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ECONOMIC COMMISSION FOR EUROPE

INLAND TRANSPORT COMMITTEE

Working Party on Transport Trends and Economics

(Seventeenth session, 20-21 September 2004,
agenda item 10 (b))

**COHERENT EUROPEAN SYSTEM OF INTERNATIONAL
TRANSPORT INFRASTRUCTURES**

QUALITY-OF-SERVICE CONCEPT

**Transmitted by the Governments of Croatia, Hungary,
Ireland, Lithuania and Poland**

Note: Following the request by the Working Party, at its sixteenth session, the secretariat circulated a questionnaire containing the *quality of service indicators* as indicated in section 2.2 in document TRANS/WP.5/2003/10 to member countries and asked them to provide information on all available quality of service indicators.

The replies received from member countries are presented below.

* * *

CROATIA

1. Legal and operational indicators		
Indicator	Definition	Values – your reply
Degree of competition	Degree of competition between the various operators. Rate: monopoly= 0 , moderate competition= 1 , strict competition= 2	ROADS – 2 RAILWAYS - 0 INLAND WATERWAY - 1
Public transport passenger trips	Percentage of public-transport trips to total trips (pedestrian, bicycles, public transport, private-cars) in the observed area. [%]	n.a. ^{1/}
Normal fare [Euro]	Normal fare (Euro) for a month of public transport use	ROADS – n.a. RAILWAYS – n.a. INLAND WATERWAY – n.a.
Receipts from public sector for investments in infrastructure and rolling stock	Percentage of public receipts for investments in public transport infrastructure and rolling stock related to total investments [%]	ROADS – n.a. RAILWAYS – 100% (through State budget and loans which are guaranteed by Government) INLAND WATERWAY – n.a.
2. Safety and security indicators		
Indicator	Definition	Values – your reply
Traffic safety	Ratio of passenger injuries by 10 ⁶ passenger km [number/10⁶ pass. km]	ROADS ^{2/} RAILWAYS ^{3/} INLAND WATERWAY – n.a.
Employee safety	Percentage of injuries by number of employees; percentage of criminal attacks on employees. [%]	Percentage of injuries by number of employees – 2.24 % ^{4/} Percentage of criminal attacks – not available
Driver training	Number of in-service training hours per total number of drivers a year [training hours/total number of drivers]	ROADS – n.a. RAILWAYS – n.a. INLAND WATERWAY – n.a.
Security at stops and stations/freight terminals and transfer points	Measure of passengers'/users sense of security at the stops and stations/freight terminals and transfer points. Rate 1=poor to 6=excellent	ROADS – 3 RAILWAYS – 4 INLAND WATERWAY - 3
Security in vehicles	Measure of passengers'/users sense of security in passenger and freight vehicles. Rate 1=poor to 6=excellent	ROADS – 2 RAILWAYS – 4 INLAND WATERWAY – n.a.

3. Environmental impacts		
Indicator	Definition	Values – your reply
Quality of vehicles	Number of vehicles failed in emission test per 100 tested vehicles [number/100 tested vehicles]	ROADS - in the year 2001 60.26 2002 44.32 2003 39.78 RAILWAYS – n.a. INLAND WATERWAY – n.a.
Emissions	Emissions of CO ₂ , non-methane volatile organic compound (NMVOC) and nitrogen oxide (NO _x) per 10 ⁶ vehicle km [tonnes/10⁶ vehicle km.]	ROADS – in the year 2000: emissions of CO ₂ - 225.14 emissions of NMVOC – 1.74 emissions of NO _x – 1.79 ^{5/} RAILWAYS – n.a. INLAND WATERWAY – n.a.
Noise levels	Percentage of population exposed to road traffic noise levels above 55 Ldn dB ; and percentage of population exposed to rail noise above 55 LAeq dB. [%]	^{6/}
Land take	Land take by roads and railways as percentage of country surface. [%]	Land take by roads - 0.48 % Land take by railways – not available ^{7/}
Exposure	Exposure of urban population to daily mean SO ₂ concentrations of more than 125 mg/m ³ [in number of residents]	ROADS ^{8/} RAILWAYS – n.a. INLAND WATERWAY – n.a.

^{1/} Information on the structure of the passenger transport in the year 2002 concerning the following transport modes is provided below:

Road transport – 61.6%
Railway transport – 20.6%
Air transport – 17.7%.

^{2/} Information about persons injured in road accidents includes drivers and passengers on a bicycle, moped, motorcycle, passenger car, tram and commercial vehicle.

	2001	2002	2003
Persons injured - total	22,093	23,923	26,153
Drivers	11,686	13,188	14,878

Information about passenger kilometres in the passenger road transport refers to business subjects engaged in inter-urban passenger bus transport.

	Passenger km (in millions)		
	2001	2002	2003*
Road transport	3,478	3,557	3,716

* Provisional data.

^{3/} Passenger-kilometres include transport by the Croatian Railways and the Zagreb Electric Tram.

	Passenger km (in millions)		
	2001	2002	2003*
Railway transport	1,241	1,195	1,144

*Provisional data

	2001	2002
Persons injured in railway accidents - Total	60	63

^{4/} Information about percentage of injuries by the number of employees refers to the total number of *injuries at work* in the activity of transport, storage and communications. In the Republic of Croatia *injuries at work* include injuries while working, injuries during the journey to and from work. In the tables below you may find the number of employees and *injuries at work* in the activity of transport, storage and communications and also the total number of employees and *injuries at work* in the Republic of Croatia in the year 2002.

TRANSPORT, STORAGE AND COMMUNICATION

No. of employees	No. of injuries			No. of injuries by 100,000 employees in the activity		
	Total	At work	During the journey to or from work	Total	At work	During the journey to or from work
84,797	1,902	1,562	340	2,243	1,842	401

REPUBLIC OF CROATIA

No. of employees	No. of injuries			No. of injuries by 100,000 employees in the activity		
	Total	At work	During the journey to or from work	Total	At work	During the journey to or from work
1,328,983	21,184	17,677	3,507	1,594	1,330	263

^{5/} Information about emissions of CO₂, NMVOC and NO_x tonnes per 10⁶ vehicle km refers to road transport and other mobile sources and machinery.

^{6/} Previously systematic measurements of road and traffic noise were not available. In connection with the new Croatian "Law on noise protection" (NN 20/03), a statute on noise maps and action plans has been prepared, following the instructions of Directive 2002/49/EC of the European Parliament and of the Council of June 2002 relating to the assessment and management of environmental noise. When the above-mentioned statute is implemented, replies will be available to these questions.

^{7/} Information is provided below on the length of railway lines and Croatia's land area:

	2001	2002
Length of railway lines, km	2,726	2,726
Land area, km ²		56 594

^{8/} Information about exposure of urban population to daily mean SO₂ concentrations refers to towns in the Republic of Croatia in which there were daily SO₂ concentrations of more than 125 µg/m³ in the period from 1999 to 2003:

1999 – Rijeka
2000 – Karlovac, Rijeka
2001 – Sisak, Rijeka
2002 – Sisak, Novska, Garešnica, Rijeka, Zadar
2003 – Karlovac, Sisak, Rijeka.

Source of information:

1. Ministry of the Sea, Tourism, Transport and Development:

Road Transport Directorate.
Railway Transport Directorate.
Inland Waterway Directorate.

2. Croatian National Institute of Occupational Medicine.

3. Institute for Medical Research and Occupational Medicine.

4. Central Bureau of Statistics.

5. Croatian Environment Agency.

6. Ministry of Health and Social Welfare, Sanitary Inspection Directorate.

HUNGARY

1. Legal and operational indicators		
Indicator	Definition	Values – your reply
Degree of competition	Degree of competition between the various operators. Rate: monopoly=0, moderate competition=1, strict competition=2	1
Public transport passenger trips	Percentage of public-transport trips to total trips (pedestrian, bicycles, public transport, private-cars) in the observed area. [%]	40 ¹
Normal fare [Euro]	Normal fare (Euro) for a month of public transport use	€21 ² €66.7 ³
Receipts from public sector for investments in infrastructure and rolling stock	Percentage of public receipts for investments in public transport infrastructure and rolling stock related to total investments [%]	100%
2. Safety and security indicators		
Indicator	Definition	Values – your reply
Traffic safety	Ratio of passenger injuries by 10 ⁶ passenger km [number/10⁶ pass. km]	0.31
Employee safety	Percentage of injuries by number of employees; percentage of criminal attacks on employees. [%]	Non-significant
Driver training	Number of in-service training hours per total number of drivers a year [training hours/total number of drivers]	5 hrs/yr/capita
Security at stops and stations/ freight terminals and transfer points	Measure of passengers'/users sense of security at the stops and stations/ freight terminals and transfer points. Rate 1=poor to 6=excellent	5 for passenger transport 4 for freight transport
Security in vehicles	Measure of passengers'/users sense of security in passenger and freight vehicles. Rate 1=poor to 6=excellent	5 for passenger transport 5 for freight transport

^{1/} Without pedestrian and bicycles.

^{2/} City monthly pass in Budapest for all transport modes.

^{3/} Rail monthly pass up to 50 km.

3. Environmental impacts		
Indicator	Definition	Values – your reply
Quality of vehicles	Number of vehicles failed in emission test per 100 tested vehicles [number/100 tested vehicles]	8%
Emissions	Emissions of CO ₂ , non-methane volatile organic compound (NMVOC) and nitrogen oxide (NO _x) per 10 ⁶ vehicle km [tonnes/10⁶ vehicle km.]	315
Noise levels	Percentage of population exposed to road traffic noise levels above 55 Ldn dB ; and percentage of population exposed to rail noise above 55 LAeq dB. [%]	Measures will be completed in 2007
Land take	Land take by roads and railways as percentage of country surface. [%]	0.6%
Exposure	Exposure of urban population to daily mean SO ₂ concentrations of more than 125 mg/m ³ [in number of residents]	Non-significant

IRELAND

1. Legal and operational indicators					
Indicator	Definition	Values – your reply			
Degree of competition	Degree of competition between the various operators. Rate: monopoly=0, moderate competition=1, strict competition=2	1			
Public transport passenger trips	Percentage of public-transport trips to total trips (pedestrian, bicycles, public transport, private-cars) in the observed area. [%]	Work			
		Bus	Rail	Total	
		No. of Trips	79,573	31,051	592,547
		Mode %	13	5	100
		School			
		Bus	Rail	Total	
		No. of Trips	78,017	9,155	326,000
Mode %	24	3	100		
		All Trips to Work and School			
		Bus	Rail	Total	
No. of Trips		157,590	40,206	918,547	
Mode %		17	4	100	

Normal fare [Euro]	Normal fare (Euro) for a month of public transport use	n.a.
Receipts from public sector for investments in infrastructure and rolling stock	Percentage of public receipts for investments in public transport infrastructure and rolling stock related to total investments [%]	<p>From 01/01/2000 to 31/12/2003 investment in public transport, (rolling stock & infrastructure) as a percentage of the total investment in the economic and social infrastructure programme was 14%.</p> <p>From 01/01/2000 to 31/12/2003 investment in public transport, (rolling stock & infrastructure) as a percentage of investment in both roads and public transport was 35%.</p>
2. Safety and security indicators		
Indicator	Definition	Values – your reply
Traffic safety	Ratio of passenger injuries by 10 ⁶ passenger km [number/10⁶ pass. km]	○ 259 / 34.7m
Traffic safety	Ratio of passenger injuries by 10 ⁶ passenger km [number/10⁶ pass. km]	○ 259 / 34.7m
Employee safety	Percentage of injuries by number of employees; percentage of criminal attacks on employees. [%]	○ 310 / 5529 ○ 8 / 5529
Driver training	Number of in-service training hours per total number of drivers a year [training hours/total number of drivers]	○ 7,500 / 430
Security at stops and stations/ freight terminals and transfer points	Measure of passengers'/users sense of security at the stops and stations/ freight terminals and transfer points. Rate 1=poor to 6=excellent	○ 5 for Intercity services ○ 4 for Suburban services
Security in vehicles	Measure of passengers'/users sense of security in passenger and freight vehicles. Rate 1=poor to 6=excellent	n.a.

3. Environmental impacts						
Indicator	Definition	Values – your reply				
Quality of vehicles	Number of vehicles failed in emission test per 100 tested vehicles [number/100 tested vehicles]			Commercial Vehicles	2.05%	
				Cars (Petrol)	3.78%	
				Cars (Diesel)	1.36%	
Emissions	Emissions of CO ₂ , non-methane volatile organic compound (NMVOC) and nitrogen oxide (NO _x) per 10 ⁶ vehicle km [tonnes/10⁶ vehicle km.]	2002	tonnes	10⁶ Vehicle km	10⁶ Vehicle km	tonnes/ 10⁶ Vehicle km
		CO₂ Emissions	10,868,658	48,500	38,000	224.10
		NMVOC Emissions	28,106	48,500	38,000	0.58
		NO_x Emissions	47,253	48,500	38,000	0.97
Noise levels	Percentage of population exposed to road traffic noise levels above 55 Ldn dB ; and percentage of population exposed to rail noise above 55 LAeq dB. [%]	Comprehensive noise data for Ireland is not currently available. It will be gathered as part of implementation of EU directive 2002/49/EC. Dublin City Council has conducted road noise mapping for the Dublin area which indicates that 42.5% of people are exposed to road noise above 55 dB L _{den} . No data is currently available for exposure to rail noise.				
Land take	Land take by roads and railways as percentage of country surface. [%]	n.a.				
Exposure	Exposure of urban population to daily mean SO ₂ concentrations of more than 125 mg/m ³ [in number of residents]	The national EPA Annual Air Quality Monitoring: Annual Report 2002, indicates that there were no SO ₂ monitoring locations which exceeded 125 µg/m ³ on a daily mean basis in 2002.				

LITHUANIA

1. Legal and operational indicators		
Indicator	Definition	Values – your reply
Degree of competition	Degree of competition between the various operators. Rate: monopoly=0, moderate competition=1, strict competition=2.	Roads: 2. Inland Waterways: 2. Railways: 1. Note: At present, five Lithuanian companies have licenses for passenger and freight transportation, and JSC Lithuanian Railways is among them. One more company, public enterprise Narrow-Gauge Railway, has a license for passenger services. Currently, only JSC Lithuanian Railways provides passenger and freight services, while Narrow-gauge Railway is engaged in passenger transportation alone and does not offer competition to JSC Lithuanian Railways due to the nature of its activity (organization of conducted tours by narrow-gauge railway).
Public transport passenger trips	Percentage of public-transport trips to total trips (pedestrian, bicycles, public transport, private-cars) in the observed area. [%]	Roads: n.a. Railways: 1.87 per cent of the total number of passengers carried by public transport.
Normal fare [Euro]	Normal fare (Euro) for a month of public transport use	Roads: €15 for a month (general for bus, trolleybus), €12 for working days per month (general for bus, trolleybus), €10 for a month (general for bus, trolleybus), €8 for working days per month (general, just for bus, just for trolleybus). Railways: €72 a month for terminal ticket Vilnius – Kaunas (return trip) and €69 a month for the terminal ticket Vilnius-Turmantas (return trip).
Receipts from public sector for investments in road infrastructure	Percentage of public receipts for investments in public transport infrastructure and rolling stock related to total investments [%]	As infrastructure is State owned there is no private investment. Investments in road transport infrastructure were €85.3 million in 2003 year. It is 18.65% of total investment. Passenger transportation by rail incurs losses and the income gained from passenger services does not cover the losses incurred. In 2003, a total of LTL 382.6 million (€110.8 million.) was used for investments, of which LTL 294.9 million (€85.4 million) or 77.1% for infrastructure modernization and development and LTL 30.7 million (€8.9 million) or 8% for rolling stock, of which LTL 23.5 million (€6.8 million) for passenger rolling stock.

2. Safety and security indicators		
Indicator	Definition	Values – your reply
Traffic safety	Ratio of passenger injuries by 10 ⁶ passenger km [number /10⁶ pass. km]	0.13 (2002 year).
Employee safety	Percentage of injuries by number of employees; percentage of criminal attacks on employees. [%]	In 2003 0.26% injuries were recorded; In 2002 accidents recorded at work were due to criminal actions compared to the total number of accidents at work 2.6*.
Driver training	Number of in-service training hours per total number of drivers a year [training hours /total number of drivers]	In 2003, the number of in-service training hours was as follows: A total of 72 training hours per shunting train driver, each freight train driver, and each passenger train driver; A total of 36 training hours per motorcar operator, and each rail car driver.
Security at stops and stations/freight terminals and transfer points	Measure of passengers'/users sense of security at the stops and stations/freight terminals and transfer points. Rate 1=poor to 6=excellent	In 2003, no accidents involving passengers or employees at the stops or stations, freight terminals or transfer points were recorded. 6.
Security in vehicles	Measure of passengers'/users sense of security in passenger and freight vehicles. Rate 1=poor to 6=excellent	In 2003, no accidents involving passengers or employees on passenger- or freight rolling stock were recorded. 6.

3. Environmental impacts		
Indicator	Definition	Values – your reply
Quality of vehicles	Number of vehicles failed in emission test per 100 tested vehicles [number/100 tested vehicles]	12/100. Locomotives or diesel trains are not tested.
Emissions	Emissions of CO ₂ , non-methane volatile organic compound (NMVOC) and nitrogen oxide (NO _x) per 10 ⁶ vehicle km [tones/10⁶ vehicle km.]	CO ₂ -434; NMVOC-1.9; NO _x -3.7
Noise levels	Percentage of population exposed to road traffic noise levels above 55 Ldn dB ; and percentage of population exposed to rail noise above 55 Laeq dB. [%]	n.a.
Land take	Land take by roads and railways as percentage of country surface. [%]	Land take approximately 0.9%.
Exposure	Exposure of urban population to daily mean SO ₂ concentrations of more than 125 mg/m ³ [in number of residents]	Never been.

* Accidents at work occurred due to criminal actions compared to the total number of accidents at work in 2002.

POLAND

1. Legal and operational indicators		
Indicator	Definition	Values – your reply
Degree of competition	Degree of competition between the various operators. Rate: monopoly=0, moderate competition=1, strict competition=2	1
Public transport passenger trips	Percentage of public-transport trips to total trips (pedestrian, bicycles, public transport, private-cars) in the observed area. [%]	n.a.
Normal fare [Euro]	Normal fare (Euro) for a month of public transport use	approx. 14.00 ^{1/}
Receipts from public sector for investments in infrastructure and rolling stock	Percentage of public receipts for investments in public transport infrastructure and rolling stock related to total investments [%]	29% ^{2/}
2. Safety and security indicators		
Indicator	Definition	Values – your reply
Traffic safety	Ratio of passenger injuries by 10 ⁶ passenger km [number/10⁶ pass. km]	1.19 ^{3/}
Employee safety	Percentage of injuries by number of employees; percentage of criminal attacks on employees. [%]	n.a.
Driver training	Number of in-service training hours per total number of drivers a year [training hours/total number of drivers]	n.a.
Security at stops and stations/ freight terminals and transfer points	Measure of passengers'/users sense of security at the stops and stations/ freight terminals and transfer points. Rate 1=poor to 6=excellent	3 ^{4/}
Security in vehicles	Measure of passengers'/users sense of security in passenger and freight vehicles. Rate 1=poor to 6=excellent	3 ^{4/}

3. Environmental impacts		
Indicator	Definition	Values – your reply
Quality of vehicles	Number of vehicles failed in emission test per 100 tested vehicles [number/100 tested vehicles]	n.a.
Emissions	Emissions of CO ₂ , non-methane volatile organic compound (NMVOC) and nitrogen oxide (NO _x) per 10 ⁶ vehicle km [tonnes/10⁶ vehicle km.]	n.a. ^{5/}
Noise levels	Percentage of population exposed to road traffic noise levels above 55 Ldn dB ; and percentage of population exposed to rail noise above 55 LAeq dB. [%]	Approx. 42-44%; 2.6% ^{6/}
Land take	Land take by roads and railways as percentage of country surface. [%]	2.98%
Exposure	Exposure of urban population to daily mean SO ₂ concentrations of more than 125 mg/m ³ [in number of residents]	N/A

^{1/} Cost of monthly ticket in Warsaw.

^{2/} Data for 2002.

^{3/} Data for 2002 (refers both to passengers and drivers).

^{4/} Estimation - there are no reliable research studies in this regard.

^{5/} Transport related emission: CO₂ – 30121 million tonnes, NMVOC – 147 million tonnes, NO_x – 291 million tonnes (data for 2001); data for traffic volume measured in vehicle km is not available.

^{6/} Data for 1998.