

UDK 656

CODEN POMEEZ

ISSN 1332-070X

PROMET

TRAFFIC - TRAFFICO

SCIENTIFIC TECHNICAL JOURNAL FOR TRAFFIC THEORY AND PRACTICE

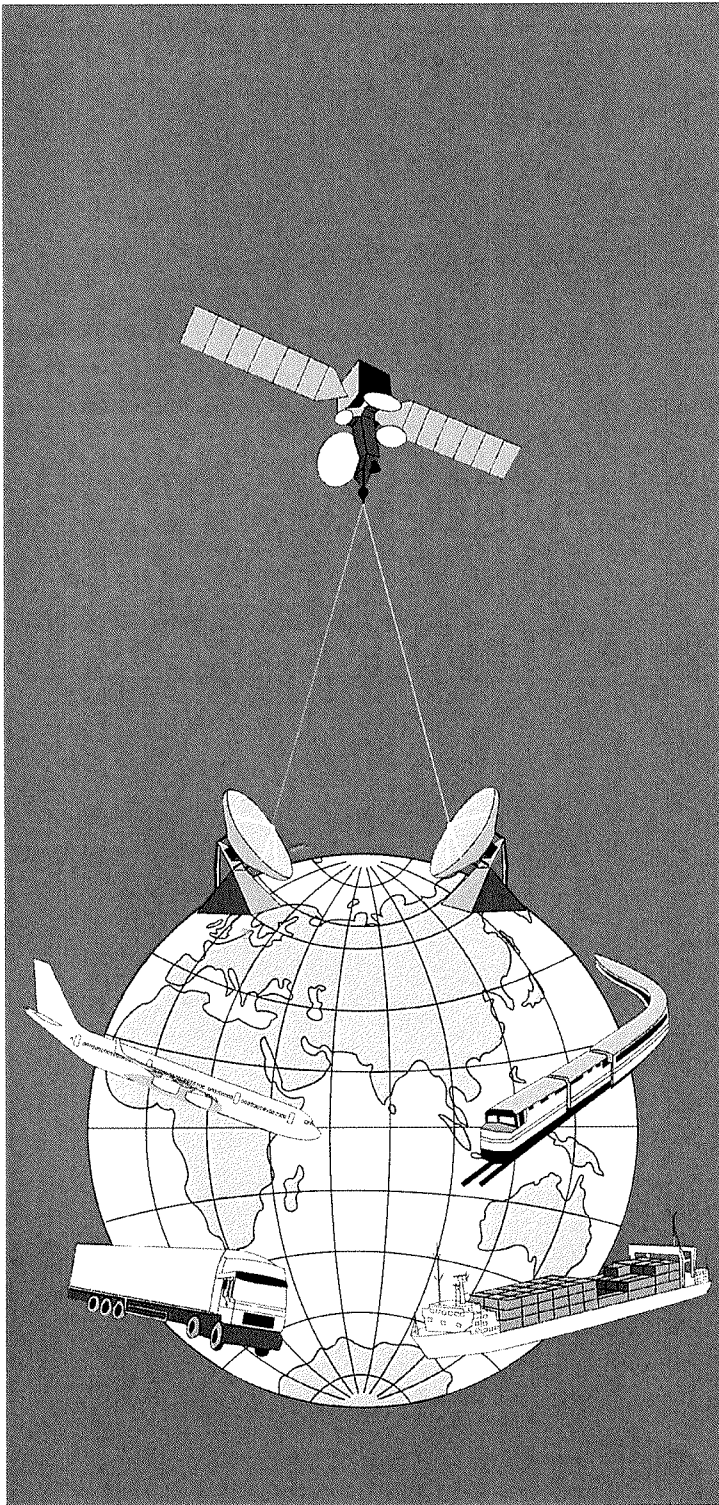
Proceedings

International Scientific
and Professional Conference

CENTRAL EUROPEAN TRAFFIC SYSTEMS AND THE EU ENLARGEMENT

Zagreb, March 26, 2003
Croatia

Supplement No.1



PROMET

TRAFFIC - TRAFFICO

Scientific Technical Journal for Traffic Theory and Practice

Published by

Sveučilište u Zagrebu

Fakultet prometnih znanosti, Zagreb

Co-publishers

Univerza v Ljubljani, Fakulteta za pomorstvo in promet, Portorož

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Subscriptions

10000 Zagreb, Siget 18c, tel. & fax: 6526-229

Republika Hrvatska - Republic of Croatia

Editor's Office

10000 Zagreb, Vukelićeva 4, tel.: 2380-262

Republika Hrvatska - Republic of Croatia

e-mail: promet@fpz.hr

URL

<http://www.fpz.hr/journals/traffic/index.html>

Secondary Publications and Databases Referred to in the Journal

TRIS (Transportation Research Documentation)

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Printed in 400 copies

Proceedings of the International Scientific and Professional Conference

CENTRAL EUROPEAN TRAFFIC SYSTEMS AND THE EU ENLARGEMENT

Zagreb, March 26, 2003

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PROMET

TRAFFIC – TRAFFICO

Vol. 15, Supp. No. 1, pages 1-251, Portorož - Trieste - Zagreb 2003

Publisher
SVEUČILIŠTE U ZAGREBU
FAKULTET PROMETNIH ZNANOSTI
ZAGREB
Co-publisher
Univerza v Ljubljani,
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GORDANA NIKOLIĆ, M.Sc.
Ekonomski fakultet
I. Filipovića 4, 51000 Rijeka, Republika Hrvatska

Science in Traffic
Review
U.D.C.: 65.012.34:656(497.5)
Accepted: Jun. 23, 2003
Approved: Dec. 15, 2003

SPECIFIC SIGNIFICANCE OF TRAFFIC DEVELOPMENT IN THE REPUBLIC CROATIA

ABSTRACT

As in the economic development of each country, traffic has an important determinant also in the Republic Croatia, especially the development of traffic branches. The traffic system of each country is composed of several traffic branches. In Croatia these include maritime, railway, road, air, post, communication, inland and pipeline transport and traffic. Wire and auto taxi transport and traffic are still insufficiently exploited. The development of traffic system depends on many factors, such as: condition and investment in traffic infrastructure, modernization of traffic suprastructure, use of modern transport technology, introduction of higher level for informatization in business and elsewhere. However, the break of transport and traffic development can be found in the traffic infrastructure and traffic suprastructure which are out of order as a consequence of long-standing neglect and disinvestments. Modernization of traffic infrastructure and suprastructure is necessary to catch up with the competitive advantages on the national and international levels. Also, it is necessary for the integration into the European transport and economic market. This paper analyses the condition and the possibilities of development of traffic and transport in Croatia.

KEY WORDS

traffic, traffic infrastructure, traffic suprastructure, maritime, railway, road, air, post, and communication transport

1. INTRODUCTION

Modern technical, technological and scientific achievements are changing the ways and conditions in which the work is done. This change is happening in all spheres of living, as well as the respective state traffic plans. By implementing modern transport technologies, modern transport capacities, which enable producing swift and high-quality time and place transformations of goods, people, finances, capital and services and by doing so competitive advantages are created. Those advantages are evident in lower

business costs, lower costs of cargo and passenger transportation, and with those lower costs more profitable business is, which all influences competitively, deliveries are made at exact time and to the place as planned.

However, to achieve all that has been stated above, it is necessary to develop the traffic system by investing in it, modernizing it with new technical, technological and informational achievements and creating adequate growth strategy by which more investments would be made concerning the development of the transport system.

With all that in mind, research object is to investigate the underlying general traffic and traffic branches characteristics, to analyse the condition of traffic branches in the Republic of Croatia, and to point out the possible future development.

All this is necessary to prove the work hypothesis: the scientifically based cognition about the traffic, analysis and by grading the condition of current traffic development it is possible to determine the guidelines which would be necessary to take so that the Croatian traffic system would be included into the modern European and world flows.

Following the Introduction, the paper contains the following topics: basic traffic and traffic branches characteristics, then in the third section Current development and condition of traffic branches in the Republic of Croatia is analysed. Based on those cognitions, in the fourth section guidelines, which show Direction for development of Croatian traffic are given. The paper ends with certain conclusions.

2. BASIC FACTS ABOUT TRAFFIC AND TRAFFIC BRANCHES

In order to analyse the transport system of the Republic of Croatia, it is necessary to elaborate: 1) relevant transport and traffic characteristics and 2) el-

ements producing traffic services within the branches of traffic.

2.1. Important facts about transport and traffic

Since the emerging of first means of transportation, up to the current modern transport technologies and modern transportation vehicles used, transport has made a substantial, one could say, even revolutionary progress. The term transport is often mistaken for the term traffic. However, there should be a difference made while using those terms since traffic is a wider term than transport. Thus, with respect to other authors and their perception of the terms transport and traffic, it is necessary to define those as such:¹

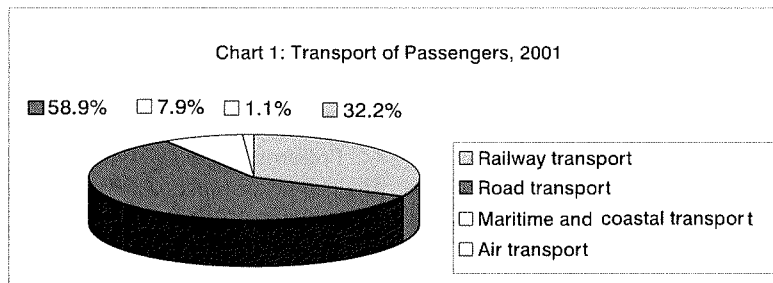
Transport is a specialized activity that by using traffic infrastructure and traffic suprastructure enables production of transport and traffic services. Transporting goods (cargo, things, matters, material goods), people, energy from one place to another, transport overcomes space and time distances in an organized manner (...).

In Croatian language system, **traffic**, as a wider term than transport, can be found describing three situations: first, traffic at its widest term means the relationship between people which would involve terms such as social traffic, traffic between people (...); second, traffic in a narrower sense would mean economic or economic-finance category so there would be traffic of goods, financial assets, foreign currency, and traffic concerning transport would include transport but also the operations concerning transport of goods and people as well as communications.

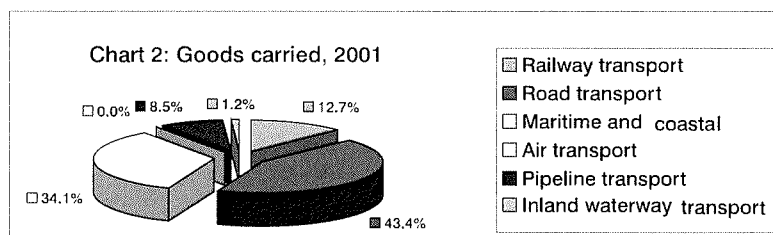
The development of producing powers, production and social relationships, scientific influence, techniques and technologies have enabled the progress of the mankind concerning all aspects of life, which would mean traffic as well. From the historical forms of road traffic, first rafts for crossing the rivers, first steam ships, first railroad, first balloon flights... today there are more traffic branches. Today, these traffic branches could be classified according to several criteria:²

- According to purpose - public transport and traffic, private transport and traffic and internal transport and traffic;
- According to the territory of operation - national transport and traffic and international transport and traffic;
- According to the object of transportation - freight, passenger and specific transport and traffic;
- According to the organization - established routes, free and (automobile) taxi transport and traffic;
- According to media used - water, land, air, telecommunication and space transport and traffic;
- According to specific transport characteristics - maritime, cable railway, road, air and postal transport and traffic, telecommunication traffic, river, lake, canal, pipeline, cable railway, urban, space, taxi transport and traffic and hover board transport and traffic.

From all the above-stated the traffic branches in the Republic of Croatia concerning transport and traffic of goods and passengers are: maritime, railway, road, pipeline and river traffic (cf. Charts 1 and 2).



Source: Statistički ljetopis Republike Hrvatske, Državni zavod za statistiku, Zagreb, 2002, p. 313.



Source: Statistički ljetopis Republike Hrvatske, Državni zavod za statistiku, Zagreb, 2002, p. 313.

As the chart shows, the data clearly prove that prime concerning passenger transportation is in road and railways, which is understandable since in those branches transportation costs are lower than in air transport. Next is maritime traffic that is still underdeveloped concerning the passenger needs. This is best evident in summertime when the demand is higher than the supply. Least traffic is done by air. This fact is the consequence of the fact that air traffic is more expensive means of transportation, but also because there are no specified air routes between cities and no adequate transport to and from those remote airports to connect distant cities and districts.

The greatest part of goods transport is by road transport and traffic (which includes public transport and private transport) followed by maritime transport, which is understandable concerning the prices - freight charges. Railway and pipeline transport and traffic follow, and the least used is river traffic (inland waterways traffic) with 1.2% and air traffic with 0.1%.

However, postal and telecommunication traffic are not to be forgotten which are an unavoidable traffic and economic link between traffic, economic and such subjects of every state. They are, however, oriented towards services that are visible to the eye (sending packages, letters, telephone calls services...).

2.2. Elements producing traffic services within branches of traffic

The basic mission of transport and traffic, that is transport of passengers and goods could not be accomplished if there weren't four necessary elements producing traffic services:³ traffic infrastructure, traffic suprastructure, objects of work, work itself as intellectual capital.

- 1) **Traffic infrastructure** contains traffic paths, objects and instruments permanently fixed to a specific place which all serve to producing traffic service, as well as for regulating the traffic safety. Infrastructure of every traffic branch has its own specific technical, technological and exploitive characteristics.
 - Maritime traffic infrastructure contains: light-houses, coast and port lights, signal markings, port elevators, radio-headlights and radio-reflectors, buildings, approach canals, operative coasts, closed docks, breakwaters, energy, water and sewer network, part of the infrastructure from the railway, road, pipeline, postal and telecommunication traffic located at the harbour territory, harbour warehouses, harbour terminals, custom zones (...).
 - Road traffic infrastructure contains: roads, paths, bridges, viaducts, tunnels, signalisation

and devices used for regulation and safety of the road traffic, lorry and bus stations, buildings with fixed devices used for maintaining and servicing suprastructure and infrastructure concerning road traffic (...).

- Railway traffic infrastructure contains: gage devices, railroad tracks, bridges, tunnels, signal devices, telecommunication relationships with guides and communication devices, buildings and other objects serving for keeping the signal-sign equipment and telecommunication techniques as well as the warehouses, terminals, stations, buildings, platforms and other objects which serve for taking and transportation of the passengers and goods as well as the approach roads and ramps that help cargo manipulation.
 - Air traffic infrastructure contains: airports, runways, taxiways, light and radio signalisation, energy airport system, water and sewer network and such, buildings, cargo warehouses, garages, parking lots, navigation devices, telecommunication devices, air control buildings (...).
 - Postal traffic infrastructure contains: business and operation postal buildings, network of postal devices, stamp vending machines, fixed elements of the postal system (...).
 - Telecommunications traffic infrastructure contains: business and operation telecommunication buildings, telephone switches, antennas with its devices, stationary telecommunication networks, stationary radio and television network, stationary radio and television stations, stationary terminal equipment, earth satellite stations, telecommunication satellites (...).
 - Inland waterway traffic infrastructure contains: navigable paths, harbours, coast lights, buoys, piers, quays, energy, water and sewer network, railroad devices and approach roads that are in direct function with river shipping, buildings that serve for sailing regulation and for safe sailing, maintenance workshops, pier warehouses, pier terminals (...).
 - Pipeline traffic infrastructure contains: subways, surface and sub-water pipelines, collecting pipelines, pumps and other stations, operation and business buildings, plants, devices and installations (...).
- 2) **Traffic suprastructure** consists of reloading means and means of transportation that by using the traffic infrastructure enable production of traffic services and regulation as well as traffic safety. This means that traffic suprastructure is made of mobile means of work that serve for manipulating, transport and transfer of objects of work in traffic, such as cargo, passengers, energy, news, sounds, pictures, signals (...). Infrastructure of every traf-

fic branch has its own specific technical, technological and exploiting characteristics.

- Maritime traffic suprastructure consists of: ships of all kinds, tugboats, sailing cranes, forklifts, means for horizontal, vertical and lateral freight manipulation (...).
 - Road traffic suprastructure consists of: lorries and all kinds of freight road vehicles, buses and other road passenger transportation vehicles, all sorts of mobile reload means which serve for cargo manipulating in road traffic, devices that serve for maintenance and servicing traffic infrastructure and transport and reloading means in road traffic.
 - Railway traffic suprastructure consists of: all sorts of locomotives, all sorts of freight and travel wagons, all sorts of mobile means and devices for loading, reloading and unloading of cargo in railway transport, mobile devices that serve for maintaining and servicing (...).
 - Air traffic suprastructure consists of: all sorts of airplanes and other aircraft, mobile signalisation, mobile maintenance workshops, fuel-carrying vehicles for fuel supply to aircraft, water-carrying vehicles for aircraft water supply, fire fighting vehicles (...).
 - Postal traffic suprastructure consists of: mobile transport and reloading means, devices, machines, computing and other means that by postal infrastructure serve for producing postal services (...).
 - Telecommunications traffic suprastructure consists of: all sorts of mobile phones, radio-devices, television-devices, mobile radio and television stations (...).
 - Inland waterway traffic suprastructure consists of: river boats, floating vessels, rowboats, tugboats, barges, tankers, yachts, sailing cranes, mobile cranes, forklifts, transporters (...).
 - Pipeline traffic suprastructure consists of: mobile devices and equipment that serve for producing traffic services by pipelines, for regulating and safety of pipeline transport in reference to pipeline traffic (...).
- 3) **Objects of work.** They can be all sorts of things such as: items, materials, cargo, goods, passengers, live animals, palettes, containers, barges, energy, news (...). Objects of work are all objects that can be transported, moved, relocated from one place to another by using traffic infrastructure and traffic suprastructure of all traffic branches: maritime, river, road, railway, air, postal, telecommunication and pipeline transport and traffic.
- 4) **Work - intellectual capital.** Today, great attention and meaning is assigned to intellectual capital

and meaning, which is completely understandable. Work in reference to intellectual capital is the single most important element in producing traffic services. Only high-quality work influences safety, speed and rational manipulation and passenger and freight transportation. Intellectual capital enables achieving efficient and effective business standards. Without knowledge, such as interdisciplinary and multidisciplinary knowledge, capability, innovations, creativity and practical experience there would be no efficient implementation of traffic, either in infrastructure or in suprastructure. Therefore, intellectual capital, especially traffic intellectual capital ought to be given better attention and also it should constantly be subject to improvements. Traffic intellectual capital⁴ is defined as an employed assembly of mega, macro and micro traffic system with its uni-disciplinary, interdisciplinary, plural-disciplinary, supra-disciplinary and multi-disciplinary knowledge, capabilities, creativity, inventions, skills, experience, motivation (...), of transport technologies, information networks, traffic system culture, information intended for current and potential users of the transport and traffic services and of relationship quality on mega, macro and micro transport and traffic markets.

3. CURRENT DEVELOPMENT AND CONDITION OF TRAFFIC BRANCHES IN THE REPUBLIC OF CROATIA

To consider the possibilities of traffic development in the Republic of Croatia it is necessary to analyse the underlying traffic development. Therefore, further in the text only the relevant information and data are given about the most developed traffic branches in the Republic of Croatia concerning: 1) maritime traffic, 2) railway traffic, 3) road traffic, 4) air traffic, 5) postal traffic, 6) telecommunications traffic, 7) pipeline traffic, 8) river traffic and 9) urban traffic.

3.1. Maritime traffic

Maritime traffic has an important role for the economic development in the Republic of Croatia because of its geographic position that enables it to connect northern continental states with maritime states and with the rest of the world. Owing to maritime traffic, the Republic of Croatia can achieve considerable business results as a transit state. By analysing five-year passenger and goods traffic (charts 3 and 4) some tendencies can be observed:

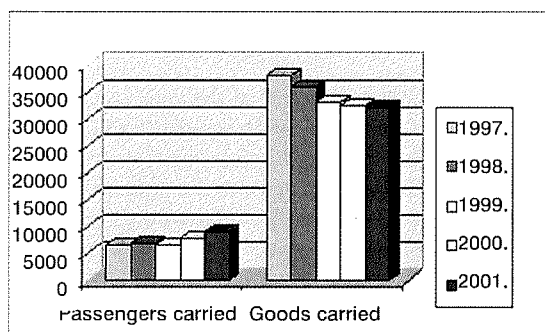


Chart 3 - Transport of passengers and goods, 1997-2001 (000 t)

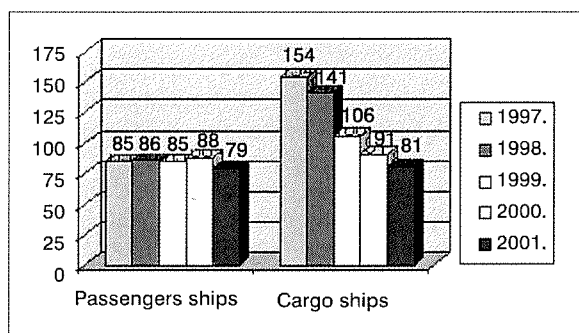


Chart 4 - State of ships, 1997-2001

Source: Statistički ljetopis Republike Hrvatske, Državni zavod za statistiku, Zagreb, 2002, p. 318

There is a growing passenger number, and at the same time the volume of goods has a tendency of decreasing. At the same time, Chart 4 shows that there have been insufficient investments made into suprastructure of maritime traffic, concerning the purchase of new ships. This is of particular importance if considering the fact that the number of passengers is growing and there are fewer capacities available. Passengers and cargo ships are becoming obsolete.⁵

3.2. Railway traffic

There is a similar situation in the development of railway traffic as in maritime traffic. The number of passengers transported is growing and the commodity transported is decreasing. Concerning traffic infrastructure and traffic suprastructure, the reality is less than satisfactory (Table 1). In a five-year period it is observed that there has been no railroad increases. There is one positive fact and it concerns the number

of stations that has increased, and this indicate better relations and greater servicing. Decrease is visible in smaller number of locomotives (electrical and diesel), which clearly shows the state railway traffic is in. Insufficient and inadequate infrastructure is decreasing the production of services, and transport service users are being deprived of services.

It is interesting that in the period from 2002-2006 Hrvatske željeznice are planning to invest 10.8 million kunas into railroads. The main investment is to be allocated to capital maintenance and modernization of the main road network, into building new tracks, the reconstruction and repair of sidetracks, bridges and tunnels, into electrification of individual sections of tracks, into modernization of railroad signalisation and remote operation traffic management, into electrical cables, into telecommunication infrastructure as well as into information technology. More than half of the above mentioned money is to be invested into infrastructural area, in the amount of 6.372 billion kunas.⁶

Table 1 - Infrastructure and suprastructure condition, 1997-2001

Infra and suprastructure:	Year				
	1997	1998	1999	2000	2001
Length of lines (km)	2726	2726	2726	2726	2726
Railway stations*	286	288	309	315	331
Locomotives*	430	430	389	389	304
Rail cars and trailers*	251	251	199	199	200
Passenger wagons*	825	777	720	720	698
Goods wagons*	11557	10302	10270	9986	9456

* = pieces

Source: Statistički ljetopis Republike Hrvatske, Državni zavod za statistiku, Zagreb, 2002, p. 314.

3.3. Road traffic

Best results in the traffic of the Republic of Croatia are achieved in road traffic. This traffic branch has 58.8% passenger transport and 43.4% of total commodity transported in 2001 (regarding railway, air, maritime, pipeline and river traffic). And in the last five years, it has been continuously noted that the larger part of road traffic is made by passenger transportation, and considerable results are achieved in commodity transport, noting that in this segment maritime traffic is great because of the lower costs of transport. The reasons of the greater share of road traffic in comparison with other traffic branches concern greater investments made for the construction and modernization of roads, traffic signalisation, and lower transport costs, easier purchase of new motor vehicles and numerous other reasons. Also, one important reason is that road network is of greater quality. Thus, concerning road infrastructure, there have been some positive movements, increased length of roads, etc.

3.4. Air traffic

In 2001, the least number of passengers was transported by air (only 1.1%) with regard to other traffic branches. Also, air freight transport showed poor results (only 0.1%). The reasons for this are equally distributed on air transport expensiveness as well as the fact that airlines do not often or at all cover all the possible and needed routes of cargo movements. Besides, other traffic branches have lower transportation costs. However, data show graduate changes concerning air traffic usage within total traffic of the Republic of Croatia. Namely, there has been a greater number of airplane passengers, and at the same time the airfreight transport increased (cf. chart 5).

Apart from the increasing quantity for the traffic measured in passengers and cargo being transported, there has been a growing number of airplanes from 15 in 1997 to 20 in 2001, which offer services of higher quality. This is supported by the fact that in 1997 there were 19,920 work flights and in 2001, 22,683 work flights. However, air traffic share is still small,

Table 2 - Increase of road infrastructure and suprastructure, 1997-2001.

Year	Road infrastructure (km)			Road suprastructure (pieces)				
	Highway (state)	Regional (district)	Local Roads	Motor-cycles	Passengers cars	Light vans	Buses	Goods vehicles
1997	7378	10193	10269	17401	932278	8686	4771	101051
1998	7378	10193	10269	18957	1000052	9134	4814	106634
1999	7423	10403	10183	20499	1063546	9317	4743	109387
2000	7427	10499	10197	21868	1124825	9382	4660	113134
2001	7467	10510	10298	24305	1195450	9598	4770	119899

Source: Statistički ljetopis Republike Hrvatske, Državni zavod za statistiku, Zagreb, 2002, p. 315.

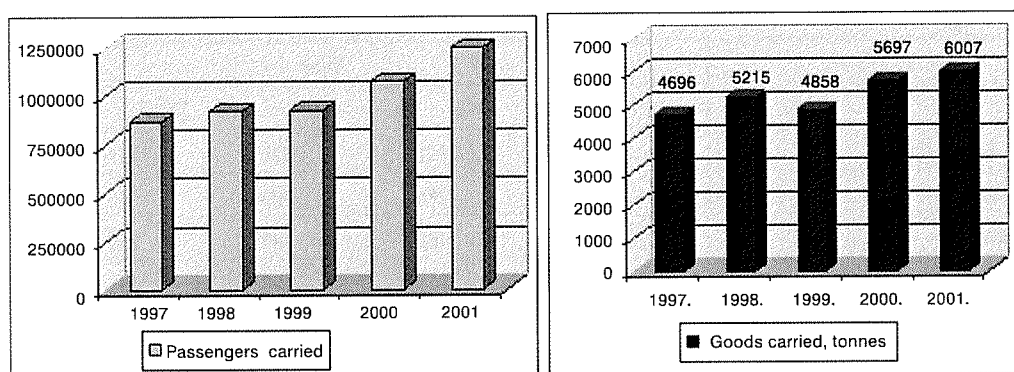


Chart 5 - Transport of passengers and goods by aircraft, 1997-2001

Source: Statistički ljetopis Republike Hrvatske, Državni zavod za statistiku, Zagreb, 2002, p. 319.

which indicates the necessity for investments and promotion.

3.5. Postal traffic

Postal traffic has been over the recent years under great privatisation influence, and it was marked by separation of postal and telecommunication traffic into two separate traffic branches. In spite of that, today, postal traffic is marked by its constant growth and development concerning new services. Today, in the area of the Republic of Croatia there are 1,155 post offices (chart 6).

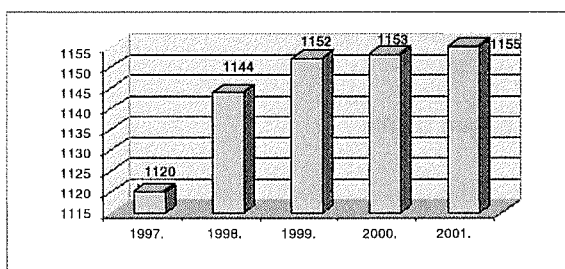


Chart 6 - Number of post offices, 1997-2001

Source: Statistički ljetopis Republike Hrvatske, Državni zavod za statistiku, Zagreb, 2002, p. 326.

Regarding 1997, there has been an increased number of package services and money traffic services (money payments). Phone calls from post offices have been reduced (15,932 in the 2001 and 19,539 in 1997) which is the result of greater mobile phone usage and

increased number of telephone subscribers. This has resulted in a decreased number of telegraphs (12% less than in 1997).

3.6. Telecommunication traffic

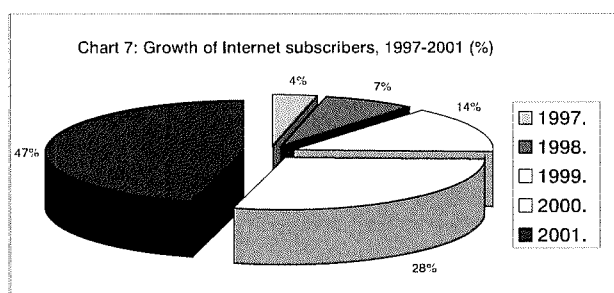
Telecommunication traffic concerning services to users has grown drastically. Not only has there been a growing number of telephone subscribers, but there has been a continuous growth of digital network subscribers, not to mention Internet subscribers (cf. chart 7).

Source: Statistički ljetopis Republike Hrvatske, Državni zavod za statistiku, Zagreb, 2002, p. 326.

Telecommunication traffic development has followed the development trends of modern technical and technological achievements in mobile phone technology and information, Internet business. Therefore, it is understandable that telecommunication traffic is rapidly developing as the technology develops.

3.7. Pipeline traffic

By transporting oil and oil derivatives, the pipeline traffic enables fuel supply to entire economy. Since geographical position of the Republic of Croatia is such that it is connected with continental states as well as with maritime states, Croatia is thus included into European traffic and economic flows, transporting oil from distant, continental states across the Croatian territory to the sea, and then towards its destination centres. Unfortunately, concerning investments into pipelines, there have been no movements in increas-



Source: Statistički ljetopis Republike Hrvatske, Državni zavod za statistiku, Zagreb, 2002, p. 318.

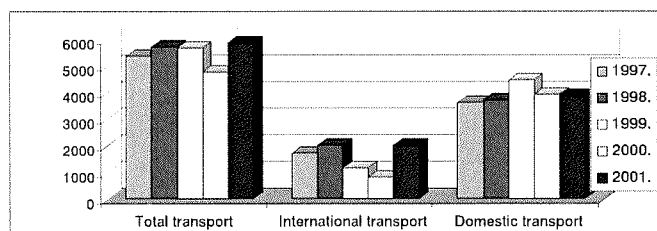


Chart 8 - Oil transported from 1997 to 2001, '000 tons.

ing the pipeline length in the five-year period (1997-2001), but oil transport has increased (cf. chart 8). The national oil transport is still the largest pipeline category, even though in 2001 there has been an increase of international traffic.

Besides oil transport, pipeline traffic includes gas transport as well. Also, concerning oil, in this segment there have been no better results. Gas pipeline are experiencing a decrease in length (from 1701 km in 1997 to 1625 km in 2001). This fact follows gas oscillations concerning gas transport. By including the Republic of Croatia into the European and traffic systems, and by increasing the role that the national pipeline transport plays in the international oil and gas transport, general increase of total traffic in the Republic of Croatia is to be expected.

3.7. River traffic

River (inland) transport and traffic are still under-represented in the Croatian traffic system. The inland navigation concept includes, besides river transport and traffic, lake and canal transport and traffic. The single most important inland waterway is the river Danube which is navigable on its entire flow through the Republic of Croatia, in the length of 138.5 km. From other navigable rivers, the river Sava should

be mentioned, which is navigable from Sisak to its mouth into Dunav, in the length of 151 km and the river Kupa is navigable in the length of 5 km, from its mouth upstream to the riverbanks of Sisak.⁷

Even though it is underexploited, this traffic branch is expected to develop. There has already been a slow growth in cargo transportation (cf. chart 9).

Parallel with this information, there should be noted that navigation capacities for rivers are increasing. In 1997 navigation capacities concerning rivers were 25 tugboats and barges, and in 2001 there were 32. At the same time, engine-free freighters and tankers are taken out of traffic, and the number of them today is 99 while there were 104 in 1997. It can be seen that river traffic is applied only in cargo transport, not in passengers transport. The potentials should be investigated in that direction.

3.8. Urban traffic

Even though urban traffic is not often mentioned, except when regarding higher fares, the influence of increasing oil and petrol prices or due to traffic collapse because of weather conditions, this traffic branch should not be neglected. However, the data show poor results. Table 3 shows a decreased number of trolley cars, decreasing from one year to another.

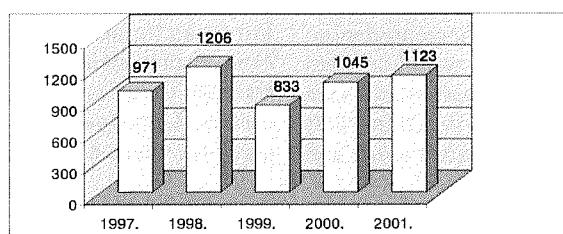


Chart 9 - Transport of goods, 1997-2001, '000 tons.

Source: Statistički ljetopis Republike Hrvatske, Državni zavod za statistiku, Zagreb, 2002, p. 319.

Table 3 - Urban suprastructure and passenger transport, 1997-2001

Year	Suprastructure		Passenger carried, '000	
	Trams	Buses	By Trams	By buses
1997	446	1053	166031	229475
1998	449	1030	162632	217044
1999	446	1080	162422	223628
2000	443	1033	168057	221246
2001	440	1034	177248	221208

Source: Statistički ljetopis Republike Hrvatske, Državni zavod za statistiku, Zagreb, 2002, p. 316.

Also, the increase in passengers transported by trams has been evident as well as the decreasing number of passengers transported by buses. This can be the result of increasing the road vehicles, bus fares getting more expensive but also as a consequence of decrease of transport capacities that result from the decreased number of line routes or decreased frequency of transport lines.

4. DEVELOPMENT ORIENTATION OF CROATIAN TRAFFIC

By analysing the condition of the traffic branches in Croatia, some unsatisfactory results concerning traffic infrastructure and traffic suprastructure have become evident. Insufficient number of transport capacities, poor maintenance and old age have all resulted in poorer traffic efficiency. All the above stated implies the necessity for greater investments in traffic. Current investments into traffic can be seen in Table 4. Even though the data show considerable share of investments into traffic, the question that should be asked is whether those funds are adequately used. Besides investments, crucial to the development of Croatian traffic is the traffic policy regarding the traffic development strategy.

The current traffic policy has been inconsistent. However, striving to join the European integration processes has imposed the need for greater symbiotic relationship between the national traffic policy and the European Union policy. Therefore, strategic goals for the traffic system of the Republic of Croatia have been stated as follows:⁸

- Goals concerning maritime traffic: to increase the share of national shippers in port traffic of national harbours, to attract cargo from economic subjects from gravitation areas, to comply with administrative demands from the European Union, to improve harbour labour process and to increase harbour productivity, to encourage further development of feeder services between Croatian and other Adriatic and Mediterranean harbours and many others (...). In order to achieve the goals stated above, it is necessary to get as many relevant participating subjects to cooperate, work together on the project of developing the national harbour system and to establish the priority national harbour transport routes, to cooperate with organizations of maritime shipping and relevant national and foreign economic subjects which work together in the overseas international trade by using the Croatian harbour system, to undertake activities concerning technological modernization of merchant fleet resembling characteristics of the

Table 4 - Investments in traffic in the Republic of Croatia as a share of aggregate demand from 1990-1999

Year	GNP	Investments total	Traffic investments	Total investments in aggregate consumption	Traffic investments in aggregate consumption	% Investments into traffic of total investments
1	2	3	4	3/2	4/2	4/3
1990	156,111	15,611	3,556	10.0	2.3	22.8
1991	110,250	11,200	2,775	10.2	2.5	24.8
1992	87,323	9,333	2,061	10.7	2.4	22.1
1993	78,635	9,546	3,393	12.1	4.3	35.5
1994	92,335	10,013	2,968	10.8	3.2	29.6
1995	98,382	10,474	2,676	10.6	2.7	25.5
1996	104,329	18,291	2,471	17.5	2.4	13.5
1997	115,495	24,103	3,338	20.9	2.9	13.8
1998	122,147	24,245	3,097	19.8	2.5	12.8
1999	121,507	25,510	3,708	21.0	3.1	14.5
Total	1,086,514	158,326	30,043	14.6	2.8	18.9

Source: Blažević, B.: Investicije u promet i gospodarski rast Hrvatske, *Suvremeni promet*, Hrvatsko znanstveno društvo za promet, Zagreb, 5. p. 344.

- leading world maritime countries, to reconstruct optimal harbour infrastructure (...).
- Goals concerning air traffic: integration into international regional (global) system, safety in air traffic, environmental protection, strengthening of the national market, making the existing airports lucrative, ensuring profitability of national flag carrier Croatia Airlines and further fleet development based on demand, establishing the feeder and commuter air transportation and many other goals to achieve. Guidelines predicted for achieving these (and other here not stated) goals are set for the conception of development plans with emphasis on transit traffic flows, conception of complementary policies in air traffic, implementation of EU rules and technical and safety standards, making commercial management of profitable and potentially profitable airports stronger, establishing legal rules for privatisation of small and not profitable airports (...).
 - Goals concerning railway traffic: integrity with European railway network, safety in railway traffic, environmental protection, progressive maintenance and higher level of servicing current railway network, progressive development of modern tracks network as part of international corridors, competitive operators on the free market (...). Some of these guidelines that are supposed to achieve the above stated goals include development plans conception with emphasis on international corridors X, V_B and V_C , progressive railway network electrification, bigger electrical rolling stock, making dynamical plan of investment maintenance of the network, business mergers with international railway operators (...).
 - Goals concerning postal traffic: effective creation of universal postal services, profitable operation of national postal operator, postal development according to development trends of “digital technology” and information society, postal network development according to traffic demands, efficient automation of sending packages according to optimal number of collection points, the growing share of the Croatian postal services in the monetary system (...). Guidelines which would enable this would include: national postal operator re-engineering, rational introduction of automation and information technologies into postal traffic, implementation of the European Union rules, setting up grounds for stimulating legal boundaries for entrepreneurship and business, increasing quality of international postal lines, ensuring conditions for private capital investments into some parts of postal system (...).
 - Goals concerning telecommunications: integrity with the European networks, “user paradigm” instead of current engineering - bureaucratic paradigm, consistent “digital economy” development, telecommunication infrastructure development consistent with intelligent transport system (ITS) development and many other goals. Guidelines for achieving strategic goals are the ones concerning implementation of the European Union rules and international technical standards, setting a legal boundary for e-commerce and digital business, stimulating an intense development and widening scope of the Internet services and applications, maintaining satisfactory level of the basic telecommunication network built in regard to the economic development and service demand (...).
 - Goals concerning urban traffic: emphasis on urban traffic development, reduced usage of the road motor vehicles, efficient regulation of traffic flows by implementing intelligent systems, considerably greater traffic safety, emphasized infrastructure development of public and non-motorized traffic, more profitable service providers in public urban transport (...). In order to achieve these goals, it is necessary to give subsidies to urban traffic, to enable legal pricing, to eliminate unnecessary traffic, to implement the European Union initiatives and best practice scenarios, to build road by-passes, to plan a development strategy of urban and suburban public passenger transport, to develop strategies for pedestrian and cyclist traffic.
 - Goals concerning road traffic: integrity with the European road network, legal pricing concerning road traffic, traffic safety, setting legal rules for competitive behaviour of operators on the free market, efficient maintaining of current road infrastructure, development plans for new infrastructure concepts (...).
 - Goals concerning river traffic: integrity of inland waterways with the European waterway system, greater power of the national market, progressive development of river harbour-terminals, dominant integration of infrastructure of water traffic into intermodal traffic network (...). Guidelines for achieving these goals are: construction of the multipurpose canal Danube - Sava, making of the development plans to connect the Danube Basin with the Adriatic region, implementation of EU rules and international technical and safety standards, development of traffic plans based on studies that prove their justification.
- On its way towards accessing the European Union, the Republic of Croatia has to accept many European documents, and to adjust its economy to the European principles. Therefore, the Republic of Croatia has signed a treaty about stabilization and joining the European Union. Within that treaty, among other things, the traffic is one of the areas set as the priority

while in process of harmonising the Croatian law with the Union. The cooperation concerns:⁹ the development of road infrastructure, railway, airports, inland waterways, harbours and other main streams of common interest, Trans-European and Pan-European connections; railway and airport management which would need adequate cooperation between responsible state departments; road traffic that produces taxes and surtax, as well as the social and ecological aspects; combined railway and road traffic; harmonising statistical data with international traffic; technical equipment modernization especially the one for road-railway traffic, multimodal traffic and cargo handling; promoting common technical and research programs and accepting coordinated traffic policy compatible with the one in the European Union.

By enforcing the above stated guidelines and by harmonizing business with the European Union demands, the Croatian traffic system will get the opportunity to integrate into the European traffic flows, and who knows, perhaps one day it will stand side by side with the world traffic systems.

The interesting part, seldom given adequate attention is the research of possible cable railway transport and traffic development as well as the (car) taxi traffic. In some developed countries, these traffic branches are very much represented, while in the Republic of Croatia they are still not adequately developed, but cannot be ignored. Taxi traffic, even though still small compared to developed countries in the world, should be encouraged and developed, because, apart from using it for passenger transport to and from the work place it could and should be used also for tourist purposes, for promoting the Croatian little towns. Even though cable railway is mostly used at ski resorts, one day, when the Croatian mountains are used as recreational centres, perhaps cable railway will come to its moment of glory especially because it has been characterised as clean technology, causing less pollution compared with other traffic branches.

5. CONCLUSION

The traffic system connects every state with its neighbouring states, but also with the rest of the world. Traffic branches development directly and indirectly influence the economic development. By having competitive advantages in some branches of traffic, on a national level, the assumptions for competitive advantages on international level are made.

Today, there are many types of transport and traffic, such as: maritime, railway, road, air, river, postal, telecommunications, pipeline, space (...) transport and traffic. Which branch is to be more exploited de-

pends not only on the geographic location but also on the possibility for using natural resources, as well as the national growth strategy and traffic policy.

In the Republic of Croatia there are nine traffic branches: maritime, road, railway, air, postal, telecommunications, river, urban and pipeline transport and traffic. Best business results are achieved in road traffic. However, in all traffic branches the shortage of modern traffic infrastructure and traffic superstructure is evident. Therefore, higher investments are needed concerning acquiring means of work.

Besides, for the Republic of Croatia to integrate into the European traffic and economic systems, it is necessary to implement the European Union rules as well as the international technical and safety standards, to work on the strategic development plan for every traffic branch, and to set up the legislation which would enable the implementation of all the above stated. Only in this way can the Croatian traffic system be included into the European economic and traffic flows.

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