JOURNAL OF ENGINEERING annals OF FACULTY OF ENGINEERING HUNEDOARA
TOME VI (year 2008), FASCICULE 3, (ISSN 1584 – 2673)

STATE AND GROWTH OF THE TRANSPORT INFRASTRUCTURE IN REPUBLIC BULGARIA AT THE LAND TRANSPORT

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ABSTRACT:
Made is comparative analysis of condition on basic indexes of infrastructure by the land transport in Europe and Republic Bulgaria. Made is check of basic projects for development of transport infrastructure in R. Bulgaria for period 2007-2013.
KEY WORDS:
transport infrastructure, transport system, transport

1. INTRODUCTION

The transport infrastructure on every country like rule is developing in conformity with economic progress there, internal and international relationships. With looking of the transport infrastructure, as a whole in contemporary Europe, to turn out that in many cases is appropriate with the circumstances in every one of all countries and satisfy thoroughly its requirements.

As a whole the transport infrastructure on the land transport in the bigger on territory and developed countries like France, Germany, Spain, Great Britain and Italy is more advanced in comparison with smaller, like Bulgaria, Romania, Greece, Lithuania, Estonia, Slovenia and Ireland. This we can seen clearly by railway and automobile infrastructure, who in the developing countries are duly – highways more than 3 500 kilometers, automobile way more than 150 000 kilometers and railways more than 14 000 kilometers and respectively at more backward – highways under 600 km, automobile way under 100 000 km, railways under 4 500 km, excepting Romania, that has 10 789 km, but she is more than twice bigger in comparison with Bulgaria [8, 9, 10]. For the twenty-seven countries from EU the total length for the highways is – 59 298 km, the total automobile way 4 655 689 km and total used railways – 207 945 km.

2. VALUATION LAND-WAY TRANSPORT INFRASTRUCTURE

The infrastructure on land-way transport in Europe is valuation like comparatively good developed. At the same time is remark irregularity distribution over the territory in the separate countries.

In table 1 are shown middle statistical valuations for the state on the infrastructure by the land transport in the European countries.

Table 1. Density on the infrastructure by the countries in EU – 2006 [8,9,10]

Indicator	Density on the infrastructure		
	Highways * km/ 1000 km²	General automobile way* km/1000km²	Rail ways** km/ 1000 km²
Bulgaria	3,55	363	37,3
Middle value Scp	13,85	1 074	48,57
Max .value S_{max}	61,98 (Holland)	6 601 (Malta)	120,4 (Chech Republic)
Min .value S_{min}	0 (Latvia,Malta)	306 (Spain)	16,99 (Finland)
Range R= S_{max}- S_{min}	61,98	6 295	103,41

Note :
* The data for Cyprus, Malta, Greece, Italy, Luxemburg, Portugal, Hungary, France, and Sweden are for 2003 year.
**- aren't include Cyprus and Malta, because missing data.
Middle value Scp is received like divide the length on the all way network, in km on the all area in the countries in km² .

Regarding the distribution on the infrastructure at the land transport in the 27 countries from EU (fig. 1), by middle values for the highways – 13.85 *km*/1000 km² and for railways – 64.7 km/1000km².

Bulgaria is lagged vastly and is situated at the countries from the second half, like at the highways – 3.55 km/1000km², by the railways – 37.3 km/1000km². The first places at the highways are occupied from Holland, Belgium, Luxemburg and Germany with over 35 km/1000km². Until at the railways first are Czech Republic, Belgium, Germany, Luxemburg and Hungary with over 120 km/1000km² (fig.2) [8, 9].

In relation on the infrastructure of all automobile network distributed at the territory on the countries from EU (fig.1), thickest constructed it was found that the territory on the developed countries with little territories – Malta, Belgium, Holland, the whose asphalt covering is over 3,2 km/km², at middle for the 27-th countries 1,07 km/km². Bulgaria is far away with 2.8 times under the middle values (0.363 km/km²), [8, 9, 10].

One of the special futures, who strongly influence over the infrastructure in Bulgaria, is her relief, who in big part – 30% is mountainous [1]. The mountains are passable and low populate with people, because we can say that is useless. Strongest developed is the other part, who is lowland and hill-lowland. If we scrutinize the territory distribution on the land network (fig. 2) we can to mark, that the whole useful territory is enough uniformly build with road and railway arteries [3, 6]. But independently of this, even to turn off the mountainous part, the infrastructure like whole, stay again under the middle for the countries from EU. By the territory Bulgaria is on 11-th place between 27-th from EU [1.5] with territory of 111 000 km2 i.e. in the first half, what supposed and the infrastructure to be enough develop.

If we look at the done work in the internal transportations [8,9,10], concerning the carried loads and travelers in tkm/pkm, in attitude to unit railway or paving stone way (km), we can to mark this, for the examination countries in 2006 from EU (table 2).

Table 2

Kind	Railway transport		Automobile transport	
	loads	travelers	loads	travelers
	thous.tkm/km	*thous.pkm/km*	*thous.tkm/km*	*thous.pkm/km*
For Bulgaria	620,8	564	144,3	120,3
Middle for the 25 countries	980,8	1703	266,2	107
Biggest	(Litva) 1924	(Holland) 5013	(Germany)1082,3	(Hungary) 621
Smalest	(Greece) 60,8	(Estonia) 200	(Litva)27,1	(Finland) 24

Note : aren't include Cyprus and Malta – missing data

At the cargo carries on the railways and the trucks the done transport work in tkm, attitude to unit length on the way, is almost twice under the middle for the countries from EU, at the carries travelers on the railways, the values are almost trice under the middle. The tendency at the travelers, traveling with automobile transport is other. Here the values for Bulgaria are as the middle for EU, what show, the irregularity on the work by both of the transport appearance.

As problems, impending for decide by the land infrastructure in the country are delineated [7]:

- the antiquated and ill-kept infrastructure.
- the low admitted ability, low middle technical speed – many under 120 km/h at the railways (missing highways in the basic direction, with concurrence with the transport corridors in direction west-east and north-south) and the low permissible load on the ways (10 t by 11,5 t definite in EU) [4];
- many turnings in the ways and the railways, who don't allow high speeds ;
- missing of integration in the inside land network with international and inadequate traffic capacity on the frontier station (number of stations).
- Low way safety and security on the ways, who don't decrease the number of the accidents (8 222) and the number of the victims (10215) and the killed (1043) for 2006 year with tendency from 2002 year lightly to increase with almost ten (10) percents (%) [2].
- High noise, specially in urban zones 68-72 db, until the norms are 55-60 db with tendency to decrease and contaminating on the surroundings with released harm substances from movable compositions specially nitrogen dioxide, who is more than 50% and carbon dioxide more than 30% of all released quantities in our country.
- Scanty develop on the terminals, allowing used on combined and mixed transportations in all 6 regions on planning in the country direct to optimizing on the outlays and the time for delivering.

3. BASIC PROJECTS FOR DEVELOPING ON THE INFRASTRUCTURE IN LAND TRANSPORT BY REPUBLIC BULGARIA

Priority in the policy on EU is developing on the general-European transport system, including develops on the infrastructure in land transport. For basic purpose is defined the developing on unceasing transport system, through operation priorities: integration on the national transport systems in network on the EU and fulfillment on balance between the basic appearance transport with the help on: the development on the railway and road infrastructures along Trans-European, betterment on (интермодалността) by the passenger and cargo conveyances.

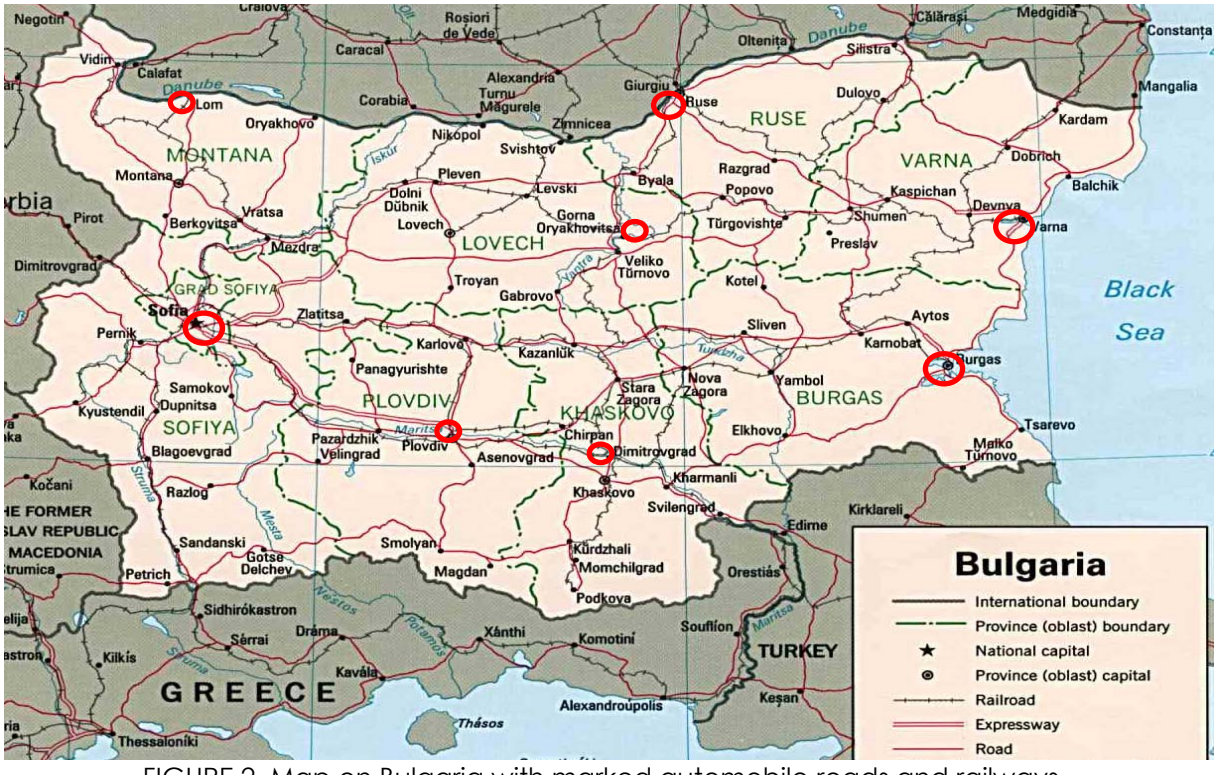

FIGURE 2. Map on Bulgaria with marked automobile roads and railways

In connection with accepting on Republic Bulgaria in European union and integrating on our transport system with the European are exert efforts for induction and confirmation on the European standards for contemporary, ecological and safety transport, undertaken are intense actions for harmonizing on the Bulgarian legislation with the European, there are made conditions for penetrating on many numbers private transport firms on the market by transport services, what to increase the quality of the proposed services on the base of built rival relationships.

The basic moment in this process is development on the transport infrastructure. The insufficiency investment in the maintenance and develop on the infrastructure in last decades, and increased searching on transport services are engender the indispensability of new, long-term approach for develop. The developing is obligatory condition for successful integrating in European transport system.

One of the serious tasks in the railway sector is introduction on the European technical standards and operative compatibility and requirements for interaction. This is joined with activities by modernizing and reconstructing on the extant, build and equipment on new railway infrastructure, as well as carry out on the corresponding preparation on the available and carry out on suitable education on the future cadres.

In the realm of the land transport basic task is according to plan homogenizing on the road network along directions on the general-European transport corridors and in the plots of TINA-network through adduce on the technical-exploitation qualities toward European technical standards for insurance of the safety and the comfort at the movement.

At this stage more develop are three centers for (интермодален) transport – Sofia, Varna and Bourgas (fig. 2). This distribution on the cargos between east and west Bulgaria load highly these three centers and turns off big cities in the rest part of the country, which have also suitable infrastructure.

Like additional center is foresee town of Rousse in the south-center region, who is border station on river Danube. Like additional stations are foresee another four – Plovdiv, Dimitrovgrad, Gorna Orqhovitza and Lom (fig. 2). This will allow receiving more uniformly distribution and load between them and the separate regions.

Table 3

Priority axes	European financing, euro	National financing, euro	Universally, euro
Priority axes 1, railway infrastructure	464 000 000	116 000 000	580 000 000
Priority axes 2, way infrastructure	791 669 892	197 917 473	989 587 365
Priority axes, intermodal travelers and cargo transport	179 429 731	31 664 070	211 093 801
Priority axes 4, water transport, navigation	133 322 500	23 527 500	156 850 000
Priority axes 5, technical work	56 057 500	9 892 500	65 950 000
All	1 624 479 623	379 001 543	2 003 481 166

The basic projects in the area of the transport infrastructure, who will be constructed from the joined funds and own finances are specify in Operative program Transport.

The foresee financial resources, given from EU and from own finances are 2 003 481 166 euro, like only for the railway and road infrastructure are separated 78% of all financing (tab.3).

The resources for develop on the transport in Bulgaria are financed from 3 (three) funds - (ERDF - European Regional Development Fund), ESF- European Social Fund and CF - Cohesion Fund. The financial resources given for the transport infrastructure is planning to be realize from the funds ERDF with 368 809 731.00 euro and CF with 1 255 669 892, 00 euro what presented accordingly 85 % and 80 % from all expenditures [7].

Investment in the transport brunch is connected with develop on these three levels.

- exterritorial– connected with EU;
- national, who support economical growing;
- regional, connected with balance developing on the regions.

After the finishing on the program Bulgaria must to dispose with 206 km, new highways, 880 repaired automobile ways and 780 km repaired railways [7].

4. CONCLUSION

Joining on Bulgaria to European Union and the process that prepare it, are accelerator on vastly economical, social, law and political changes. The new potentialities of our country engender need of active work on the Bulgarian government for develop of the transport infrastructure in the land transport.

With the fulfillment on the planning in Operative program Transport the way infrastructure on our country will dispose with 52% more new highways, 2% repaired general automobile ways, compared to all ways and 18% repaired in use railways for taking on the general part of cargo and traveler's stream.

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