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REPLIES TO THE QUESTIONNAIRE ON TRANSPORT DEVELOPMENT

Addendum 3

Transmitted by the Government of Czech Republic

Note: At its fifty-ninth session the Inland Transport Committee, following an earlier decision taken at its fortieth session (ECE/TRANS/42, para. 45), agreed to circulate the questionnaire on the most significant criteria for the determination of new and important developments with regard to inland transport in the member countries of general interest to Governments (ECE/TRANS/119, para. 52).

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A. General transport policy aspects

1. The Czech Republic disposes of an advantageous position in Central Europe. The territory of the State is covered by relatively dense rail and road networks which, however, require a systems modernization and increase of the standard.

About 1.8 million of inhabitants are engaged in activities connected with the movement of persons, materials and products (including transport on own account, storage management, etc.), and at the same time they make use of basic assets in the amount of more than CZK350 billion (1989 prices). In recent years the transport sector apart from the railway underwent privatization.

In terms of density, the transport infrastructure is comparable with that of the EU countries, however, the Czech Republic's transport infrastructure is not comparable as regards the quality, backlog in technical condition and limited interconnection with European transport ways. Funds that have been invested in past years into the transport infrastructure fall behind recommended average construction costs which have been set at 1.5% - 2% of the GDP. In the period 1992–1994 the proportion of investment costs fluctuated around 0.720 – 0.789% GDP. No sooner than in 1995 an increase of that proportion above the limit of 1.0 % has been achieved, while approaching 1.5% in 1997. In 1999 it dropped to about 1.285%. However, in this proportion the State budget subsidies represent 0.815%. The remaining part is constituted, besides own resources, by long-term credits. According to World Bank and EU estimates the backwardness as at 1998 amounted to CZK350 billion. This backlog is deepening because of the lack of funds.

Freight transport: Subsequent to 1990 new laws have been adopted which to a maximum degree have liberalized the market access. In the road freight transport altogether 36,236 public transport undertakings have been registered as at 2000. In inland waterway transport freight transport is operated by 7 carriers. The number of lorries of all categories increased from 1990 by almost 100 %. In 2000 it totalled 275,617 lorries and 22,669 tractors.

According to the nation-wide 1995 transport count the traffic load of the road network increased by 26% as compared with 1990, the greatest growth being apparent on motorways (up to 34%). This trend continued up to 1999. A modest reduction in the road network traffic load took place in 2000 due to the growth of fuel prices.

On newly built motorways and expressways and also on the neighbouring road network, the road freight and individual passenger transport trend manifests itself by a sharp increase in the traffic intensity, which requires dealing with such a situation by the appropriate transferring of the traffic to ecological transport modes.

The transit traffic and the traffic load on road border crossings have considerably increased as well. In the period 1990–1999 the carrying proportion of road transport substantially increased – almost threefold. Of the total transport performance in 1999 almost 65% fell on public road freight transport and transport on own account, and this proportion increased already to 79% in 2000. The carrying performance of rail transport amounted in 2000 to less than 19%. Also the performance of waterway transport dropped almost by 48% (however, its share in the transport market is only approximately 2.4%). In contrast to a steep decline in the carriage of

goods in 1997-1998 a repeated growth in the carriage has taken place achieving the 1997 level. Higher growth trends have been recorded in air transport where the index of commercial air transport achieved 1.27 in 2000/1999. Combined transport shows a slow but continuous growth in the carriage of goods. The volume of goods carried in containers by rail shows an average yearly growth with an index of 1.1. Altogether 2,901 thousand tonnes of goods were carried in 2000 (including the mass of containers).

For ecological reasons the carriage of lorries by the Ro-La system has been introduced in the section Lovosice – Dresden. The number of vehicles carried per year fluctuates within the interval of 90 – 100 thousand. At present opportunities are being pursued in order to give preferential treatment to this transport mode and to maintain it as regards the traffic movement across Czech Central Hills, namely even after the D 8 motorway is put into operation. A minimum increase has been recorded as concerns the number of railway wagons with swap bodies. The year 1999 saw the carriage of 19,098 swap bodies and in 2000 even 26,576 ones, whereas in 1996 only 663 swap bodies were involved. Admittedly, the share of the combined transport in the total rail transport has been higher in West European countries by about 10–30 % but at relatively substantially smaller volumes. This means that in relation to population a greater volume of combined transport has been achieved in the Czech Republic as compared, for instance, with France.

In passenger transport, in the course of 1990–1997, a drop in the demand for passenger public transport has taken place – by about 48%. Another decline occurred in 2000 when the performance index 2000/1999 reached the value of 0.97. Concerning urban mass transport a drop by about 17% was recorded in 1997, while the performance index of 1998/1997 was 0.97. Certain revitalization occurred in 1999 when the growth index as compared with 1998/1997 amounted to 1.04 and the number of passengers carried practically reached the 1997 level. The year 2000 was comparable with 1999 in terms of performance. Between 1990 and 1999 the number of passenger cars increased by almost 50% and reached over 3.44 million of vehicles (source: Ministry of Interior). A particularly critical situation exists in the city of Prague where there is a ratio of one passenger car per 2.0 inhabitants. In the bus regular service the 1997/1990 performance index in pass/km fell to 0.538 whereas the 1998/1997 index amounted to 0.98. As compared with past years also the load of bus connections on working days substantially declined – on working days 87% of bus connections operate below the profitability threshold. During public holidays and weekends this share is fluctuating around 80% but the number of connections is substantially reduced. As for rail transport, a reduction in the carriage of passengers took place by almost 22% in 2000 against 1995. Air transport shows a permanent increase in the number of cleared passengers, and in 2000 it reached 5.9 million passengers at the 2000/1999 index of 1.35. The principal change in the ownership relations also brought about a change in the employment structure, in the deployment of resources in terms of the area and the flows of traffic load regarding the destinations served with transport. The passenger transport input prices are changing, the price increase of the fare takes place together with the reduction of subsidies which results, inter alia, in an indirect support of private car traffic development.

2. By its Resolution No. 413/98 the Czech Republic's Government adopted the Transport Policy of the Czech Republic as a strategic document of the transport sector of the Czech Republic. This created a basis for a needed set of measures, including further elaboration of this open document, after completing the adjustments motivated by the Government programme statement and their transposition into the conditions of the transport. The Czech Republic's

transport policy constitutes part of the pre-accession strategy for the entry of the Czech Republic into the European Union (EU) and one of the programme documents needed for the accession. As a follow-up to this main strategic document other documents have been developed: A Concept of the Development of Transport and Communications of the Czech Republic, A Proposal for the Development of Transport Networks until 2010, Medium-term Strategy for the Transport Sector, Telecommunications and Postal Services, National Telecommunications Policy of the Czech Republic. Certain documents, for instance, the last two documents mentioned, were subjected to assessment according to Act No. 244/1992 Coll. on the environmental impact assessment (Strategic EIA-SEA). In February 2001, the Government of the Czech Republic discussed a Time Schedule and Financial Provision for the Implementation of the Proposal for the Development of Transport Networks in the Czech Republic until 2010.

The following basic objectives of an integrated transport system in the medium-term period are to be considered:

- implementing the transport policy as an integrated system;
- ensuring the transport safety;
- ensuring a high quality link-up of the Czech Republic's transport networks with that of Europe;
- ensuring an adequate quality also on other secondary transport networks;
- supporting an efficient breakdown of individual transport modes to enable application of an instrument for influencing the desired modal breakdown by the State administration, in compliance with EU legislation and practice;
- achieving harmony between transport development, environmental protection and health of the population;
- achieving full harmonization of the Czech Republic's legislation with that of the EC.

As from the year 2000 a reorganization of the State administration and the self-government is in progress. Up to now, the first phase has been completed and the second one will start in 2003.

Within the first phase an intermediate public administration link (between the State administration and the self-government units) has been established. It is a matter of the so-called regions representing the NUTS 3 level. There are 14 regions in total. In order of implementing EU regional policy and enabling the receipt of finances from Structural Funds the so-called Cohesion Regions were established comprising one or three regions. There are eight Cohesion Regions in total having a NUTS 2 level and represented by representatives from appropriate regional authorities (Regional Councils).

In the second phase the hitherto existing districts (74 districts in total) will be dissolved. Their powers will be partly assigned to regions, partly to communities and for the most part to authorized third level communities or, to put it differently, to small districts. Small districts will not be represented by a new authority but by a municipal authority of the authorized community, this authority to be assigned extended powers.

Impacts on the reform on the transport sector:

In the transport infrastructure field the following competencies will be assigned:

The Ministry of Transport and Communications will be responsible for the maintenance and development of motorway and class I road networks, for the nation-wide rail network infrastructure and for the development of inland waterways.

Regional authorities will be responsible for the development of class II and class III roads.

Community bodies will be responsible for the development and maintenance of local road communications and urban mass transport infrastructure.

The responsibility for serving the territory with public mass passenger transport and for ensuring the passenger transport in the public interest will fall to the regional authorities. The community authorities will be responsible for the operation of urban mass transport. A system of subsidies is designed to support carriers operating the public mass transport. In 2001 a National Development Plan was drawn up, part of which is a Sector Operational Program Transport. After comments submitted by the Commission, the strategic materials referred to are undergoing actualization in 2002.

3. **New Acts:** the Czech Republic's Parliament adopted Act No. 247/2000 Coll. on obtaining and upgrading the professional competence for motor vehicle driving (new tests for driving schools, driving licences); Act No. 361/1200 Coll. on the operation on road communications (change in the right of way on pedestrian crossings); Act No. 56/2001 Coll. on the conditions for the operation of vehicles on road communications (approval of technical roadworthiness and registration of individually imported usually older vehicles).

A "Systems Program to Increase the Road Traffic Safety" has been adopted. The programme is broken down into measures relating to the following spheres: organization and legislation, human factor, vehicle, road communications.

Road traffic safety is one of the priorities of the Czech Republic's transport policy. By its Resolution No. 681/97 the Government adopted "Action Program to Increase Road Transport Safety".

Based on the Government Resolution No. 505 of 21 May 2001 the Minister of Transport and Communications established a Coordination Council of the Minister of Transport and Communications to provide for traffic safety on road communications. The Council, so-called "BESIP", serves as a coordination, initiative and advisory body of the Minister of Transport and Communications of the Czech Republic assigned with a task to provide for a concentrated care of the traffic safety on road communications.

Selection of actions of utmost importance:

Educational programme as promulgated by the Government Council:

Programme of a systematic training on children transport playgrounds. In conclusion the children may obtain a cyclist certificate.

Working notebooks have been prepared and, in cooperation with the Czech Radio, broadcasting of the transport related educational programme "The Golden Zebra".

Nation-wide seminar for district lecturers of transport education and for other educationalists.

Safety driving courses on a sliding foil.

Demonstration of safety belts with the use of a crash simulator to demonstrate the effectiveness of safety belts and other retaining car equipment.

10th seminar on increasing road traffic safety.

Intensive transport education in children summer camps (theoretical education and practical training).

Transport related competitions "Safe Roads" with the participation of handicapped and deaf motorists.

4. In the Czech Republic, in analogy to EU Member States, the high density of private car traffic in large urban agglomerations, particularly in Prague, entails considerable problems in spite of a still high share (about 70 %) of the mass transport in total passenger transport performance. Consequently, in the field of road infrastructure, a new construction of the urban and outer Prague road ring has been launched. There is a backlog in the measures focused on the intensification of existing infrastructure capacities with the use of the telematics. The following are among other measures being introduced:

- charging of parking places in city centres
- introduction of bus driving lanes
- segregation of tramway traffic
- giving preference of tramway traffic to other traffic on crossings
- construction of new metro and tramway lines
- subsidies to the operation of urban mass transport and suburban transport
- introduction of P&R parking places
- introduction of integrated transport systems in agglomerations
- support for cycleways and pedestrian transport (for the time being, there is a large backlog in using bicycle as means of transport).

5. Measures for support of the energy use in transport

One of the basic principles of the transport policy of the Czech Republic is the orientation for the development and the support of such transport modes which are less energy consuming. Total energy consumption in the transport, parts for individual transport modes and trend for period 1990–2001 are included in Table 1. The measures for the support of better energy use in transport can be divided into these lines: technical measures (decreasing of the fuel and

alternative energy source consumptions), measures in the transport infrastructure (construction of dual carriage ways and highways) and organizational measures (increase of better use of public transport, relation with particular transport systems, integrated transport systems and development of combined transport). Very important measures are the support of the research and the development orientated for decreasing of transport means' energy consumption. The main priority of this research is reduction of energy consumption in the propulsion units by improving and electronic controlling combustion cycle, by reducing mechanical losses eventually designing new propulsion units (using hydrogen, electric vehicles) and using alternative fuels. Results of these measures could lead not only to energy savings in the field of transport but also to improvement of the environment.

Table: Energy consumption in transport (TJ)

Year	1990	1995	1996	1997	1998	1999	2000	2001
Individual road passenger transport	51286	74011	78713	80698	77539	84485	85518	86141
Public road passenger transport	17626	15556	13588	11357	12306	11157	11670	8319
Road freight transport	25010	21156	42361	55118	49810	53423	52894	55544
Mass urban transport - buses	8040	8333	7961	7904	8541	8106	8096	8569
Railway transport	15951	11031	8093	5454	5898	5191	7166	7480
Waterway transport	2029	1858	1871	891	1090	1083	870	1176
Air transport	11483	8098	6938	6624	7133	7438	7742	8133
Total	131425	140043	159525	168047	162317	170883	173956	175363

I. Economic, technological and operational aspects

6. Public regular bus services

Act No. 111/94 Coll. on road transport, as amended by Act No 150/2000 Coll., defines the public service obligations within the system of providing for basic transport services and other types of transport services and in connection with the reimbursement for provable loss. The definition and calculation method of the provable loss has been laid down by the Ministry of Transport and Communications implementing decree No. 50/98 Coll. on a provable loss.

Contracts on the public service obligations are concluded between the carriers and the district authorities, the integral part of contracts being also the amount of the reimbursement for the provable loss paid from budgets of district authorities.

If it is the case of providing for transport services of other types the contracting relations are concluded between carriers and individual communities or, if appropriate, associations of communities with reimbursement for provable loss being paid from communities' budgets.

Funds reimbursed for provable losses (in v mil. CZK):

	1997	1998	1999	2000	2001
District authorities	1210	1632	1844	2062	2050
Communities	493	418	508	429	558
Total	1703	2050	2352	2491	2608

The servicing of the territory with transport is ensured by about 6,100 buses with an average age of 9.6 years. In order to support the rehabilitation of the bus fleet the Government decided by its Resolutions No. 499/97 and No. 632/2000 on the amount of the participation of the State in such rehabilitation.

The approved participation of the State is implemented by means of the Ministry of Transport and Communications budget, and the appropriate subsidies are granted to particular carriers directly.

A survey of funds granted and number of buses procured under the State's participation:

	1997	1998	1999	2000	2001
Total amount in mil. CZK	150	150	150	150	363
Number of buses procured	311	299	300	300	430

Public railway passenger transport

Until 2000 the operating losses incurred were covered from the State budget through the Ministry of Transport and Communications budget, namely including the reimbursement for the railway infrastructure costs.

In 2001 the reimbursement for railway infrastructure costs was transferred to the State Transport Infrastructure Fund.

The reimbursement for operating losses, in compliance with Act No. 266/1994 Coll. on tracks, as amended by Act No. 23/2000 Coll., has been split into the reimbursement for provable loss incurred in public service obligation ensuring the provision of basic transport services (the operation of passenger and fast trains) and the reimbursement for provable loss incurred in public service obligation ensuring the transport requirements of the State in the public interest (the operation of non-stop and express trains).

The reimbursement for a provable loss incurred in ensuring basic transport services shall be implemented through district authorities, namely by defining the extent of public service obligations on operation, on carriage and on tariffs. The tariff part of public service obligation shall be decided on at the level of Ministry of Transport and Communications.

The reimbursement for provable loss incurred in ensuring transport requirements of the State in the public interest shall be implemented at the level of Ministry of Transport and Communications.

The sums of individual amounts of the reimbursement are not referred to because they do not, for the time being, relate to real sums to be covered, and the inadequate reimbursement of the provable loss is cumulated as an accounting loss.

7. Economic assessment related to transport is principally based on the fact that the freight transport is economical, even profitable, while in most cases the mass passenger transport shows economic losses due to high costs. However, if recourse is taken to fare increase in order to achieve profitability, the transition of passengers to individual car traffic would inevitably ensue. Therefore, a system of subsidies is functioning in the Czech Republic thereby supporting the mass transport and keeping the tariff within limits of accessibility for the public in general.

The carriers are seeking ways to improve profitability by better using the vehicle fleet and working force. In road transport the issue of increasing profitability is in the hands of the private sector. Another situation is in the State-owned railway where the transformation of railways should bring about improvements in the rail vehicle and working force management, and also in other management spheres, particularly by making costs transparent. What is also recorded is the endeavour to achieve labour productivity growth by, for instance, the reduction of operating hours of locomotive and train crews, the volume of goods carried remaining constant.

8. Passenger transport – see point 9

Freight transport

Operation of the intermodal freight transport in the CR:

Accompanied combined transport Ro-La Lovosice – Dresden. However, the operation is considered only until the time of the opening of the D 8/ A17 (FRG) motorway. The line is subsidized by the Saxon Government (from two-thirds) and by the Czech Government (from one-third). At present a study is being prepared dealing with the transfer of at least part of the performance to unaccompanied combined transport by rail or by Elbe waterway. The second line Ro-La, České Budejovice – Villach, was cancelled and its renewal is not envisaged.

Unaccompanied combined transport is recording growth of the carriage performances, namely due to the growth of maritime transports from Prague to West European ports (Rotterdam, Hamburg, Bremerhaven). Currently a construction of a new combined transport terminal at Lysá nad Labem is under preparation. Short distance combined transport shows a downtrend, and also a reduction in the number of container transshipments has taken place.

The swap bodies show a low exploitation as well as the serving of logistic centres with railway transport. The majority of logistic centres are not linked to the railway network in general – it is a case of business logistic centres that are focused on a single business chain or a narrow circle of undertakings. It would be appropriate to establish a network of public logistic centres serving the transport and founded by associated private capital or, if desired, with the support of local state administration bodies.

Praha-Ruzyne as a principal Czech airport (95 % of air transport performance in the Czech Republic) lacks a link to railway transport, which is considered as a substantial shortcoming. Therefore, a construction of a new railway connection, in the first phase, should ensure the connection by suburban light rail units to Prague centre and, in the next phase, also the service by long-distance trains of higher quality.

9. The need to integrate urban and suburban transport has been laid down in the Czech Republic's transport policy as one of its important objectives. Indisputable progress has been achieved in the field of coordination of individual passenger transport modes by introducing an integrated transport system.

The lines of the integrated transport system (ITS) have been introduced in the environment of Prague and, further, in Brno, Ostrava, Zlín, Plzen and Karlovy Vary regions. Similar projects are being prepared in other cities too. The ITS lines referred to include the establishment of lines of suburban rail and non-rail transport, the core ITS lines operating as a rule with a regular pace. The integration covers the fields of the tariffs, timetables and, if appropriate, the constructions. The introduction of ITS is accompanied with a certain problem consisting in the fact that a full integration is only seldom involved. Consequently, there are certain cases when the system in place fails to ensure a full integration of individual transport modes. However, the desired process of interconnecting various integrated systems has been gradually started. It is necessary to note that the introduction of operable ITS is often conditional on necessary investments into means of transport, the infrastructure or, if appropriate, into other fields, particularly in building the "core integration" which should be ensured, first of all, by rail transport.

In the field of legislation and support for the establishment of ITS, it is necessary to implement the concept of public service obligations both in fields of road and railway transport within the process of providing for regional transport policies and transformation of Czech Railways.

In coordinating the timetables of urban and suburban transport, the permeability of transport networks has arisen as an important issue because failure to achieve adequate permeability may entail irregularities thereby disrupting the whole ITS, with all negative consequences associated with it. Active preferential treatment has been introduced in the field of urban transport, in the tramway service in particular. As an independent system, the Prague metro shows a relatively easy position. In the field of suburban transport a parallelism is taking place with respect to long-distance, suburban and also freight transport operated on a single rail line. The differences in the speed of individual trains may lead to the reduction of permeability on such lines.

The introduction of the P + R system makes an important element in increasing the attractiveness of suburban transport systems. Such systems are gradually being introduced into the life at Prague metro stations and, in certain cases, at railway stations. Its utilization depends on many factors. The parking drivers are allowed to use preferential tickets which also cover the parking price.

Urban mass transport

Urban mass transport is ensured in larger cities by independent transport companies which are connected on an economic basis to budgets of respective cities. There are 19 transport companies of this type and they provide for about 85 % of the number of passengers carried.

In smaller cities the urban mass transport is ensured by carriers in the form of contracts on public service obligation in line with the Act on Road Transport.

The State budget takes no share in the reimbursement for losses incurred in the above-mentioned transport service, and the loss is covered by respective cities.

With respect to the obsolescence of the means of transport, the Government decided by its Resolutions No. 499/97 and No. 632/2000 to support the rehabilitation of means of transport as follows:

	1997	1998	1999	2000	2001
Amount of funds (mil.CZK)	513	550	550	565	150
Tramways procured	36	16	12	6	2
Trolley buses procured	38	31	22	31	7
Buses procured	239	109	183	182	51

From 1998 the support for the procurement of low-floor means of transport has been pursued, namely in the form of an increased participation of the State in the procurement of a given vehicle.

10. The identification and localization of transport problems requires, in general, the following:

Assessment of the capacity and quality of transport ways with respect to identified requirements according to implementation variants, if any, to the condition of the transport infrastructure quality with respect to international obligations of the Czech Republic.

- Technological condition of the transport infrastructure (technological parameters, the hitherto utilization of intelligent transport systems, including the results of research and development in this field in terms of the equipment of the transport infrastructure by facilities of intelligent transport systems).
- Proposal for removing the backlog in the transport network and a proposal for a time schedule of carrying out individual repairs according to results following the comparison of the respective capacities and requirements imposed on them (both qualitative and quantitative).
- Enumeration of financial needs necessary to remove the backlog in the transport network.

For the identification and localization of transport problems as regards particular cases the following is necessary:

- Identification of the bottleneck.
- Determination of the degree of danger to further traffic.
- Specification of operating problems.
- Proposal for organizational, investment and other measures to remove the bottleneck.

The above problems are under study and the findings will be subsequently implemented according to financial resources in the case of concrete measures or, if appropriate, according to organizational possibilities.

11. Transport related research entities are involved in international consortia within the 5th framework programme, COST programme, Leonardo programme, etc. Of the important projects the following may be referred to:

5th framework programme:

- Asset Surveillance and Protection
- Real Cost Reduction of Door-to-door intermodal Transport
- Action for advanced Drivers assistance and Vehicle control system Implementation, Standardization, Optimum use of the Road Network and Safety
- Mobility Management Strategies for the next Decades
- Sustainable Transport in Europe and Links a Liaisons with America
- Gaining Understanding Improved Decision-Making And Participation Strategies GRD-2000-30128
- Improvement of Intermodal Terminal Freight operations at border Crossing terminal
- Impaired Motorists, Methods of Road side testing and Assessment for Licensing
- Road Safety and Environmental Benefit –Cost and Cost-effectiveness Analysis for use in Decision-Making
- Benefit of Urban Green Space
- Alternatives for short distance air connections through organizational measures
- Transport Research Equipment in Europe
- City Evaluation and Demonstration of Innovative Transport
- Creating Holistic opportunities for Improvement our Cities Environmental Sustainability
- Transport Urban Management and Planning for energy and Environment
- Mobil Communication for regional development in rural regions
- Knowledge management in Local transport Companies
- Cost-Effective, Sustainable and Innovative Upgrading Methods for Fire Safety in Existing Tunnels
- Lifetime Engineering of Building and Civil Infrastructure
- Safety Guidelines for Lifecycle Assessment of Roads
- The e-Economy and its Transport Consequences
- Exploration of using Pricing surpluses Of Revenues for Investments in Transport
- Institutional Arrangements and Implementation Deficits in Transport Policy
- Advanced Cost-Efficient Traffic monitoring
- Extended Floating Car Data

- Thematic Network on Air Transport for ATM Validation Activities
- Thematic Network in Optimizing the Management of International Transport Services
- BEST Urban Freight Solutions
- Thematic Network on Freight Transfer Points and Terminals
- Czech Transport Research Integration into the European Research Area
- New means to Promote Pedestrian Traffic in cities
- Life of senior citizens in relation to mobility conditions
- Extended Floating Car Data IST-2001-37804
- Assess implementations
- Tourist and Recreational Activities Valued through Energy Labels.

COST actions:

- Towards a European Intermodal Transport Network
- Habitat Fragmentation due to Transportation Infrastructure
- Parking Policy Measures and their Effects on Mobility and the Economy
- Reduction in Road Closures by Improved Pavement Maintenance Procedures
- Improvements to Snow and Ice Control on European Roads and Bridges
- Procedures Required for Assessing Highway Structures
- Emissions and Fuel Consumption from Heavy Duty Vehicles
- Improvements in Pavement Research with Accelerated Load Testing
- Reinforcement of Pavements with Steel Meshes and Geosynthetics
- The Accessibility of Coaches and Long Distance Buses for People with Reduced Mobility
- Integrated Assessment of Environmental Impact of Traffic and Transport Infrastructure.

III. Infrastructure aspects

12. Based on an analysis the transport sector is to be assessed as follows:

An abrupt increase in the international and national automobile traffic (freight and passenger) from 1989, together with newly-directed traffic flow load and new resource and goal orientation brings about new requirements on the capacity and quality of the transport network whose maintenance and development have been recently neglected in terms of the present decisive policies.

Rapid growth of individual car traffic entails fundamental problems as to the inadequately prepared transport network and the corresponding equipment, air pollution, noise and barrier effects (calmed down traffic, regulatory measures concerning the traffic within residential zones, areas with increased landscape and natural value, etc.), including the congestion of city centres (standard of transport ways and their equipment, public transport quality); also an increase in the number and consequences of road traffic accidents takes place.

For the period subsequent to the entry of the Czech Republic into the EU, the updating of the Czech Republic's transport policy is under preparation, in compliance with White Book recommendations for the future development of the EU common transport policy.

What has not been, for the time being, fully implemented is the harmonization of the transport market conditions of individual transport modes and, in particular, of the rail and the road transport.

Restricting public transport and reducing its attractiveness entails synergetic effects in regional policies.

The existing transport network of the Czech Republic fails to enable a high quality and appropriate link-up of the Czech Republic with the European transport network and that of the neighbouring States.

The majority of residential areas do not enjoy an adequately designed traffic system and the calmed down transport or bypasses for transit traffic.

An obsolete public transport vehicle fleet (in urban public transport, bus and railway services).

The transport network development under review has been approached in terms of partial development strategies of the sector without considering the demand for a comprehensive systems harmonization of the transport system as a whole.

Limited State budget resources as well as of the private capital substantially restrict the speed of removing the backwardness of recent years.

Substantial decline of the share of rail and water transport in the total international and national transport; relatively low share of combined transport in total performances.

The steady growth trend in air transport which is becoming the most progressive transport mode; substantive surplus of capacities in road and rail goods transport.

Transport infrastructure technological condition and maintenance (including inadequate adjustment and condition of bridges) does not comply with the European standards and the conditions of concluded international agreements; also a large part of the technological basis and the vehicle fleet is obsolete and inconvenient.

The comprehensive transformation of the railways and the transformation of Czech Railways into an up-to-date business company has not been implemented. Support for the cycling as part of the transport system and a healthy life-style form is only in its beginning.

It is necessary to create conditions for the introduction of telematics in all transport fields. It is necessary to complete the solution of a uniform financing of passenger transport tariff policy.

The planning and implementation of large infrastructure projects and subsidies into the transport sector from the State budget for Government approved investment programmes represents, in particular:

construction of 450 km of motorways and 890 km of expressways, modernization of 1520 km of class I roads and modernization and reconstruction of 777 km of class II and class III roads,

modernization and reconstruction of 1876 km of railway lines,

modernization and reconstruction of 334 km of inland waterways,

ensure State budget subsidies for the reconstruction and modernization of Praha – Ruzyne international airport, i.e. to ensure Schengen standards according to ES Directives, which consists in the separation of EU passenger flows from that of third countries, and provide for their separate clearance; ensure subsidies for the buy-out of lands associated with the railway line construction to the Praha – Ruzyne airport and subsidies for the programme of the transformation of management, implementation and control of the air traffic above the Czech Republic's territory,

ensure State budget subsidies for the Prague metro construction, reconstruction of existing or construction of new tramway and trolley bus lines and depots, including bus depots,

ensure State budget subsidies for the rehabilitation of vehicles of surface urban public transport and public regular bus service,

ensure State budget subsidies for the construction or enlargement of existing combined transport transshipments, subsidies for the procurement of transshipment mechanisms and for other means of combined transport,

ensure State budget subsidies for the preference of non-motor transportation.

The following suggestions and measures are being planned with respect of individual transport modes:

Road transport infrastructure development:

motorway construction,
expressways construction,
class I roads development,
class II and class III roads development.

Railway infrastructure development:

the reconstruction of four railway transit corridors of Czech Railways in compliance with EU requirements to required technological parameters; first of all, the increase of the speed of trains up to 160 km/h, UIC GC loading gauge for trains of 22.5 tonnes of mass per axle – loading class D4. Modernization of railway national corridors includes, in addition, a complex reconstruction of the railway subgrade and superstructure, including artificial structures, reconstruction or, if appropriate, new construction of the traction wire, modernization of the communications and safety equipment, reconstruction of

crossings or construction of objects of grade-separated rail/road crossings, construction of anti-noise walls, reconstruction or construction of platforms in stations and stops, including grade-separated accesses, etc.

electrification programme of lines (first of all, on lines of international importance),

reconstruction of lines included into international agreements and TINA network (after 2005),

modernization of decisive railway junctions and stations, located on corridors I and II, to technological parameters corresponding to parameters of modernized lines leading into such junctions and stations,

reconstruction of the Praha – Kladno railway line, including the construction of a section connecting Praha – Ruzyne airport with the Praha centre (Praha Masaryk railway station),

Inland waterways infrastructure development:

on the existing Elbe – Vltava waterway,
making Elbe to Pardubice navigable by interconnecting the already navigable sections between Chvaletice and Prelouc, and the construction of the Pardubice port.

Airport transport infrastructure development:

reconstruction and modernization of Praha – Ruzyne international airport,
transformation programme of the management, implementation and control of the air traffic.

Development of transport infrastructure of urban public transport and public regular bus services

field of vehicles.

Combined transport infrastructure development:

field of construction and technological development
field of mobile equipment (machines and equipment).

13. The process of setting priorities for future investment programmes makes use of standard methods. The basis of the forecast of future transport-related relations, the forecast being based on the extrapolation of socio-economic indicators (GDP, population, agricultural and industrial production) and on the demand/supply matrix.

To express benefits from future investments use is made of Cost/Benefit analysis comprising financial analysis (net financial revenue) and economic analysis (economic benefit to the society as whole).

The assessment and comparison of projects makes use of the following methods:

NPV (net present value)
IRR (internal rate of return)
Cost/Benefit ratio
sensitivity or risk analysis.

14. The transport infrastructure funding is ensured from several resources. Until now, their decisive element has been constituted by the State budget which from 2000 following Act No. 104/2000 Coll. is gradually substituted by the State Transport Infrastructure Fund (STIF). On 8 June 2000 the Chamber of Deputies of the Czech Republic Parliament adopted the STIF budget for 2001 which should be in the amount of CZK34.8 billions. The budget should draw from road tax revenues, carbon-hydrate fuel and lubricant excise tax, a share in motorway charges and the rest from the National Property Fund or, if appropriate, from the State budget.

The loans from international finance institutions and contributions from EU finance instruments, in particular, represent another source of financing. In 1999, for instance, the Konsolidací bank concluded two loans with the European Investment Bank (EIB), the loans being designed for road and motorway projects. It is a case of long-term loans for a period of 15–20 years under EIB standard terms. Similar loans are used by Czech Railways for the transport infrastructure development. From 1993 until now the EIB provided loans for the infrastructure development in the amount of €2.1 billion (76 billion CZK), of which €1.3 billion (48 billion CZK) are credits. The loans are guaranteed by the State.

The transport infrastructure modernization programme in the Czech Republic was also supported by the European Union by means of grants from the Phare National Programme, Phare Cross Border Programme and Phare Multinational Programme related to transport. From 1995 the investments into rail and road infrastructure totalled €12.7 mil.(CZK4.05 billion). For the next period, one of the most important sources of foreign financial assistance will be represented by financial instrument ISPA and subsequent to the entry into the EU of the Czech Republic this role will be taken over by Cohesion Fund and the European Regional Development Fund from EU structural funds.

Own resources are considered as an undisputed source of financing the rail, waterway and air transport. Their importance will increase subsequent to the expected restructuring of Czech Railways.

The overall backlog in the transport infrastructure and lack of funds brings about the need to look after other resources. One of such resources is private capital, namely involved in the system “Design-Finance-Build-Operate-Transfer” or “BOT”, with the aim of maximizing the value of money by spreading the risk between the public and private sector. At present a “BOT-D 47” pilot project is under preparation which will, for the first time in the Czech Republic, provide for necessary steps for the introduction of alternative investment methods for efficient building and operating procedures in constructing and utilizing the road communications. This pilot project relates to the D 47 motorway construction within the area of Hranice na Morave – Ostrava.

B.

Number of employees in transport industry

	1995	1996	1997	1998	1999	2000
rail transport	101 874	100 687	98 395	93 261	90 479	87 215
road freight transport enterprises	133 581	139 359	140 817	143 713	144 107	141 820
inland waterways transport	826	578	471	481	599	712

Total investment expenditure in transport infrastructure in current prices (in mil. CZK)

Infrastructure type	1995	1996	1997	1998	1999	2000
railway	3 897,0	5 507,0	10 058,0	10 938,0	9 909,9	13 200,3
road	9 802,0	10 537,0	13 720,0	14 466,0	12 217,0	11 737,0
inland waterways	47,8	15,5	87,4	202,4	114,8	402,2
air	2 523,2	2 769,0	2 565,9	802,4	613,8	992,8
pipeline	1 308,0	1 989,0	374,0	171,9	425,0	399,2

Total investment in transport infrastructure from the State Budget and from the State Fund of the Transport Infrastructure (in mil. CZK)

Infrastructure type	1995	1996	1997	1998	1999	2000
railway-SB	2 321,2	2 456,1	3 201,5	3 928,5	5 553,9	3 813,4
railway-SFTI						1 460,8
road-SB	8 957,0	9 596,0	10 689,0	6 434,0	9 230,2	4 938,0
road-SFTI						2 774,9
inland waterways-SB	0,0	0,0	87,4	170,9	106,2	93,0
inland waterways-SFTI						161,8
air-SB	297,6	387,3	314,5	125,4	93,1	200,0
air-SFTI						0,0

Transport performance of passenger transport

	1995	1996	1997	1998	1999	2000
Passenger transport (in mil.)	4 982,0	4 934,5	4 925,3	4 868,7	4 982,6	4 925,8
Rail transport without IDS	222,6	212,0	195,2	174,2	168,4	174,1
Public road bus transport	644,2	527,4	465,0	456,0	446,9	451,0
Air transport	1,8	2,0	2,2	2,4	2,9	3,5
Inland waterway transport	0,9	0,7	0,7	0,7	0,6	0,8
Urban public transport	2 412,5	2 397,5	2 412,2	2 350,4	2 433,8	2 320,5
Total public transport	3 282,0	3 139,5	3 075,3	2 983,7	3 052,6	2 949,8
Individual road passenger transport	1 700,0	1 795,0	1 850,0	1 885,0	1 930,0	1 976,0
Passenger transport performance (in mil. passenger-km)	90 880,2	93 588,2	93 727,3	94 733,7	97 147,6	101 521,7
Rail transport without IDS	8 022,9	8 110,8	7 720,8	7 017,8	6 956,8	7 299,4
Public road bus transport	10 963,0	9 735,0	8 804,0	8 680,9	8 649,0	9 552,3
Air transport	2 857,5	3 170,0	3 524,5	3 680,0	4 335,2	5 854,7
Inland waterway transport	11,9	7,8	7,8	7,6	7,5	7,7
Urban public transport	14 524,9	14 664,6	14 670,2	14 547,5	14 949,1	14 967,5
Total public transport	36 380,2	35 688,2	34 727,3	33 933,7	34 897,6	37 681,7
Individual road passenger transport	54 500,0	57 900,0	59 000,0	60 800,0	62 250,0	63 840,0

(in percent)

	1995	1996	1997	1998	1999	2000
Passenger transport (in mil.)	100	99,05	98,86	97,73	100,01	98,87
Rail transport without IDS	100	95,24	87,69	78,26	75,65	78,21
Public road bus transport	100	81,87	72,18	70,79	69,37	70,01
Air transport	100	111,11	122,22	133,33	161,11	194,44
Inland waterway transport	100	77,78	77,78	77,78	66,67	88,89
Urban public transport	100	99,38	99,99	97,43	100,88	96,19
Total public transport	100	95,66	93,7	90,91	93,01	89,88
Individual road passenger transport	100	105,59	108,82	110,88	113,53	116,24
Passenger transport performance (in mil. passenger-km)	100	102,98	103,13	104,24	106,9	111,71
Rail transport without IDS	100	101,10	96,23	87,47	86,71	90,98
Public road bus transport	100	88,8	80,31	79,18	78,89	87,13
Air transport	100	110,94	123,34	128,78	151,71	204,89
Inland waterway transport	100	65,55	65,55	63,87	63,03	64,71
Urban public transport	100	100,96	101,00	100,16	102,92	103,04
Total public transport	100	98,1	95,46	93,28	95,92	103,58
Individual road passenger transport	100	106,24	108,26	111,56	114,22	117,14

Transport performance of goods transport

	1995	1996	1997	1998	1999	2000
<i>Transport of goods - total (in 1000s tonnes)</i>	686 429	805 206	643 920	586 582	548 978	523 249
Rail transport	108 871	107 235	111 379	104 788	90 734	98 253
Road transport for hire or reward	356 591	325 817	222 642	201 933	207 763	199 565
Road transport for own account	209 426	359 927	298 840	268 954	240 537	215 159
Inland waterway transport	4 441	3 214	1 828	1 678	1 877	1 906
Air transport	18	14	14	13	17	19
Oil pipeline transport	7 083	8 999	9 217	9 217	8 050	8 346
<i>Transport performance – total (in mil. tonnes-km)</i>	40 977	55 802	64 566	55 669	56 415	58 955
Rail transport	22 623	22 338	21 010	18 709	16 713	17 496
Road transport for hire or reward	10 555	24 470	30 781	24 489	26 039	31 363
Road transport for own account	4 142	5 582	9 859	9 423	10 925	7 673
Inland waterway transport	1 348	1 115	783	915	913	773
Air transport	33	26	27	56	30	38
Oil pipeline transport	2 276	2 271	2 106	2 078	1 795	1 612

Transport Infrastructure

	1995	1996	1997	1998	1999	2000
Length of constructed tracks, total	16 884	16 876	16 714	16 714	17 025	16 494
Length of operated lines	9 430	9 430	9 430	9 430	9 444	9 444
Total road and motorways network	55 500	55 511	55 394	55 394	55 432	55 408
Length of the inland waterway Labe-Vltava	303	303	303	303	303	303
Total number of airports	73	67	74	85	84	86
Total pipeline length (km)	581	736	736	736	736	736
Total number of combined transport transshipment points	23	22	21	20	14	14

Transport Equipment

	1995	1996	1997	1998	1999	2000
Railway Transport						
Locomotives	2 968	2 961	2 973	2 923	2 851	2 829
Electric and diesel railcars	960	970	980	972	983	973
Passenger railway vehicles	5 996	5 953	5 896	5 778	5 607	5 284
Number of seats and berths (in1000s)	397	387	395	382	374	363
Vans	745	741	780	568	606	720
Wagons	74 728	74 312	73 109	71 678	67 110	60 681
Road transport						
Motorcycles registered in the CR	915 229	918 159	929 627	927 080	799 647	748 140
Passenger cars registered in the CR	3 043 316	3 192 532	3 391 541	3 492 961	3 439 745	3 438 870
Minibuses and coaches registered in CR	19 756	20 489	20 755	19 960	18 981	18 259
Lorries registered in the CR	202 929	225 477	246 621	260 276	268 259	275 617
Road tractors registered in the CR	16 382	17 482	18 751	20 035	21 151	22 669
Semi-trailers registered in CR	22 074	23 284	18 997	20 283	21 483	22 780
Trailers registered in CR	630 697	646 924	72 876	83 645	93 207	104 073
Number of electric vehicles in urban public transport in the CR						
Trolleybuses	718	711	721	708	721	727
Trams	1 913	1 929	1 947	1 982	1 899	1 888
Metro	532	528	504	504	504	504
Inland Waterways Transport						
Self propelled vessels	80	53	75	79	76	67
Dumb and pushed vessels	292	194	309	294	291	176
Tugs and pushers	341	160	212	206	151	105
Passenger vessels	74	42	40	41	54	67
Air Transport						
Number of aircrafts with a certificated take-off weight of 9 000 kg and over						
Aircrafts - total number	47	41	49	47	47	44
Fixed Wings Aircrafts-total	41	33	41	42	41	38
Number of aircrafts with a certificated take-off weight under 9 000 kg						
Aircrafts - total number	735	696	725	709	722	732
Fixed Wings Aircrafts-total	712	670	701	680	695	700