

ARE THE ROAD AND AIR MODES OF TRANSPORT THE PERFECT ONES AT EUROPEAN LEVEL?

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Abstract: In this exposure, the contributors would wish to present the spectacular evolution of road transport in the European Union member countries, and its negative impact, too. The spectacular number's rising of private owned cars in Europe pose real problems to traffic, which cause congestion, pollution, and as a result great environmental problems. Airway transport is analyzed, too, from the perspective of congestion on the airports and the pollution which results from this. Another face of the coin is the high dependence on fossil fuels, which can hinder the future development of European countries. There is presented the solution: the future development of high speed trains, which would take a lot of people from the roads and from the skies, and as a result, would contribute to the congestion's reducing, to the rise of the efficiency of transportation systems on European continent, and to the environment quality's improvement.

Code words: congestion, high speed trains, pollution, railway transportation

During history, any invention which was applied in transportation (and communication) areas have brought with it profound changes of political, social, and economical character.²² Today transportations have the same characteristics and exert the same influence: technical inventions, which were applied in transportations' and communications' fields are the grounds which have facilitated the global economy's development and international finance's emergence, giving birth to a market which is never asleep.²³ At regional level there has been manifesting a parallel phenomenon – regionalization. How could we speak about a unique market, or about free movement of people, goods, services or labor force in European Union, without bringing into debate the transportations and communications?

But anyone who traveled on European roads or got close to a big European airport could see the congestion on the roads, and the agglomeration in the air, where there could be seen airplanes which, sometimes had to over-fly the airport area, until there would be free a landing runway, providing their safety landing. The agglomeration on the roads (especially close to big European cities, and inside them) becomes a very pressing problem nowadays.

We must remember anytime that the car is the great symbol of diversion, and of reality and truth emptiness, which are associated with it.²⁴ The automobile succeeded very well in bringing together the science and the desire. The traditional society's destruction invokes the creation of a space and of a time which are structured by, and for the vehicle. "The automobile is the perfect symbol of technical society. It combines the utility with futility, the escape with fatality, permitting you to be in the other place and finally meeting death."²⁵

The automobile's acceptance is beyond any criticism; if some people are skeptical in using a TV set, a mobile phone or a computer, none would oppose to car... Until 1990 there wasn't unleash any strike against the automobile (generally speaking) or for the development of public transport.²⁶ Fewer cars are impossible to be imagined – in the last 60 years the towns were planned and modeled so that there people couldn't leave without cars. A decision which would have the effect of reducing the cars' using could give birth to strong movements of opposition, because it could be regarded as an attack against the individual freedom. In this point it could be

²² Harold A. Innis, *The Bias of Communication*, Toronto, University of Toronto Press, 1999, p. 3

²³ Michael Stewart, *The Age of Interdependence*, Cambridge, MA, MIT Press, 1984, p. 26

²⁴ Jacques Ellul, *The Technological Bluff*, Grand Rapids, Michigan, William B. Eerdmans Publishing Company, 1990, p. 371, citat din B. Charbonneau, *L'homme auto* (Denoel, 1967)

²⁵ *ibidem*, p. 372

²⁶ *ibidem*, p. 372

mentioned that the cars' owners and motorcycles represent the *most important lobby and pressure groups* in the Western countries.²⁷

It seems that the *state* is helpless in trying to limit their actions; in road infrastructure's building, they pressed the state to promote (decisively, and it seems irreversibly) the development of transport with private car, to the public transport's disadvantage. For example, in the 80's, French state subsidized three quarters of research expenses in the case of Peugeot and Renault companies.²⁸

Of course, the pressure from the car owners was well regarded and accepted by the automobile's producers. In some measure, the state has had special interests *vis-à-vis* road transport development: the road's and highway's construction means the employment of labor force and the intensifying of economical activities in colligated economical sectors, it favors the investments' rising and provides an income source for the national budget – the taxes imposed upon the fuel used in transportations. In the same time, the Western countries were interested in the development of road transportation with private cars, because they had been trying to build a democratic society, upon which the state could rely on. So, the freedom of movement, due to a private owned car, became the cornerstone for the creation of labor force's *mobility*, and for the relative liberty regarding the finding (or changing) a job, which is itself assimilated to it. The freedom of movement and the freedom of choice regarding the profession, and the existence of the possibility of the working place's changing (due to the car), became in this way, important sources of a democratic society.

The automobile has become a symbol for the middle class: now we could move faster anywhere we want. But the roads cover a greater surface of arable land. And we are *together*, in the same time, on the same roads, even if each of us is in his private car; the automobile permits us to return to our lost Paradise... The day when we buy an automobile is the same day in which we start to perceive that we no longer have any limit... But on the roads, there is a great jumble. Our automobile's speed slows down to 5km/h, even if it is much greater in our minds... And in this way, the vehicle which has the aim to facilitate our removal from the crowd, puts us back in it...

The acceptance of this car can't be explained but „through men's proclivity for game and entertainment, through psychological instability and through men's behavior which can be easy manipulated.”²⁹ And this when it is a known fact that the automobile *consumes* a huge amount of resources, it is *inefficient* (with a private car, there use to travel only one or two persons), it needs the *covering* of preciously agricultural land areas (the highway network at European level having been rising yearly with 12000 km in the period comprised between 1970 and 2000³⁰), it *kills* (for example in 1998, as a result of road accidents in Europe, there died 43500 people³¹) and it *pollutes* (84% of CO₂ emissions resulted from transportation at European level, is due to road transport). The *congestion* and its immediate effect – pollution – have very negative consequences for the environment; and as a direct consequence of this, for people's health. “The bad quality of the environment is responsible for 25% of the diseases which could be otherwise prevented, especially acute respiratory affections. Some 5% of the deaths are due to air pollution.”³²

In USA, there live some 4.6% of the world population, and in this country it is consumed 25% of the oil which is consumed at global level;³³ it could easy be observed that there are emitted 25% of the CO₂ emitted at global level. But what it is noteworthy to be mentioned is the fact that 68% of the fuel consumption in the USA is due to *transportation*, 96% of the fuel demand for transportation being satisfied by oil.³⁴ Another source hints that on the American roads, there is consumed every day almost half of the oil quantity which is supplied daily on the global oil market.³⁵

²⁷ *ibidem*, p. 372

²⁸ *ibidem*, p. 373

²⁹ Mircea Malița, *Zece mii de culturi, o singură civilizație. Spre geomodernitatea secolului XXI*, București, Editura Nemira, 1998, p. 211

³⁰ *White Paper (2001)*, p. 32

³¹ Ciprian – Beniamin Benea, *Regimuri și negocieri în comunicațiile internaționale*, București, Editura Academiei Române, 2007, p. 165

³² Prince El Hassan bin Talal, *Communiqué at Third Environment Forum Global Foresight Lecture*, Magdeburg, Germany, 17th November 2003

³³ John Deutsch, James R. Schlesinger and David G. Victor, *National Security Consequences of U.S. Oil Dependency*, Raport Nr. 58, October 2006, Council on Foreign Relations, p. 4

³⁴ *ibidem*, p. 13

³⁵ Keith Suter, “Is the World Running Out of Oil?” in *Austrian Environment Review*, Februarie 2006

If we look back to European continent, we could observe that in 2001 there could be identified an *inequality* in the development of different modes of transport. Of course, this reflects the high adaptability of some modes of transport to the market economy's needs, and the fact that some external costs haven't been internalized in the total cost of transportation, too, and the fact that some regulations in the social and safety fields haven't been fulfilled – especially in road transport sector.

As a result, in 2001, in EU, road transport provided the transport of 44% of the quantity of goods carried on in Europe, while maritime transport on short distances provided 41%, the inland waterways provided only 4%, and railway transport 8.4%.³⁶ A quick look to the USA transportation system, and we could see that there are carried on the railways over 40% of the goods transported in that country.³⁷

The domination exerted by road transportation in Europe, to the detriment of the rail transport, is much more visible in the case of transport of people: in 2001, 79% of Europeans voyaged on roads, while air transport counted with 5%, and the rail transport with only 6%.³⁸ This gives over costs: the projections for 2010 indicated the fact that, if there nothing is done, the road congestion would rise significantly, and the cost due to this rising would increase with 142%, reaching the amount of € 80 mld. – 1% of Community National Gross Product.³⁹

Linked to the road transportation's development are the *risk* of transport, and *pollution*. As we can observe from Green Paper of European Commission of November 2000, regarding European energetic security, in 1998, the energy consumption in transportations gave 28% of CO₂ emissions, the main gas which gives birth to greenhouse effect, with fundamental implications *vis-à-vis* climate change. If there aren't taken concrete measures regarding the slowing down of the pollution due to transportations, in 2010 the CO₂ emissions resulted from this human activity will be higher with 50%, in comparison with the level registered in 1990. The quantity of CO₂ emissions will be 1113 mld. tones, in comparison with 739 mld. tones of CO₂, in 1990.⁴⁰

Once again, road transportation is the most negative factor – 84% of CO₂ emissions due to transport, results from road transport,⁴¹ urban transport contributing with 40% of CO₂ emissions which are responsible for climate changing.⁴² Studies made for the identification of the factors which contribute to climate change blame in great measure on *the fossil fuels*. Over half of the fuel consumption made in transportation sector is due to private owned cars! And road transport totally depends on oil, 67% of fuel demand being determined by road transport.⁴³

It is noteworthy to be mentioned that in Europe, in year 2000, in comparison with 1970, the number of private owned cars was three times higher, from 62500000 millions to 175000000 millions.⁴⁴ Every day 10 hectares of land are covered by new roads, with concentration in the areas situated at distance from the geographical center of European continent, where the highways density rose with 43% in ten years (1988 – 1998),⁴⁵ the length of highway tripled in Europe between the year 1970 and 2000.⁴⁶

In the same period (between 1970 and 2000) the amount of goods carried on railways dropped from 21.1% to 8.4% (from 283 tones-kilometer to 241 tones-kilometer, respectively).⁴⁷

Regarding airway transportation, the passenger-kilometer indicator has been registering in Europe a yearly rising of 7.4% since 1980.⁴⁸ Every day over 25000 airplanes fly over European continent, and this number tends to double in 10 to 14 years.⁴⁹ Although the sky seems immense, this *high traffic density* gives birth to significant problems: the rising number of delays is a clear sign of saturation. Beginning with the year 2000, there have been registered significant delays at arrivals on the destination airports: a medium of one in six flights delayed 22 minutes.⁵⁰

³⁶ *White Paper, (2001), p. 7*

³⁷ *ibidem, p. 10*

³⁸ *ibidem, p. 7*

³⁹ *ibidem, p. 8*

⁴⁰ *ibidem, p. 10*

⁴¹ *ibidem, p. 10*

⁴² *ibidem, p. 10*

⁴³ *ibidem, p. 22*

⁴⁴ *ibidem, p. 22*

⁴⁵ *ibidem, p. 22*

⁴⁶ *ibidem, p. 22*

⁴⁷ *ibidem, p. 25*

⁴⁸ *ibidem, p. 35*

⁴⁹ *ibidem, p. 35*

⁵⁰ *ibidem, p. 35 (n. 18)*

As a result, the pollution due to airway transport rises, too. And it is not an aspect with little significance when during a fly between Amsterdam and New York, an airplane emits one tone of CO₂ for each transported passenger.⁵¹ The airplane's keeping on flying over one crowded airport due to saturation, rises the degree of phonic and chemical pollution.

Regarding the transport of passengers, the railways sustained the rising of the number of passengers transported from 217 mld. passengers-kilometer (1970) to 290 mld. passengers-kilometer (1998).⁵² But the quota of railway transport on the transport market dropped from 10% to 6%, due to the rising of road and airway transport quotas. Airway transport is like road transport regarding passengers-kilometer indicator.⁵³

It is noteworthy to be mentioned that at the level of the 15 member states of EEC, the European Environment Agency identified only 3 millions peoples disturbed by the noise generated by railway transport, while the same study indicated that 24 millions people were disturbed by road transport and 40 millions by airway transport.⁵⁴ But between 1995 and 2004 road transport in Europe rose 17% (transport for people) and 35% (transport of goods).⁵⁵ That for, there could be identified in White Paper (2006) mentions regarding actions to be taken in transportation field and which are focalized upon:⁵⁶ energy using; infrastructure; innovation; new transport technologies (for example high speed trains).

And if in the US trains which carry goods don't share the same rail infrastructure with passenger trains, why this example couldn't be taken at European level, where nowadays trains loaded with goods share the same infrastructure with train passengers?

Taking account of these things, the reduction of dependency on oil from the level of 98% (2001) through focalization upon alternative sources of fuel and through the energy efficiency's rising for all modes of transport – especially in railway transportation field – is both, an ecological necessity, and a technological provocation, too. There appears the necessity to broke the existent connection between the transportation's development and economic development; but this thing cannot be achieved over night, when rail transport has constantly recorded a deterioration during last 60 years, and as such, nowadays in Western Europe this type of transport is collated with a real marginalization, hitting only the level of 8% (goods transport) and 6% (passengers transport). There is a known fact, and in the same time a worry factor: the medium commercial speed for trains which carries on goods in Europe is only 18km/h,⁵⁷ speed which is lower than that one developed by an icebreaker which opens a navigational route through the waters of a frozen sea. And this when it is known that a modern economy as that one of the United States provide 40% of transport of goods using the system of railway networks.

Although in ex-candidate European countries railway transport enjoyed a better position on transportation market – centralized planning being heavy based upon railway transport – the distribution among different modes of transport swayed more and more to road transport, starting with 1990. Between 1990 and 1998 road transport of goods rose by 19.4%, while railway transport declined with 43.5% – but being superior to that one registered in EU-15.⁵⁸

A last presentation of some numbers and we could easy note that the taking of some energetic (even radical) actions is a necessary factor: if congestion affects urban areas especially, European road networks are hit more and more by chronic congestion. Some 7500 kilometers (10%) of European road network (EU-15) is affected by traffic bottlenecks; and 16000 kilometers (20%) of railway network is overloaded; the most important 16 airports in Europe registered over 15 minutes delays for 30% of the flights. Together, these delays determine an yearly extra input of 1,9 mld. liters of fuel – 6% of the fuel consumed yearly in Europe.⁵⁹

The pollution which is due to road and air transportation determines temperature's changes, directly contributing to climate changing; the climate change are the last conflict "generators" which were identified last decades, being preceded by problems as drought, desertification, soil's shading, the fresh water resources' reduction, deforestation, fish stockpiles' reduction, and the ozone layer's thinning. When the scientific community started (during '70s) to discover alarming proves regarding human activity, considering it to be the main element which

⁵¹ *ibidem*, p. 39 (n. 27)

⁵² *ibidem*, p. 33

⁵³ *ibidem*, p. 33

⁵⁴ *ibidem*, p. 33

⁵⁵ *White Paper*, (2006), p. 23

⁵⁶ *ibidem*, p. 45

⁵⁷ *White Paper*, (2001), p. 10

⁵⁸ *ibidem*, p. 9

⁵⁹ *ibidem*, p. 7

determines climate change, the emerging problem of global warming was regarded by political leaders – when it wasn't totally ignored – as a subject which deserved only marginal attention, which should be administrated by environment ministries.⁶⁰ Starting with '90s, the climatic modeling has become more and more sophisticated, political leaders starting to accept that they should look for and identify *the solutions* for reduction of emissions which gave birth to greenhouse effect. Because these measures impose dramatic changes regarding fuels consumption, climate changing has quickly become a problem with economic and energetic connotations. Much more, in the last years the language utilized for climate change's descriptions received a more stringent tone, this problem being regarded as a *menace* for international peace and security.⁶¹ Climate changes threaten both hydrological and alimentation security, the resources' allocation, and the people which leave along the seashores, elements which can easy generate compulsory and uncontrollable mass migrations, which inevitably would generate tensions and desperate conflicts.

Even these scenarios become more and more plausible (we can already see the conflict in Darfur – Sudan), a common ground and a solution for this problem, which receives a chronic character, is very difficult to be found: the negotiations' collapse in The Hague, regarding climate change (December 2000) can be a good proof in this direction.⁶²

We could observe that the *reorientation* of transport from roads and air to railways is a necessity; as world population's number continues to rise, and as the proportion of people who own and drive a private car continues to rise in the rising number of world's population, driving a car will transform itself from enjoy (or relaxation) in a harassment, and even in a punishment.⁶³

The importance of the advantage which railway has in comparison with the automobile-*hare* and with the airplane-*falcon* resides in the fact that it can bring huge advantage to humankind in the future, when world population will rise and when pollution will become an extremely grave problem at global level. "*The train is ideal solution in the transportation technology field, in order to cope with population's burst in demographical area.*"⁶⁴

The train is the logical instrument for whole and perfect using of technology which achieved the performance of harnessing the huge physical forces for the haulage's benefits. Railways' revitalizing and – taking account of new technologies, which facilitate the construction of TGV rails – the initiation of projects which will have as final point the fulfilling of some new TGV lines should be the "wave of the future". The great speed and the possibility to stop in places which are close to urban centers will make TGV a preferred mean of transport even by those who regard airplane as unique mean of transport which can provide a quick and direct link between two urban centers.

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⁶⁰ Oli Brown, Anne Hammill and Robert McLeman, "Climate Change as a 'New' Security Threat: Implications for Africa", in *International Affairs*, 83: 6 (2007) p. 1141

⁶¹ *ibidem*, p. 1141

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⁶³ Arnold J. Toynbee, *Orașele în mișcare*, București, Editura Politic  , 1979, p. 310

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