as a whole.

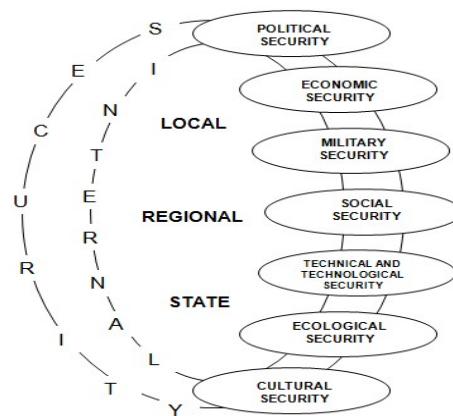
## **1. CHARACTERISTICS OF THE INTERNAL SECURITY OF THE STATE**

It is being stressed at the present time that separating of internal security is quite a difficult task, because it requires precise separation of external and internal aspects of security and rejection of stereotypical thinking which equates the internal security with the protection of citizens by direct attacks of violence [3], while it is stressed, that it is a fundamental element of national security. In general, the internal security means stability and harmony of the organism or system (collective entity) [4], it concerns the protection of vested national interests before the threats and dangers, which results from the processes, activities of organizations, people and objects, functioning within the state or on his territory [8]. Whereas, taking into account the external security, these activities will be conducted outside the country. It should be noted, that the basic criterion to separate the internal security and external is the area to which they relate. One should also highlight other criteria for sharing of safety, for example: subjective, objective or spatial.

According to the adopted in 2007 National Security Strategy of the Republic of Poland, the overarching purpose of the state in the field of internal security is to maintain the capacity to react - adequately to situation - in case of threats to public and universal safety, related to the protection at the legal order, life and health of citizens and national assets from the illegal actions and the consequences of natural disasters or technical failures [13]. The Strategy highlights two types of security, namely the public and universal. The first of these, is a desirable state of facts within the state which regardless of the damage caused by people, the forces of nature and technology, enables the functioning of all the state organizations, public or private and the preservation of life, health and property of people living in the country [5]. Whereas, the universal security is defined as the condition that ensures the protection of life and health of citizens and national assets from the effects of natural disasters, which could include, for example: floods, droughts, avalanches, fires, high winds or earthquakes and technical disasters [3], such as: communication failures and potential accidents, failure of technical equipment, construction disasters or chemical accidents.

In the nineties of the twentieth century, British scientist B. Buzan distinguished five dimensions of security, to which he included military, political, economical, social and ecological security, emphasizing that all, apart the military security, understood as an aggression from outside, refer to the sphere of threats to internal security as well. It should be stressed that recently military security also refers to the internal security associated with a wide range of tasks provided by the armed forces. Priority importance belongs to the political decisions, which can destabilize the internal situation in the country, causing decline a potential in internal security, contributing also to the worsening economic situation, growth of unemployment rate and uncontrolled growth of inflation [3].

In the internal aspect, economic security is intended to protect the economy against internal threats, associated with the property relations, production, market functioning, social crises, etc. [8]. It draws attention to the economy factors, such as: energy, transport and communications infrastructure, public finance. The social risks can for example include: the problem of excessive migration of population for profit or social pathologies. The environmental aspects can include: lack of effective system of environmental protection, environmental pollution and overexploitation of natural resources (fig. 1)



**Fig 1.** Objective and spatial dimension of internal security  
Source: personal preparation.

The overriding aim of ensuring internal security of the state is to introduce order and peace in public places, eliminating crime and other pathological social phenomena, eliminating – coming from internal factors - the attacks on public and private wealth, ensuring the normal functioning of public institutions, free from interference by any unauthorized factors and the possibility of quiet enjoyment, in the statutory framework, of civil rights. In a broader sense, this means providing so-called constitutional order, that is normal (provided for in the constitution) the functioning of all public authorities [11]. The multidimensional nature of internal security requires the involvement of a number of public services to protect these values.

Literature contains the deep analysis of factors affecting the internal security of the state, pointing out the multitude and many aspects of the said factors. Among them, undoubtedly place of accounts for the analyzed infrastructure, which in terms of quantity and quality is guarantee of stable development, both individual regions and countries as a whole.

## 2. INFLUENCE OF ROAD INFRASTRUCTURE ON INTERNAL SECURITY IN POLAND

An essential element of transportation infrastructure in our country is the road network, which has definitely the highest density of all modes of transport. Recently a series of central and decentralized (local) actions have been taken for the construction and modernization of key components of this network. As a result of undertaken work, at the end of 2010, the total length of public roads was 406.1 ths. km and the overall density of hard surface roads 87.6 km per 100 km<sup>2</sup>. It should be emphasized, that the density is varied in different provinces, the maximum is in the Silesian province (172.4%) and the minimum in the Warmia-Mazury province (52.3%) (fig. 2)

**Fig 2.** Public roads of hard surface (km/100km<sup>2</sup>) - as of 31/12/2010



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Source: [14]

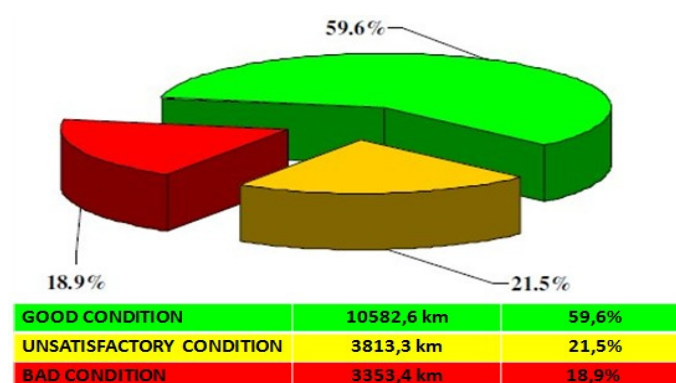
A measurable indicator of the level of road network in the country is for example presence of expressways and motorways, which are an important factor used in conditions of security threats. In our country, during the last 10 years several steps were taken to improve these proportions. At the end of 2010 the length of motorways in Poland amounted to 857 km and 674 km of expressways (tab 1.)

**Tab 1. Length of road network in Poland (2002-2010), in km**

Specification	Public road			
	Total	hard surface	motorways	improved
2002	372 300	250 291	405	220 586
2003	377 288,9	248 786	405	219 686
2004	379 455,5	252 273	552	224 441
2005	381 462,8	253 781	552	227 250
2006	382 615,4	255 543	663	229 249
2007	383 053,1	258 910	663	233 133
2008	383 313,2	261 233	765	235 901
2009	384 830,0	268 806	249	245 281
2010	406 122,1	273 759	857	249 806

Source: personal preparation based on: [14]

The execution of transport tasks is directly related to the surface condition of the existing infrastructure. According to the General Directorate for National Roads and Motorways in the end of 2009 just over 40% of the national road network needs to be improved or upgraded (fig. 3).



**Fig 3.** Assessment of technical condition of national roads - as of 31.12.2009

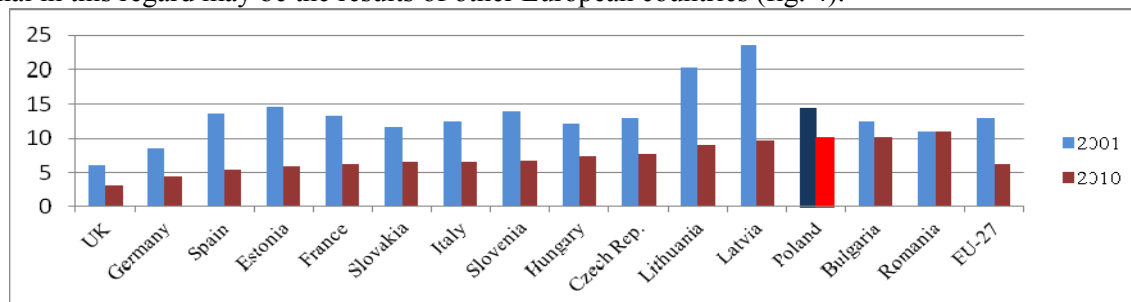
Source: [9].

The efficiency and effectiveness of the road network depends not only on the quantity, but also on the quality. Important role in this regard play motorways. Polish network of roads, compared to European countries, despite that their length in recent years in relation to previous years slightly increased, occupies one of the last position. In addition, the disadvantage is the fact that they are not a uniform connection network highway routes but consist of separate fragments being of no service nor to the economy or to the public. Leaders in this field are such countries as Germany, Spain, France and Italy and the UK. Excluding Italy, they belong also to the forefront in terms of cargo weight transported through their territory. It should be noted, that Poland belongs to them. Therefore, the lack of sufficient network of highways in our country, causes degradation of the technical condition of other public roads, which take over a significant portion of traffic, including transit. Occurring in our country's trend of development the main motorway routes and expressways makes that the current repairs and restoration work on local roads take the second place. This is primarily due to much lower financial outlay, which is 9 times smaller than for the construction of new routes. Focusing attention only on the new routes at the expense of already existing roads, will contribute only to further degradation. It should also be added, that for 1 km of motorway in these countries there are on the average about 4 cars and 0.5 of a truck, while in Poland, the numbers are respectively at 23 and 4. This means that the expansion of road infrastructure in our country does not keep up for the dynamic development of the automotive industry. Failure of the road network versus the number of vehicles and traffic volume causing traffic impediments, increase the risk of accidents, increase environmental hazards, reducing economic cohesion of the country, discouraging investment and reducing the mobility of society seen as a anti-unemployment factor [6]. In addition, the unevenly developed road network contributes to the marginalization of certain regions of the country, and consequently may reduce their investment attractiveness. This can cause negative effects in form of a migration of population from these areas, as well as the disapproval of society manifested by protests or strikes.

Therefore, it also translates into increased threat to internal security of our country, in particular in economic, social, environmental, social and military dimensions.

The fact to be criticized is that in late 2008 only 0.25% of national roads has been adapted to transfer 11.5 tonnes of pressure per axle, which is European standard. This creates a major limitation for both domestic and international carriers and thus, hinder trade.

In terms of total number of road accidents and fatalities, our country also lags behind the European countries. In 2008 on the Polish roads there have been 38 776 accidents, which killed 3 907 people. Although compared to previous years, the number of fatalities is gradually decreasing, it is one of the worst results among the countries of the European Community, at the same time one of the elements which reflect the level of internal security in Poland. In 2010 there were 102 fatalities per 100 thousand inhabitants of our country, while in 2001 it was 145 (EU average is 62) [1]. As a warning signal in this regard may be the results of other European countries (fig. 4).



**Fig. 4.** Fatal road accidents in selected countries of the European Union in 2001 and 2010 (per 100 thou. inhabitants)

Source: personal preparation based on: [17]

A certain regularity starts to appear. Analyzing the indicators of development of automobile industry and number of accidents it can be seen, that they are directly proportional and therefore the increase in the number of vehicles increases the number of road accidents. This prompts the irresistible conclusion that in countries with a dense network of highways, which means roads on the highest quality, there is a smaller number of fatal accidents. Only Lithuania has achieved worse indicators than our country in this respect. Such large disparities testify to the fact that Polish roads are among the most dangerous in the entire European Union. It is worth noting, that in 2007 the largest number of accidents per 1 km of the road took place in Małopolska (0.99), then in Silesian (0.92) and Łódź (0.82), while the smallest in the province Zachodnio-Pomorskie (0.34), Podlaskie (0.35) and Lubuskie (0.38). The discrepancy between these rates is mainly due to the fact that the volume of traffic in the first three provinces is the highest in Poland.

Taking into consideration all that has been said it proves that the Polish road network lags behind the European Union countries in terms of development. Slight length of motorways and express roads, high rate of motorization, a large number of fatalities and the unsatisfactory condition of roads show that the internal security in our country from this point of view is on a average level.

## SUMMARY

Summary of the conducted reflections, leads to the following end conclusions:

1. Country's internal security is a process dependent on many factors, among which a special place is occupied by the individual elements of the technical infrastructure of the country.
2. Priority components of the state of technical infrastructure is transport infrastructure, particularly road infrastructure, which has the highest density.
3. Technical and operating condition of the road network in our country is on the average level. Almost half of the roads require different repair procedures, and still another part is at a satisfactory level. Anxiety may be felt through the fact that this trend has persist of for a long period of time.
4. Polish road network in terms of quantity and the motorway network of expressways, although improved in recent years, still lags behind in this respect, the European Union countries (for 1 ths. km<sup>2</sup> accounts for only 2.5 km of these roads, with the EU average of 13 km).

5. Most roads in our country is unsuited to European standards. At the end of 2008 only 0.25% of national roads satisfied the requirements of pressure transfer 11.5 tonnes per axle, resulting in faster degradation of the roads.
6. In terms of road fatalities, Poland has one of the last places on the list in the entire European Union. During the eight years Poland just slightly improved the score in this area (from 145 to 102 deaths per 100 thousand inhabitants).
7. Since the state of road infrastructure depends on development of individual regions of the country and their communities, reflect directly on the ensure the internal security at the micro and macro scale.
8. High mobility of population and the optimal conditions for the survival of the population in extreme situations are primarily dependent on the qualitative and quantitative aspects of road infrastructure.
9. Proper training and functioning of the internal security bodies of the state is only possible in a natural and uninterrupted flow of information, which are conditional, inter alia, the state of infrastructure in different regions of the country.
10. Currently, taken out actions for the development of the motorway network (up to about 2000 km - in 2012) and express routes (up to about 1760 km - in 2012) have, inter alia, to reduce the number of road fatalities, which, according to a report of the World Bank from the current level of around 5500, will decrease to about 2800 in 2013.

Summing up it can be said that the modern aspects of security should play a priority role in the current and planned investments to expand and improve the road network in Poland, together with the necessary infrastructure elements.

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# ВЛИЯНИЕ НА ПЪТНАТА ИНФРАСТРУКТУРА В ПОЛША ВЪРХУ ВЪТРЕШНАТА СИГУРНОСТ

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**Ключови думи:** пътна инфраструктура, вътрешна сигурност на държавата, техническото състояние на републиканската пътна мрежа

**Резюме:** Сигурността на страната е резултат от много фактори, които влияят върху това състояние на липса на рискове и чувство, че са гарантирани основните ценности на държавата като, съществуването, оцеляването и развитието. Несигурността както по отношение на външни, така и на вътрешни причини, достига до тревожност и пречи на нормалното развитие на страната, което е цел на политиките на всички държави. Един от елементите, които влияят върху сложните аспекти на вътрешната сигурност на държавата, е състоянието на инфраструктурата и по-специално на пътната инфраструктура, която е важен елемент при изпълнение на редица задачи освен транспортните. В обозримо бъдеще се очаква много голямо увеличение в търсенето на транспорт, което е пряко свързано с очаквания икономически растеж и значителното увеличение на полския външен стокообмен. Най-важните прогнози в търсенето на транспорт са:

- голямото увеличение на товарните превози по суша от 2-3% годишно;
- много голямо увеличение в търсенето на автомобилния транспорт от полската външна търговия (увеличение от 300%);
- увеличение на броя на леките автомобили с 50 - 70%;
- намаляване на трафика на обществения транспорт трафик с 5 - 10%;
- намаляване на транспорта с междуградски автобуси (25%) при растеж в същото време на транспорта с лични автомобили (50% - 70%).

Както се вижда от опита през последните години, развитието на пътната инфраструктура в различните региони на страната допринася за икономическия и социален просперитет, като едновременно осигурява устойчива основа за вътрешната сигурност на държавата.

Целта на тази статия е опит да се установят отношенията и зависимостите между състоянието на пътната инфраструктура и вътрешната сигурност на държавата.