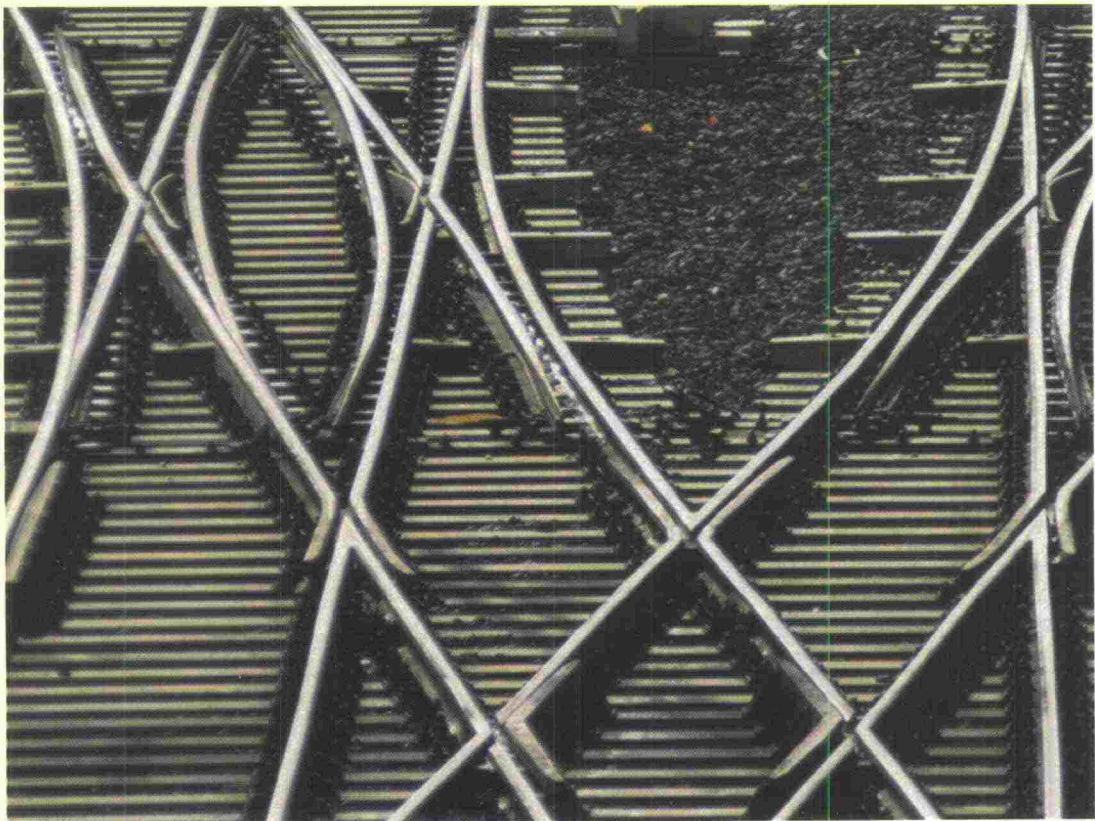


FINNISH RAILWAY STATISTICS 2004



FINNISH RAILWAY STATISTICS 2004

FOREWORD

The present publication is an English version of the Finnish Railway Statistics 2004. It contains statistical data on railway network and railway traffic in Finland. The previous English version of the Finnish Railway Statistics was published in 1999.

This edition has been prepared by Harri Lahelma, Finnish Rail Administration and Vesa Juuti, VR-Group Ltd.

In Finland, the Finnish State Railways was transformed into a joint stock company in 1995. At the same time, the Finnish Rail Administration (RHK) was established to operate under the Ministry of Transport and Communications. RHK is in charge of maintaining and developing the rail network and also carries the responsibility for rail traffic safety. The activities of the former Finnish State Railways are continued by the VR-Group Ltd and its subsidiaries, of which VR Ltd (VR) runs the railway transportation.

Helsinki, August 2004

Ossi Niemimuukko
Director General

CONCEPTIONS

Length of line	= total length of main and secondary lines excluding sidings
Track length	= total length of main and secondary tracks including sidings
Train-kilometre	= distance of one kilometre covered by the train
Gross ton-kilometres	= total gross weight of the locomotive and the carrying stock of a train in tons X corresponding train-kilometres
Gross ton-kilometres hauled	= gross weight of the carrying stock of a train in tons X corresponding train-kilometres
Vehicle-axle-kilometres	= number of axles of the vehicles of a train X corresponding train-kilometres
Locomotive-kilometre	= distance of one kilometre covered by the locomotive
Passenger-kilometre	= distance of one kilometre covered by the passenger
Tonne-kilometre	= one conveyance kilometre of one ton of goods

The following symbols have been used in the tables:

"	= repetition
-	= nothing to indicate
0 or 0.0	= the quantity is smaller than half of the unit used
..	= information not available
.	= category not applicable

A horizontal line drawn across a time series shows substantial breaks in the homogeneity of a series.



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THE YEAR 2003 IN BRIEF

Line ¹⁾ and transport stock ²⁾				
		2003	2002	Change, %
Length of line	km	5 851	5 850	0.0
of which electrified	km	2 400	2 400	0.0
Track length	km	8 707	8 736	-0.3
Tractive stock strength	number	749	748	0.1
Hauled stock in commercial traffic				
Passenger stock	number	1 060	1 077	-1.6
Freight stock	number	11 324	11 528	-1.8
Railway operating points	number	376	371	1.3
Buildings				
Finnish Rail Administration	number	2 439	2 639	
VR	number	396	409	
Finnish Rail Administration	1 000 m ³	1 259	1 395	
VR	1 000 m ³	3 733	3 694	

Train traffic ²⁾				
		2003	2002	Change, %
Train-km	1 000	48 060	47 180	1.9
Passenger traffic		31 275	30 467	2.7
Freight traffic		16 785	16 713	0.4
Gross tonne-km	1 000 000	34 135	32 759	4.2
Locomotive-km	1 000	66 427	65 576	1.3
Energy consumption in train traffic				
Electricity	million kWh	563	537	4.8
Diesel oil	million l	50.5	51.2	-1.4

Passenger traffic ²⁾				
		2003	2002	Change, %
Journeys	1 000	59 909	57 695	3.8
Passenger-km	million	3 338	3 318	0.6

¹⁾ Lines owned by the Finnish Rail Administration.

²⁾ Data relating to VR.



Freight traffic ²⁾

		2003	2002	Change %
Freight volumes	1 000 tons	43 503	41 679	4.4
Domestic		24 980	24 695	1.2
International		18 523	16 984	9.1
Tonne-km	million	10 047	9 664	4.0
Domestic		6 760	6 695	1.0
International		3 287	2 969	10.7

Rail traffic volume indice ²⁾ (1990 = 100)

	2003	2002
Passenger traffic	114	111
Freight traffic	132	126
Total rail traffic	123	118

Railway accidents ²⁾

	2003	2002
Number of railway accidents	7	6
Passengers		
Killed	0	0
Seriously injured	1	1



1 LINE AND TRANSPORT STOCK ^{1) 2)}

1.1 LINE AND SUPERSTRUCTURE

Rail gauge	1.524 m	2003
Length of line	km	5 851
Single track	km	5 344
of which electrified	%	91.3
Double track or more	km	1 893
of which electrified	%	8.7
of which electrified	km	507
Classification of main lines ³⁾		
Line category A	Track-km	736
Line category B	Track-km	1 095
Line category C	Track-km	3 079
Line category D	Track-km	1 546
Rails		
Track length	Track-km	8 707
Main tracks	Track-km	6 248
of which electrified	%	71.8
Secondary tracks	Track-km	208
of which electrified	%	2.4
Sidings	Track-km	2 250
of which electrified	%	25.8
Switches	Number	6 201
Crossings	Number	60
Tunnels	Number	42
	Metres	25 284

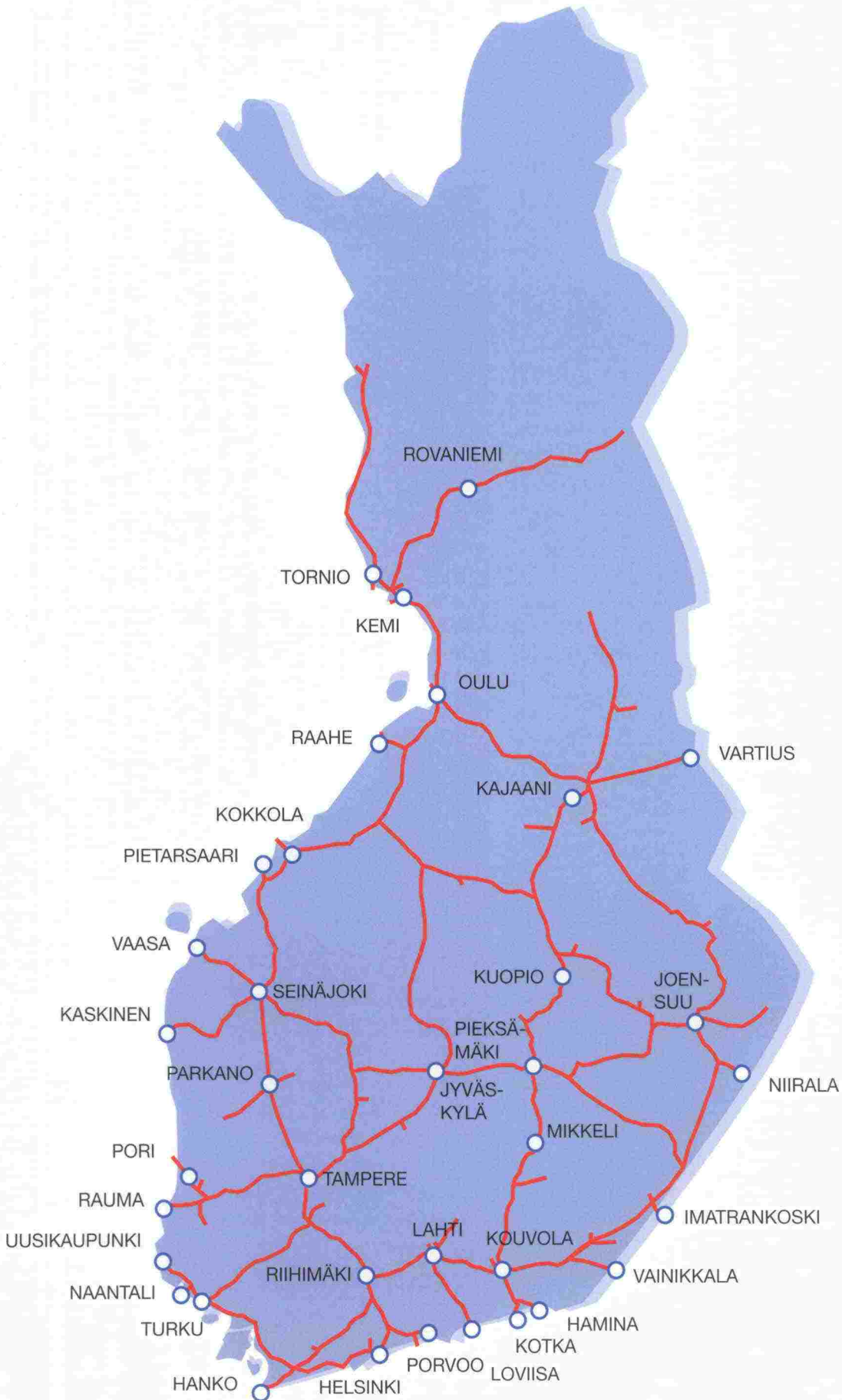
¹⁾ At the end of 2003.

²⁾ Lines owned by the Finnish Rail Administration.

³⁾ Line category	Rails	kg/m	Ballast
A	K30	"	gravel
B	K43, K60, 54E1, 60E1	"	gravel, macadam
C	54E1, 60E1	"	macadam
D	54E1, 60E1	"	macadam



1.2 RAIL NETWORK



1.3 SECTIONS OF LINE ACCORDING TO DATE WHEN OPENED FOR TRAFFIC

Section of line	Opened for traffic	km	Section of line	Opened for traffic	km
Helsinki – Hämeenlinna	17.3.1862	107	Kajaani – Kontiomäki	1.1.1923	26
Pasila – Sörnäinen	6.2.1863	3	Turku – Mynämäki	1.9.1923	30
Riihimäki – Lahti	1.11.1869	59	Raisio – Naantali	16.11.1923	6
Lahti – Vesijärvi	1.11.1869	3	Iisalmi – Kiuruvesi	1.12.1923	34
Lahti – Vainikkala Border	11.9.1870	155	Mynämäki – Kalaranta	1.9.1924	36
Hanko – Hyvinkää ¹⁾	8.10.1873	149	Kiuruvesi – Pyhäsalmi	1.1.1925	32
Porvoo – Kerava ²⁾	16.7.1874	33	Pyhäsalmi – Haapajärvi	1.8.1925	33
Turku – Toijala	22.6.1876	128	Haapajärvi – Ylivieska	1.12.1925	55
Tampere – Hämeenlinna	22.6.1876	80	Karunki – Korpikylä	1.1.1926	9
Turku – Turku Harbour	22.6.1876	3	Paltamo (Kiehimä) – Vuokatti	16.10.1926	42
Tampere – Vaasa (Nikolainkaupunki)	29.9.1883	306	Vuokatti – Sotkamo (Hirvenniemi)	16.10.1926	6
Simola – Lappeenranta	1.8.1885	18	Korpikylä – Aavasaksa	1.11.1927	34
Seinäjoki – Oulu	1.11.1886	335	Oulu – Muhos	1.11.1927	36
Oulu – Toppila	1.11.1886	4	Joensuu – Sysmäjärvi	1.12.1927	44
Kokkola – Ykspihlaja	1.11.1886	5	Vuokatti – Saviaho	23.1.1928	23
Pännäinen – Leppäluoto	1.11.1887	14	Sysmäjärvi – Outokumpu	15.5.1928	3
Kouvola – Kuopio	1.10.1889	273	Aavasaksa – Kaulinranta (Kauliranta)	1.9.1928	7
Suonenjoki – Iisvesi	1.10.1889	6	Muhos – Utajärvi	1.12.1928	22
Kouvola – Kotka	1.10.1890	54	Lohja – Tytyri	21.12.1928	3
Kouvola – Kymintehdas	1.10.1892	9	Vilppula – Mänttä	1.1.1929	8
Imatrankoski Border – Imatrankoski (Imatra)	1.11.1892	5	Saviaho – Rumo	1.2.1929	17
Vaasa (Nikolainkaupunki) – Vaskiluoto	1.8.1893	4	Utajärvi – Vaala	16.10.1929	34
Joensuu – Niirala Border	1.11.1894	70	Rumo – Nurmes	1.11.1929	44
Helsinki – Eteläsatama	16.12.1894	4	Vaala – Paltamo (Kiehimä)	1.12.1930	57
Eteläsatama – Katajanokka	1.10.1895	1	Markkula – Kaupinkangas	15.5.1931	10
Imatrankoski (Imatra) – Vuoksenniska	16.10.1895	7	Kemi – Ajos	1.11.1931	9
Tampere – Pori	1.11.1895	134	Lahti – Jyränkö	1.1.1932	35
Kokemäki (Peipohja) – Rauma ³⁾	15.4.1897	47	Jyränkö – Heinola	22.5.1932	2
Haapamäki – Jyväskylä	1.11.1897	77	Pori – Niinisalo	16.12.1933	64
Jyväskylä – Suolahti	1.11.1898	40	Rovaniemi – Kemijärvi	1.9.1934	83
Inkeroinen – Hamina ⁴⁾	5.10.1899	26	Lappeenranta – Imatra T (Tainionkoski)	1.10.1934	41
Pori – Mäntyluoto	1.11.1899	21	Niinisalo – Kairokoski (Parkano)	1.1.1935	37
Turku – Karjaa	1.11.1899	113	Imatra T (Tainionkoski) – Kaukopää	16.11.1935	3
Tuomioja (Lappi) – Raahe ⁵⁾	5.12.1899	28	Vuoksenniska (Rönkkä) – Simpele	1.11.1937	39
Raahe – Lapaluoto ⁵⁾	1.9.1900	6	Kairokoski – Virrat	1.11.1937	51
Kuopio – Iisalmi	1.7.1902	85	Hillo harbour line	1.12.1937	6
Pasila – Karjaa	1.9.1903	84	Toijala – Valkeakoski	1.9.1938	18
Tuira – Tornio	16.10.1903	129	Virrat – Haapamäki	15.11.1938	40
Iisalmi – Kajaani	16.10.1904	83	Kontiomäki – Hyrynsalmi	1.12.1939	46
Savonlinna – Parikkala	1.2.1908	60	Varkaus – Vihtari	1.12.1939	65
Laurila – Rovaniemi	16.10.1909	107	Vihtari – Viinijärvi	22.4.1940	36
Joensuu – Lieksa	10.9.1910	104	Haukipudas – Martinniemi	1.10.1940	5
Lieksa – Nurmes	16.10.1911	56	Raippo – Melkkola	25.8.1940	2
Kiukainen – Kauttua ³⁾	1.2.1913	13	Kemijärvi – Kelloselkä	1.11.1942	79
Seinäjoki – Kristiinankaupunki	1.8.1913	112	Suolahti – Äänekoski	16.11.1942	7
Perälä – Kaskinen	1.8.1913	24	Simpele – Parikkala	1.12.1947	19
Huutokoski – Varkaus	1.11.1914	18	Kovjoki – Uusikaarlepyy	10.4.1949	8
Pieksämäki – Savonlinna	1.11.1914	106	Orivesi – Jämsä	15.7.1950	56
Jyväskylä – Pieksämäki	1.6.1918	79	Jämsä – Jämsänkoski	1.7.1951	4
Tornio – Tornio Border	1.4.1919	2	Kauppi – Ylihärmä	1.10.1951	3
Tornio – Kukkola	24.3.1922	17	Jämsä – Kaipola (Perälänlahti)	1.8.1952	7
Kukkola – Karunki	1.1.1923	10	Hyrynsalmi – Laaja	1.12.1952	18

1.3 SECTIONS OF LINE ACCORDING TO DATE WHEN OPENED FOR TRAFFIC

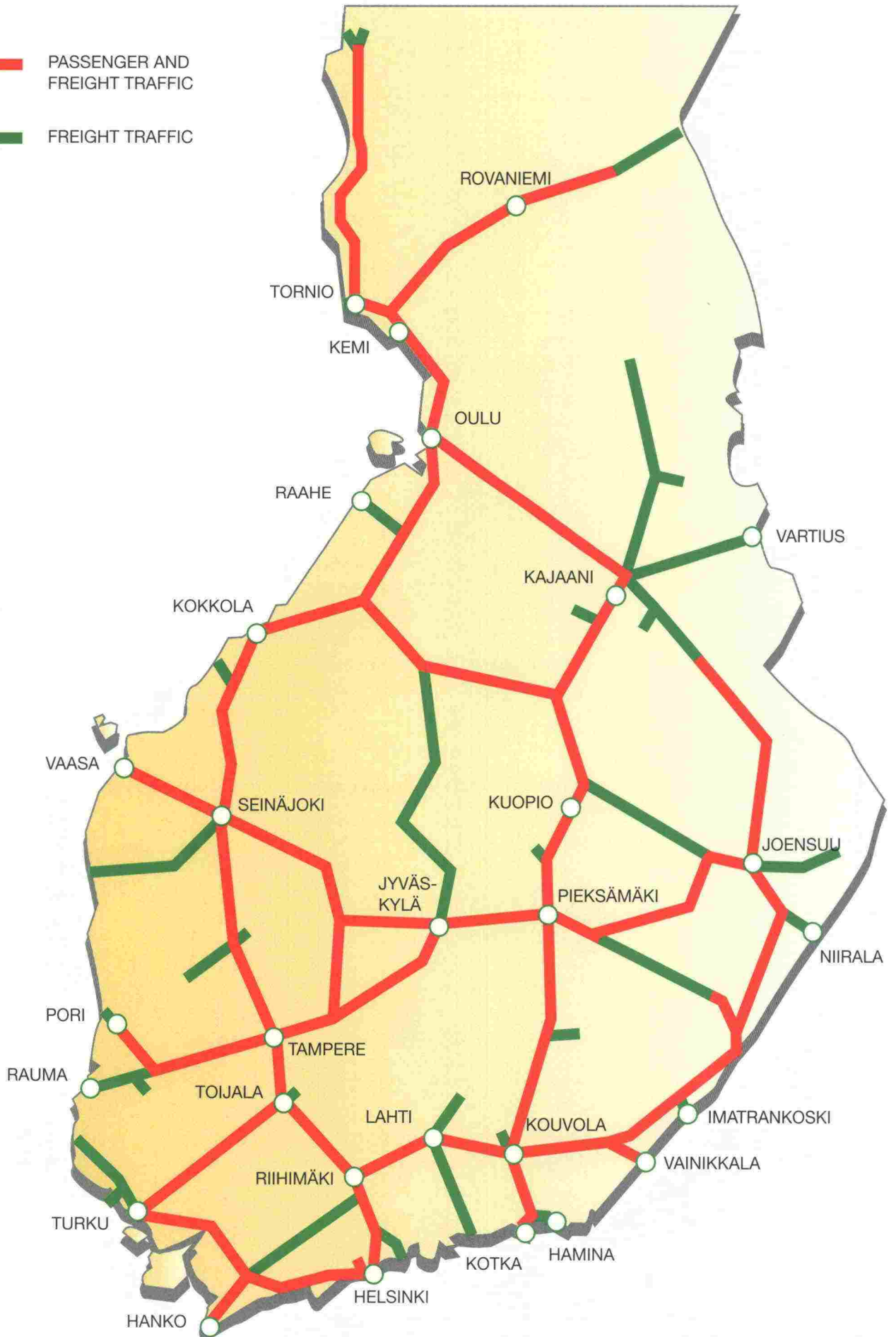
Section of line	Opened for traffic	km	Section of line	Opened for traffic	km
Murtomäki – Otanmäki	1.11.1953	25	Tuupovaara – Herajärvi	1.8.1963	9
Joutjärvi – Mukkula	1.2.1954	7	Kaulinranta (Kauliranta) – Pello	3.1.1964	42
Äänekoski – Saarijärvi	1.4.1955	30	Pello – Sieppijärvi	1.12.1965	43
Haapajärvi – Muuras	16.12.1954	23	Säkäniemi – Puhos	1.12.1965	28
Laaja – Pesiökylä	16.9.1955	10	Sieppijärvi – Kolari	1.12.1966	21
Pesiökylä – Ämmänsaari	1.12.1955	18	Puhos – Parikkala	1.12.1966	65
Muuras – Pihtipudas	1.10.1956	25	Herajärvi – Ilomantsi	1.8.1967	18
Siiinjärvi – Sänkimäki	15.11.1956	15	Kolari – Äkäsjoki	1.9.1967	17
Pesiökylä – Kovajärvi	15.11.1956	11	Juankoski – Luikonlahti	1.11.1968	25
Joensuu – Keskijärvi	15.11.1957	31	Seinäjäki – Parkano (Uusi-Parkano)	1.1.1970	84
Kovajärvi – Vääkiö	15.11.1957	10	Luikonlahti – Sysmäjärvi	1.1.1970	31
Sänkimäki – Juankoski	15.11.1957	27	Parkano – Lielähti	1.1.1971	70
Keskijärvi – Tuupovaara	15.9.1958	13	Olli – Sköldvik	14.2.1972	11
Saarijärvi – Enonjärvi	1.1.1959	29	Vuonos Branch Line	1.3.1972	3
Pihtipudas – Seläntaus	15.1.1959	7	Niesa – Rautuvaara	1.4.1973	10
Vääkiö – Leino	15.1.1959	20	Vuokatti – Lahnaslampi	1.2.1974	12
Leino – Taivalniska	1.11.1959	39	Huopalahti – Martinlaakso	1.6.1975	8
Enonjärvi – Kannonkoski	1.11.1959	8	Kontiomäki – Vartius Border	1.11.1976	93
Kannonkoski – Varanen	1.1.1960	11	Jämsänkoski – Jyväskylä	1.11.1977	53
Seläntaus – Keitelelohja	15.2.1960	12	Mynttilä – Ristiina	22.11.1979	21
Lahti – Loviisa Harbour (Valko) ⁶⁾	2.5.1960	77	Juurikorpi – Salmenkylä	1.2.1984	14
Varanen – Keitelelohja	1.10.1960	19	Mäntyluoto – Tahkoluoto	1.2.1984	11
Porvoo – Porvoo Centre	28.5.1961	1	Lautiosaari – Eljäjärvi	31.10.1985	8
Taivalniska – Taivalkoski	1.12.1961	2	Hovinsaari – Mussalo	1.3.1989	5
Luumäki – Lappeenranta	15.9.1962	27	Martinlaakso – Vantaankoski	2.9.1991	1

- 1) Purchased by the State 1. 5.1875
- 2) " " " " 1.10.1917
- 3) " " " " 1. 7.1950
- 4) " " " " 1. 1.1916
- 5) " " " " 1. 3.1926
- 6) " " " " 1. 1.1959



1.4 OPERATIONS ON THE RAILWAY NETWORK

-  PASSENGER AND FREIGHT TRAFFIC
-  FREIGHT TRAFFIC



1.5 DISTANCES BETWEEN CERTAIN STATIONS, KM

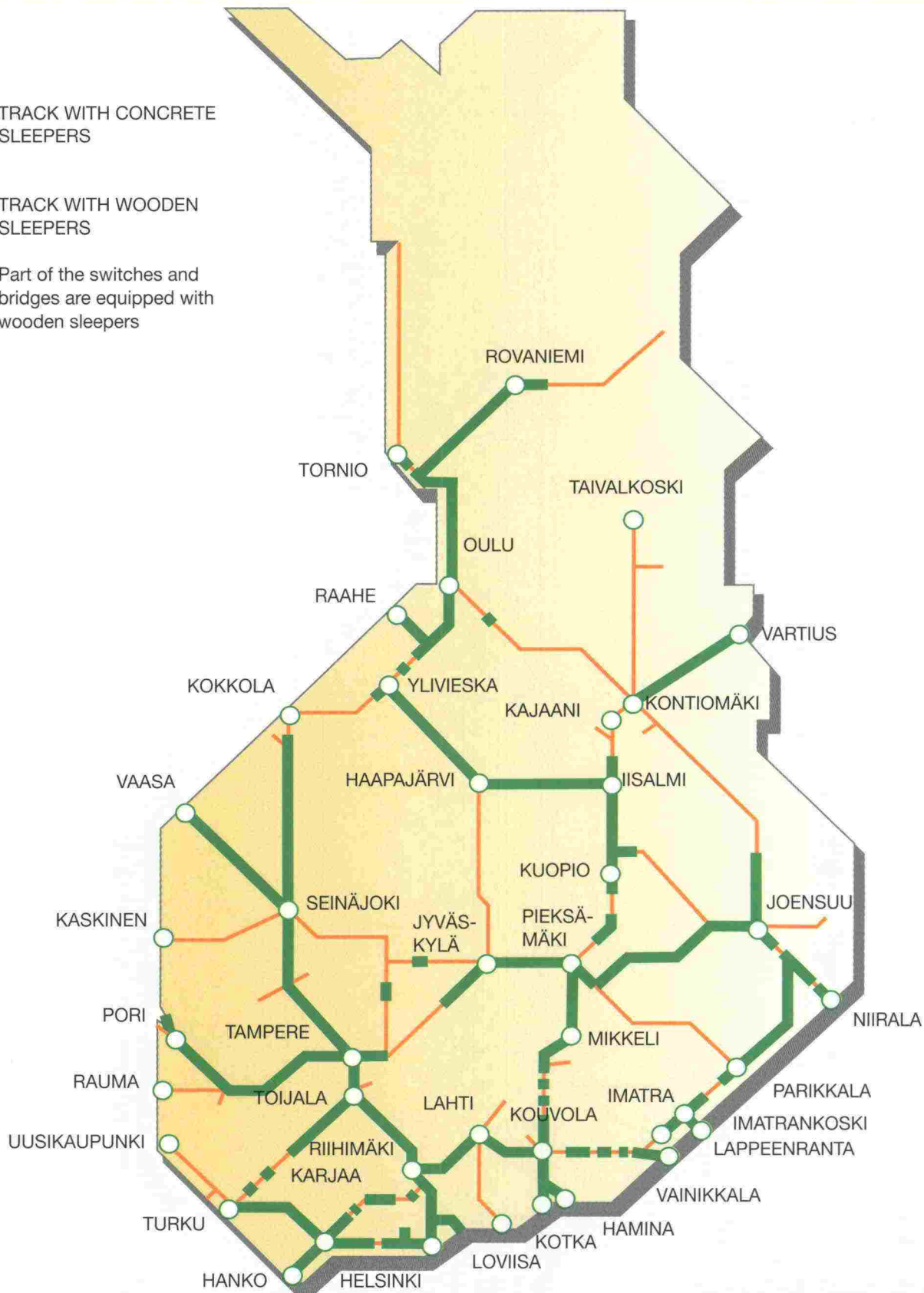


1.6 TRACK SUPERSTRUCTURE

Tracks with concrete sleepers

1990		1995		1999		2000		2001		2002		2003	
km	%	km	%	km	%	km	%	km	%	km	%	km	%
1 050	17	1 400	22	2 479	39	2 827	44	3 118	48	3 363	52	3 533	55

- TRACK WITH CONCRETE SLEEPERS
 - TRACK WITH WOODEN SLEEPERS
- Part of the switches and bridges are equipped with wooden sleepers



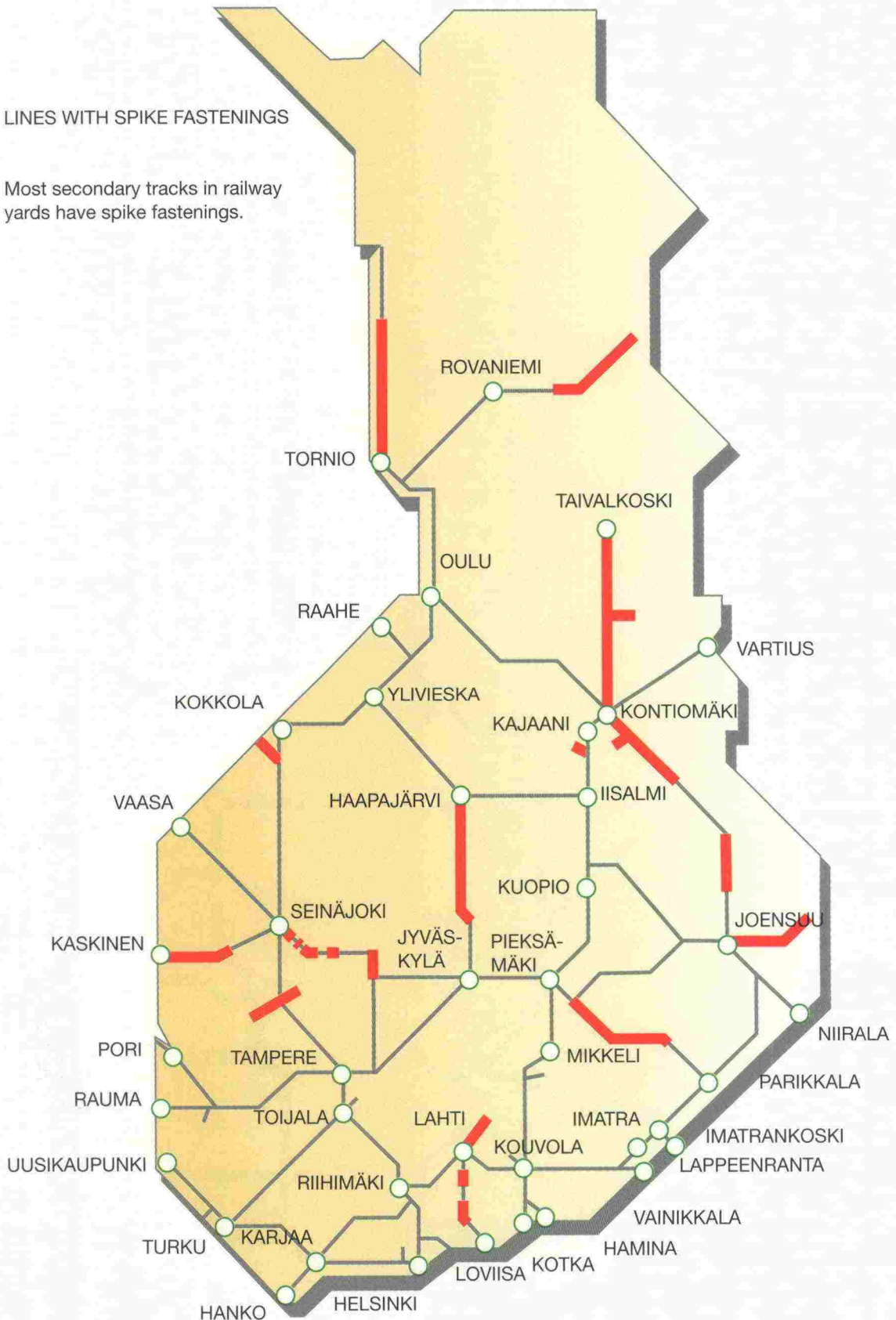
1.6 TRACK SUPERSTRUCTURE

Lines with spike fastenings

1990		1995		1999		2000		2001		2002		2003	
km	%	km	%	km	%	km	%	km	%	km	%	km	%
2 300	37	1 970	31	1 400	22	1 340	21	1 290	20	1 190	19	1 180	18

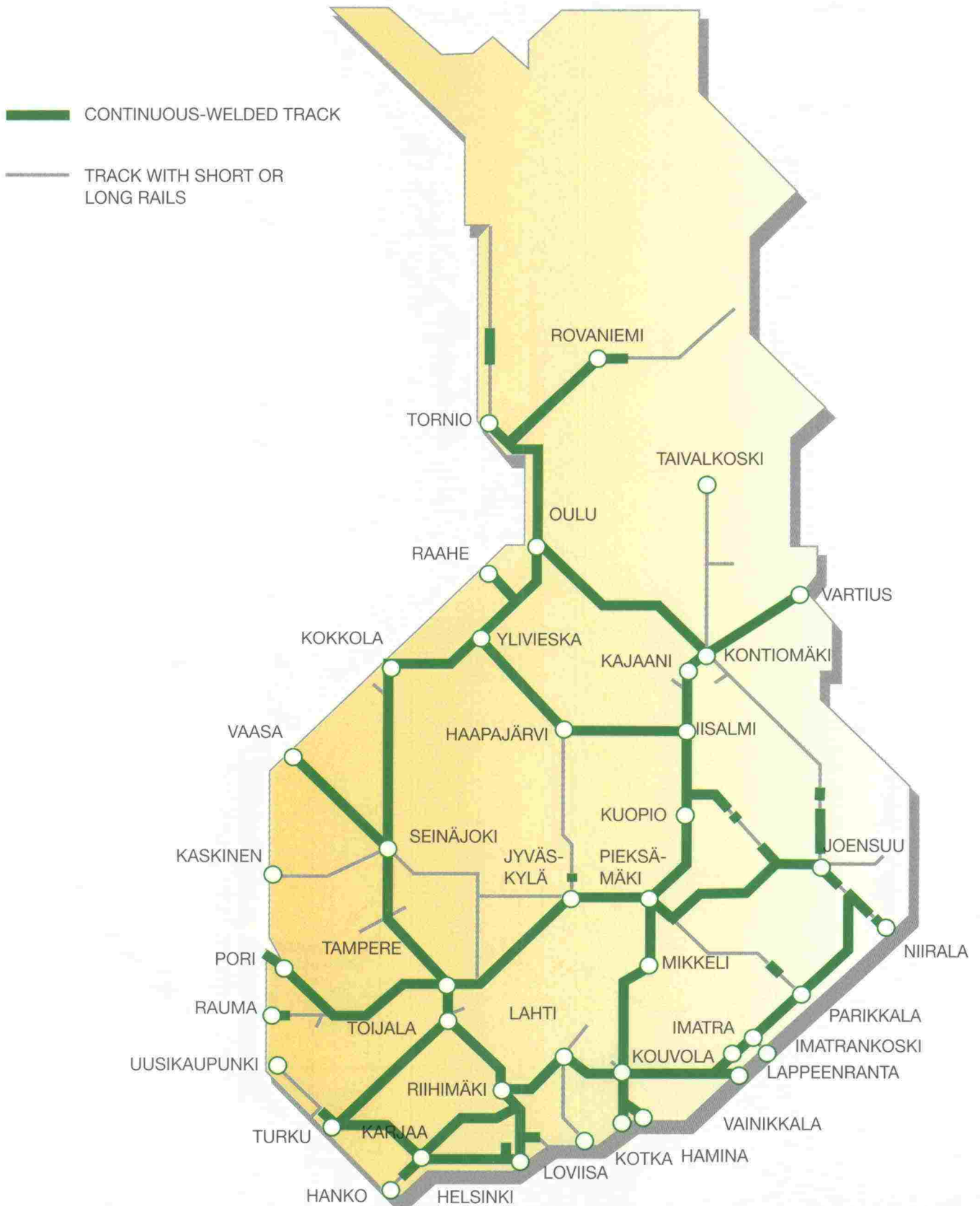
 LINES WITH SPIKE FASTENINGS

Most secondary tracks in railway yards have spike fastenings.

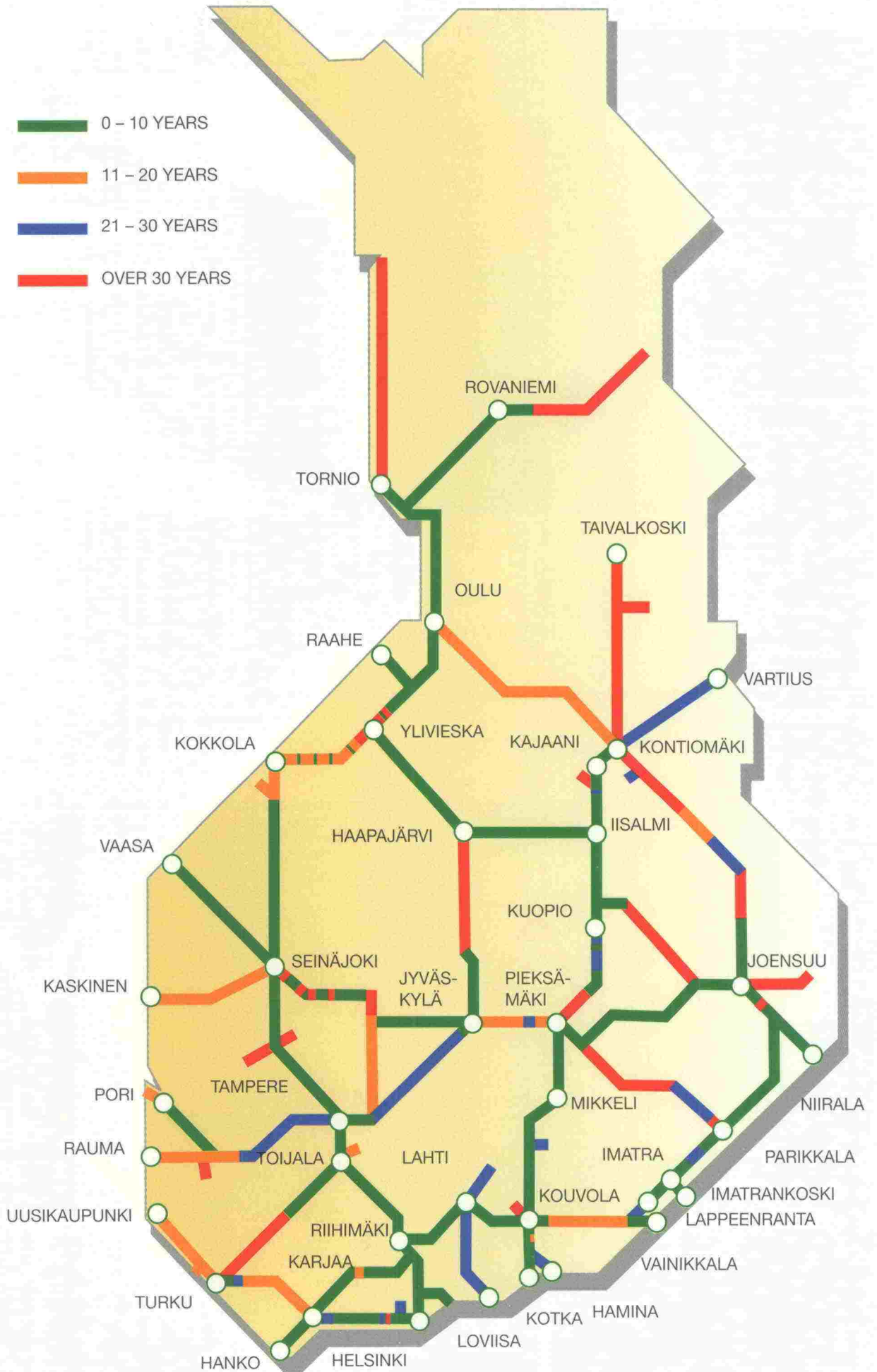


1.6 TRACK SUPERSTRUCTURE

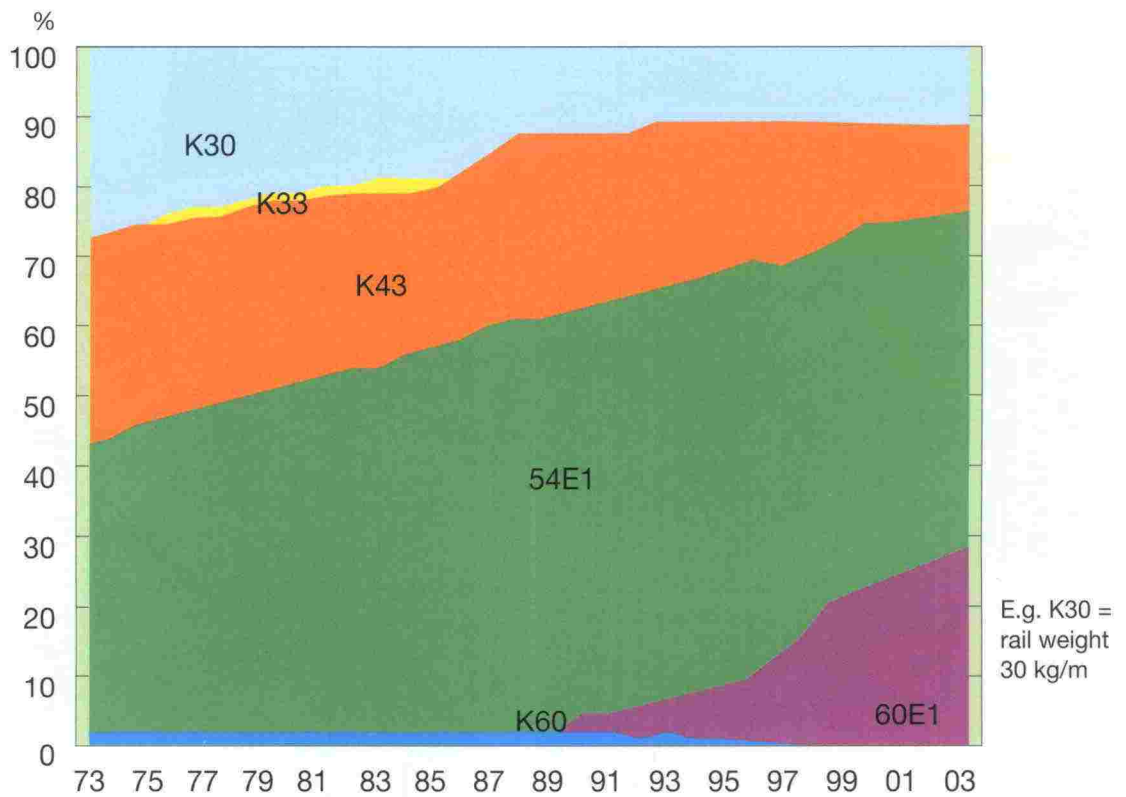
1990		1995		1999		2000		2001		2002		2003	
km	%	km	%	km	%	km	%	km	%	km	%	km	%
3 430	55	3 660	58	4 220	66	4 245	66	4 307	67	4 338	67	4 371	68



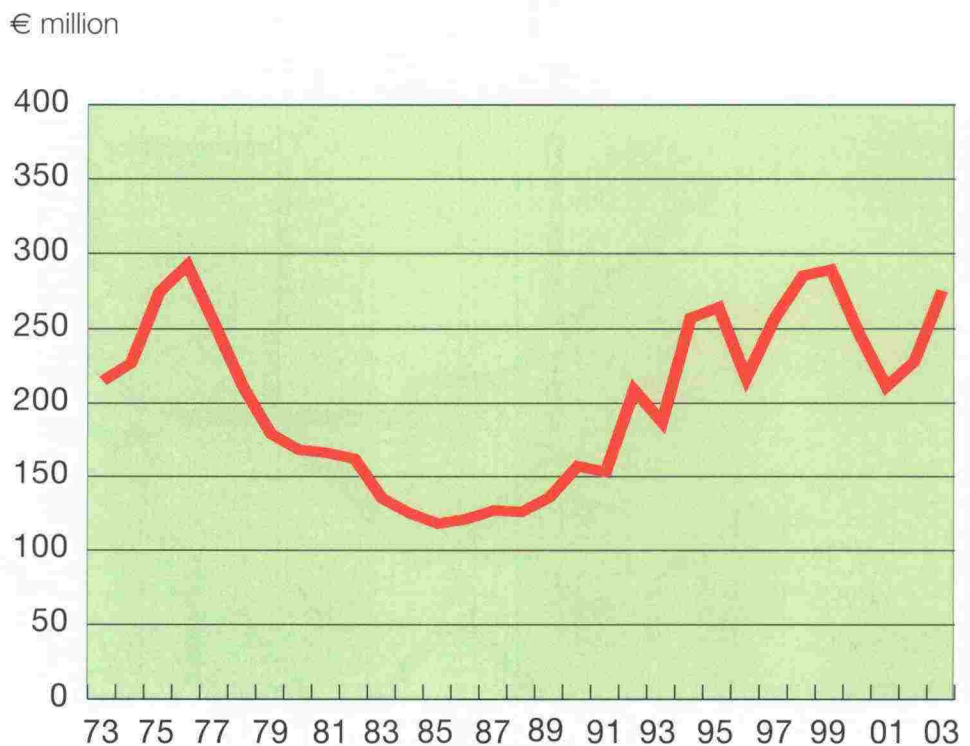
1.7 AGE OF TRACK SUPERSTRUCTURE



1.8 RAILS ON MAIN LINES IN 1973 - 2003



1.9 INVESTMENTS IN TRACK CONSTRUCTION AND MAINTENANCE IN 1973 - 2003 ¹⁾

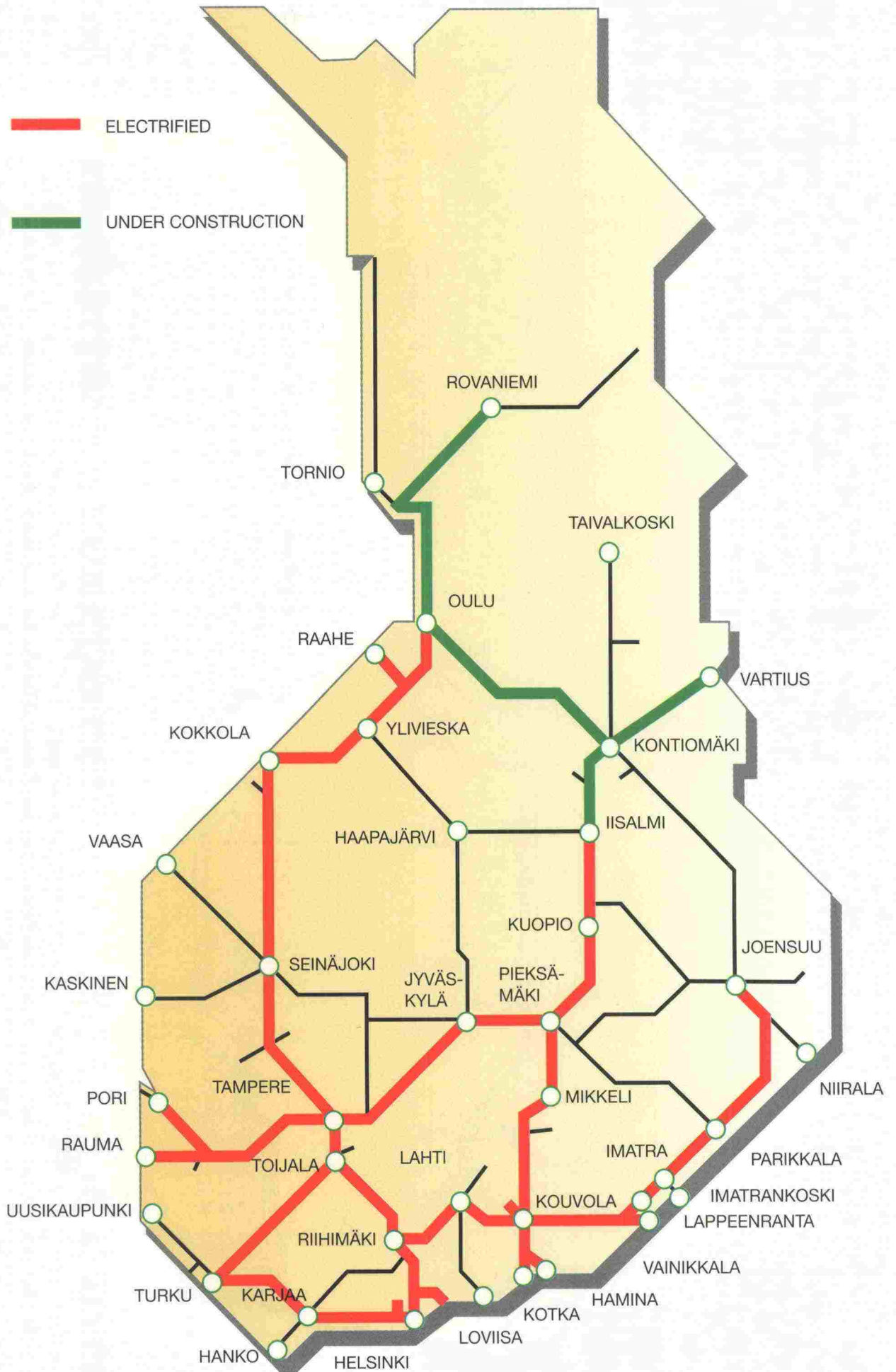


¹⁾ At fixed 2003 prices.




1.10 ELECTRIFIED LINES

- █ ELECTRIFIED
- █ UNDER CONSTRUCTION



1.11 SAFETY EQUIPMENT AND ITS AGE

SAFETY EQUIPMENT

 BLOCK SYSTEM AND CENTRALIZED TRAFFIC CONTROL

 BLOCK SYSTEM

 AUTOMATIC TRAIN PROTECTION

 SEPARATE SAFETY INSTALLATIONS

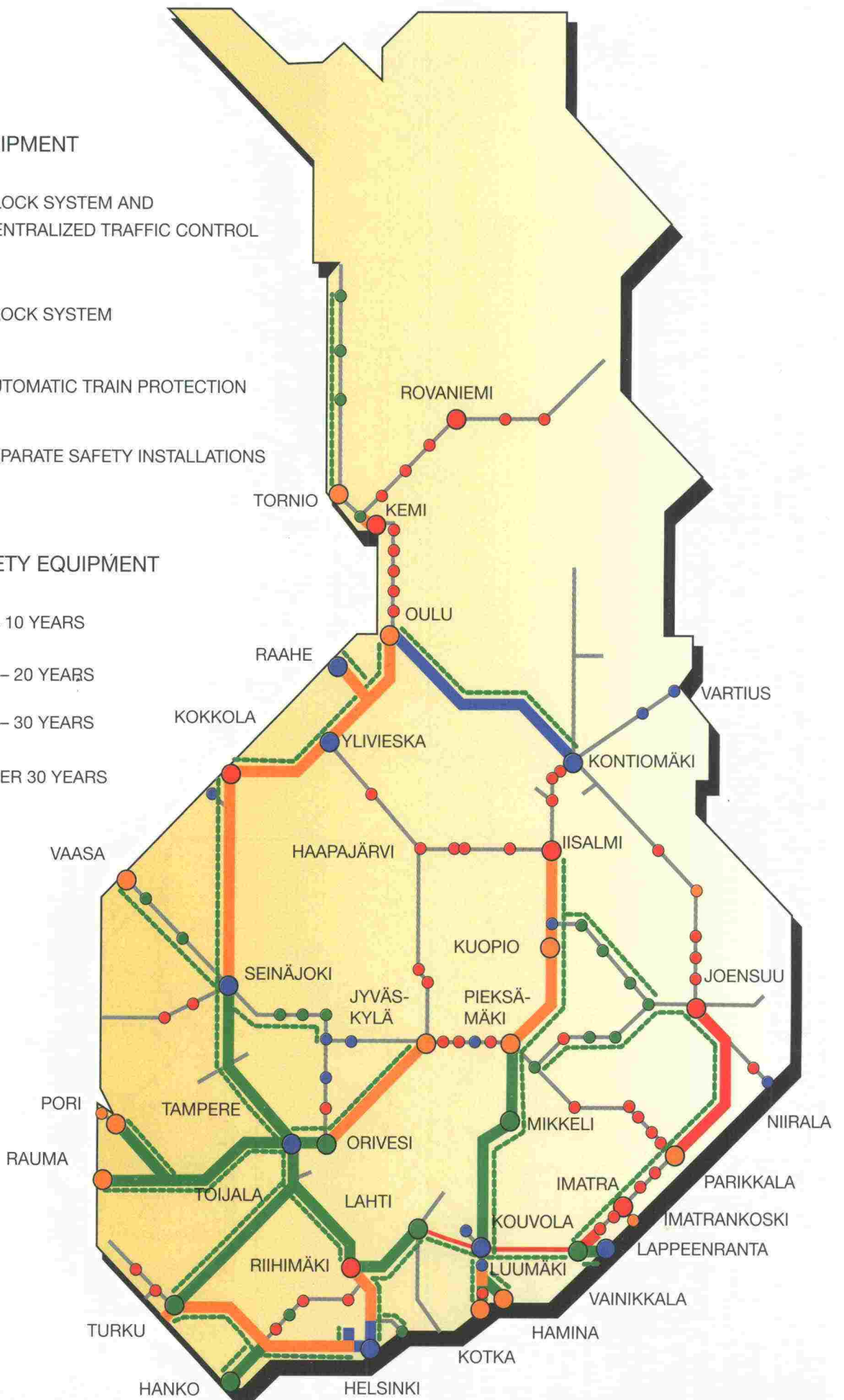
AGE OF SAFETY EQUIPMENT

 0 - 10 YEARS

 11 - 20 YEARS

 21 - 30 YEARS

 OVER 30 YEARS

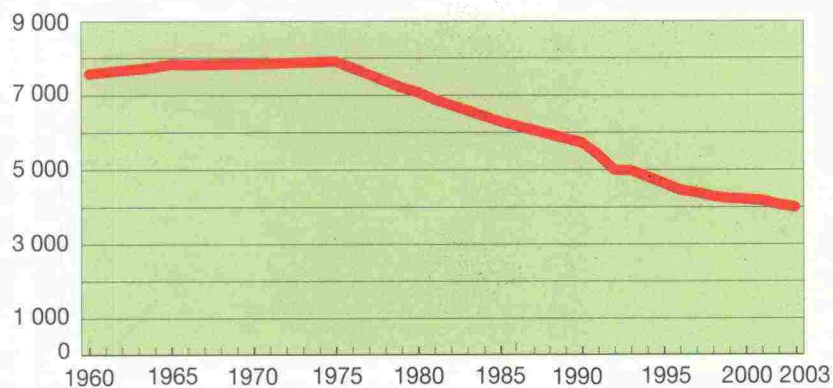


1.12 CROSSINGS BETWEEN RAILWAY AND ROAD

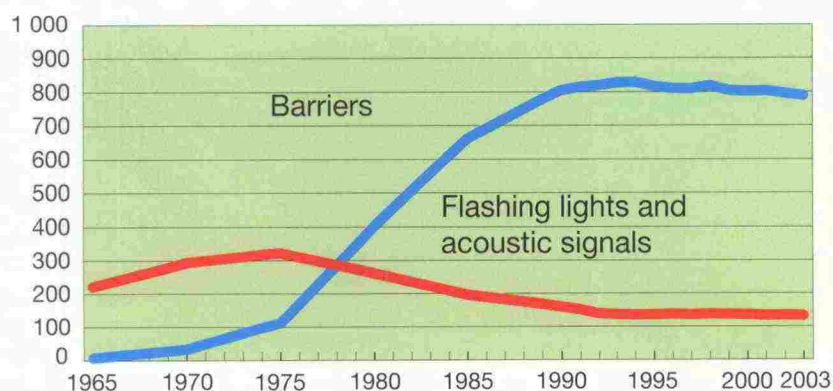
Level-separated crossings		
Overpasses		833
Underpasses		1 079
	Total	1 912
Level-crossings ¹⁾		
With safety equipment		
Barriers		790
Flashing lights and (or) acoustic signals		135
	Total	925
Without safety equipment		3 921
	Total	4 846
Grand total		6 758

¹⁾ Including private rails.

1.13 DEVELOPMENT OF THE NUMBER OF LEVEL-CROSSINGS ON THE STATE-OWNED LINES IN 1960 - 2003



1.14 DEVELOPMENT OF THE NUMBER OF LEVEL-CROSSING SAFETY EQUIPMENT IN 1965 - 2003



1.15 NUMBER OF LEVEL-CROSSINGS AND LEVEL-CROSSING SAFETY EQUIPMENT ON THE MAIN LINES

Total of level-crossings ¹⁾
 With safety equipment
 Without safety equipment

3 370
 672
 2 698

¹⁾ Footpaths between platforms and service roads are not included in the statistics.

The first figure in brackets refers to the number of level-crossings with safety equipment, the second figure to the number of those without safety equipment.

— Over 10 km line sections without level crossings



LINE AND TRAIN STOCK

1.16 RAILWAY OPERATING POINTS

		2003	2002
Railway operating points	number	376	371
Passenger traffic		97	108
Freight traffic		173	157
Passenger and freight traffic		106	106

1.17 BUILDINGS

	Finnish Rail Administration				VR			
	2003		2002		2003		2002	
	no	1 000 m ³	no	1 000 m ³	no	1 000 m ³	no	1 000 m ³
Administrative and traffic buildings	248	309	286	365	82	799	83	786
Freight terminals, depots, repair workshops	111	327	123	359	119	2 069	111	1 750
Workshops and main warehouses	-	-	-	-	36	564	50	860
Warehouses	210	143	237	157	41	75	40	74
Residential buildings	295	158	324	172	21	72	24	72
Outhouses of residential buildings	883	106	937	113	22	4	24	4
Other buildings	692	216	732	229	75	150	77	148
Total	2 439	1 259	2 639	1 395	396	3 733	409	3 694

1.18 LAND AND WATER AREAS

	Finnish Rail Administration		VR	
	2003	2002	2003	2002
	hectares	hectares	hectares	hectares
Land areas	26 550	26 550	629	630
Water areas	500	500	-	-
Total	27 050	27 050	629	630

1.19 VR'S TRACTIVE STOCK BY TYPE OF TRACTION

	Number	Power (kW)	Total power (kW)
Electric locomotives			
Sr1	110	3 100	341 000
Sr2	46	6 000	276 000
Total	156		617 000
Diesel locomotives			
Dv12	192	1 000	192 000
Dv15	7	620	4 340
Dv16	28	700	19 600
Dr14	24	875	21 000
Dr16	2	1 500	3 000
Dr16	20	1 677	33 540
Total	273		273 480
Electric railcars			
Sm1	50	860	43 000
Sm2	50	620	31 000
Sm3	9	4 000	36 000
Sm4	10	1 240	12 400
Total	119		122 400
Other	201		34 372
Total tractive stock	749		1 047 252

1.20 VR'S PASSENGER STOCK AND PASSENGER ACCOMMODATION¹⁾

Passanger stock in commercial traffic	number	1 060
Passenger accommodation		68 991
Metal-bodied day coaches	number	531
Passenger accommodation		40 659
Railcars and railcar trailers	number	273
Passenger accommodation		23 241
Restaurant cars	number	58
Guard's vans	number	11
Car-carriers	number	24
Metal-bodied sleeping cars	number	111
Passenger accommodation		3 839
Other coaches	number	39
Passenger accommodation		1 232
Total passenger accommodation		68 991
Seats		65 152
Sleeping accommodation		3 839

¹⁾ Excluding stock withdrawn from service.



1.21 FREIGHT WAGONS AND THEIR CARRYING CAPACITY ¹⁾

VR-owned freight wagons in commercial traffic		
Number of wagons		11 324
2-axled		5 300
4-axled		6 019
Other		5
Carrying capacity	tons	501 370
Covered wagons		
Number of wagons		4 578
2-axled		3 034
4-axled		1 544
Carrying capacity	tons	179 308
Open wagons		
Number of wagons		6 108
2-axled		2 266
4-axled		3 837
Other		5
Carrying capacity	tons	286 650
Tank wagons		
Number of wagons		638
4-axled		638
Carrying capacity	tons	35 412
Private owner's wagons		
Number of wagons		303
2-axled		56
3-axled		52
4-axled		195
Carrying capacity	tons	12 756

¹⁾ Excluding wagons withdrawn from service.



2 VR'S TRAIN TRAFFIC

2.1 MAIN DATA ON TRAIN AND TRACTIVE STOCK PERFORMANCE IN 1999 - 2003

		1999	2000	2001	2002	2003
Train performance						
Train-km	1 000	44 305	44 800	45 461	47 180	48 060
By category of train						
Passenger trains		27 061	27 575	28 654	30 467	31 275
	%	61.1	61.6	63.0	64.6	65.1
Freight trains		17 244	17 225	16 807	16 713	16 785
	%	38.9	38.4	37.0	35.4	34.9
By type of traction						
Diesel tractive stock		13 344	12 159	11 162	11 043	10 788
	%	30.1	27.1	24.6	23.4	22.4
Diesel locomotives		13 344	12 158	11 162	11 043	10 788
Light rail motor tractors		0	1	0	0	0
Electric tractive stock		30 961	32 640	34 299	36 137	37 272
	%	69.9	72.9	75.4	76.6	77.6
Electric locomotives		23 368	24 960	26 226	26 772	27 346
Electric railcars		7 593	7 681	8 073	9 365	9 926
Gross tonne-km	1 000 000	32 722.4	33 147.8	32 608.2	32 758.5	34 135.2
Passenger traffic		10 066.0	10 211.8	10 375.6	10 826.0	11 204.2
	%	30.8	30.8	31.8	33.0	32.8
Freight traffic		22 656.4	22 936.0	22 232.6	21 932.5	22 931.0
	%	69.2	69.2	68.2	67.0	67.2
Gross hauled tonne-km	1 000 000	29 014.5	29 423.2	28 896.7	28 974.2	30 235.9
Passenger traffic		8 337.5	8 441.6	8 558.0	8 921.2	9 305.1
	%	28.7	28.7	29.6	30.8	30.8
Freight traffic		20 677.0	20 981.6	20 338.7	20 053.0	20 930.8
	%	71.3	71.3	70.4	69.2	69.2





		1999	2000	2001	2002	2003
Vehicle-axle-km	1 000 000	2 266.4	2 303.8	2 247.9	2 248.5	2 340.6
By category of train						
Passenger traffic		698.2	703.3	705.1	727.9	747.4
	%	30.8	30.5	31.4	32.4	31.9
Freight traffic		1 568.2	1 600.5	1 542.8	1 520.6	1 593.2
	%	69.2	69.5	68.6	67.6	68.1
By category of vehicle						
Passenger stock		699.0	705.5	708.1	728.1	751.1
Coaches		559.9	565.2	561.4	560.9	575.4
Electric railcars		93.6	95.4	102.0	122.6	130.3
Other coaches		45.5	44.9	44.7	44.6	45.4
Wagons		1 567.4	1 598.3	1 539.8	1 519.2	1 589.6
Loaded wagons		849.8	868.5	840.1	827.8	870.4
Empty wagons		717.6	729.8	699.7	691.4	719.2
Coefficient of empty running of a wagon		45.8	45.7	45.4	45.5	45.0
VR-owned wagons		1 056.1	1 109.1	1 039.1	1 062.4	1 072.5
Private owners' wagons		46.0	44.9	41.6	37.0	29.6
CIS wagons		465.3	444.3	459.1	419.8	487.5
Tractive stock performance						
Locomotive-km	1 000	65 473	66 147	65 382	65 576	66 427
Diesel tractive stock		27 062	26 126	23 511	22 393	21 567
	%	41.3	39.5	36.0	34.1	32.5
Diesel locomotives		26 990	26 056	23 422	22 317	21 503
Light rail motor tractors		72	70	89	76	64
Electric tractive stock		38 411	40 021	41 871	43 183	44 860
	%	58.7	60.5	64.0	65.9	67.5
Electric locomotives		27 662	29 129	30 457	31 245	32 188
Electric railcars		10 749	10 892	11 414	11 938	12 672

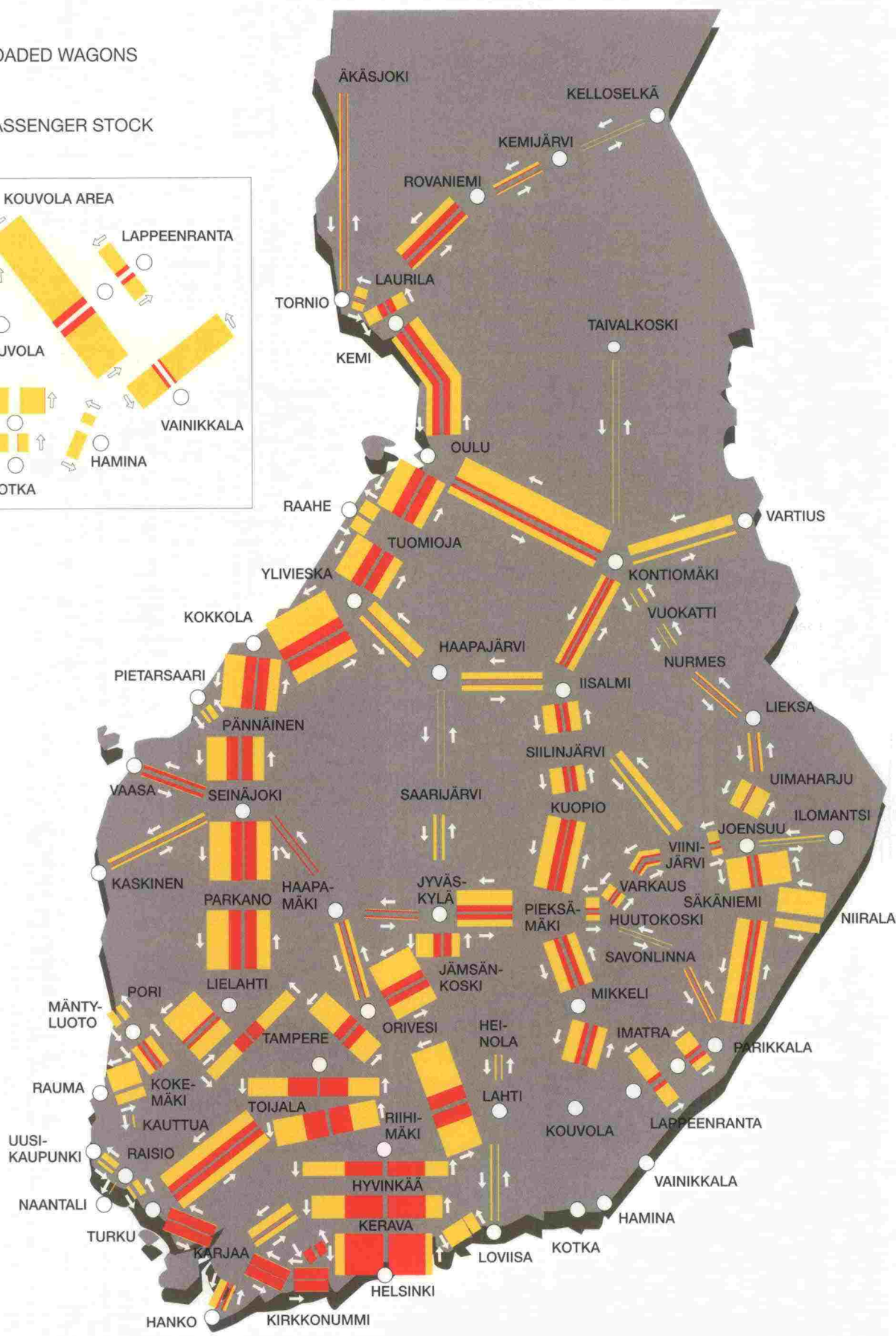
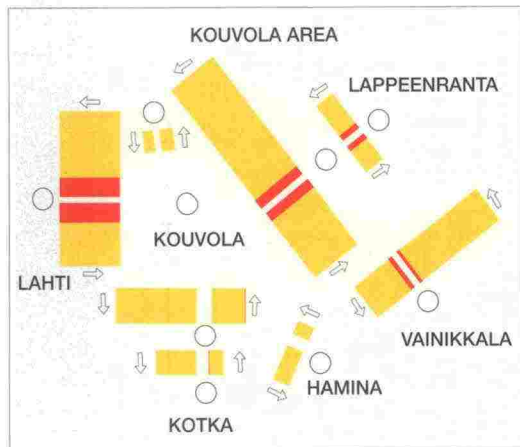
2.2 GROSS TONNE-KM AND AVERAGE TRAIN WEIGHTS (INCLUDING LOCOMOTIVE)
BY TYPE OF TRACTION AND CATEGORY OF TRAIN IN 2003

	Passenger traffic						Freight traffic			Grand total or on average	
	Long-distance trains					Commuter trains in the Helsinki Area	Total or on average	Freight trains	Pick-up freight trains		Total or on average
	Pendolino trains	InterCity trains	Express trains	Regional trains							
Gross tonne-km 1 000 000	654	3 443	5 283	792	1 031	11 204	22 226	705	22 931	34 135	
Diesel locomotives	-	20	1 157	446	-	1 623	7 020	499	7 519	9 141	
Electric locomotives	-	3 423	4 126	225	80	7 855	15 206	206	15 412	23 267	
Electric railcars	654	-	-	121	951	1 727	-	-	-	1 727	
Average train weights (including locomotive) tons											
Hauled by locomotives	-	429.5	520.8	224.1	415.6	443.9	1 388.6	905.0	1 366.1	849.9	
Diesel locomotives	-	436.9	496.3	204.1	-	355.8	1 236.8	905.1	1 207.4	847.3	
Electric locomotives	-	429.5	528.1	277.6	415.6	467.9	1 472.0	904.8	1 459.8	850.8	
Hauled by railcars											
Electric railcars	412.4	-	-	100.4	133.4	174.0	-	-	-	174.0	



2.3 GROSS TONS CARRIED ON THE DIFFERENT SECTIONS OF LINE IN 2003

-  LOADED WAGONS
-  PASSENGER STOCK



2.4 VEHICLE-AXLE-KM BY CATEGORY OF TRAIN AND VEHICLE IN 2003

Train category and type of traction	VR-owned passenger coaches	Electric railcars	VR-owned other passenger coaches	Russian passenger coaches	VR-owned covered wagons	VR-owned open wagons	VR-owned other wagons	CIS wagons	Private owners' wagons	Total
	1 000 000 vehicle-axle-km									
Passenger traffic	570.3	130.2	29.8	15.4	0.1	-	1.6	-	-	747.4
Long-distance trains	564.5	51.7	29.8	15.4	0.1	-	1.6	-	-	663.1
Pendolino trains	-	41.7	-	-	-	-	-	-	-	41.7
InterCity trains	207.2	-	0.3	-	-	-	-	-	-	207.5
Diesel locomotives	1.4	-	-	-	-	-	-	-	-	1.4
Electric locomotives	205.8	-	0.3	-	-	-	-	-	-	206.1
Express trains	317.8	-	29.4	15.3	0.1	-	1.6	-	-	364.2
Diesel locomotives	70.6	-	7.5	-	-	-	0.2	-	-	78.3
Electric locomotives	247.2	-	21.9	15.3	0.1	-	1.4	-	-	285.9
Regional trains	39.5	10.0	0.1	0.1	-	-	-	-	-	49.7
Diesel locomotives	26.0	-	0.1	-	-	-	-	-	-	26.1
Electric locomotives	13.5	-	-	0.1	-	-	-	-	-	13.6
Electric railcars	-	10.0	-	-	-	-	-	-	-	10.0
Commuter trains in the Helsinki Area	5.8	78.5	-	-	-	-	-	-	-	84.3
Diesel locomotives	-	-	-	-	-	-	-	-	-	-
Electric locomotives	5.8	-	-	-	-	-	-	-	-	5.8
Electric railcars	-	78.5	-	-	-	-	-	-	-	78.5
Freight traffic	5.1	-	-	0.2	376.5	549.0	145.3	487.5	29.6	1 593.2
Freight traffic	2.9	-	-	-	363.5	535.3	142.2	477.5	28.8	1 550.2
Diesel locomotives	1.4	-	-	-	104.6	199.8	38.1	138.1	4.8	486.8
Electric locomotives	1.5	-	-	-	258.9	335.5	104.1	339.4	24.0	1 063.4
Pick-up freight trains	2.2	-	-	0.2	13.0	13.7	3.1	10.0	0.8	43.0
Diesel locomotives	0.1	-	-	-	9.5	12.0	2.6	9.0	0.6	33.8
Electric locomotives	2.1	-	-	0.2	3.5	1.7	0.5	1.0	0.2	9.2
Total	575.4	130.2	29.8	15.6	376.6	549.0	146.9	487.5	29.6	2 340.6
Diesel locomotives	99.5	-	7.6	-	114.1	211.8	40.9	147.1	5.4	626.4
Electric locomotives	475.9	-	22.2	15.6	262.5	337.2	106.0	340.4	24.2	1 584.0
Electric railcars	-	130.2	-	-	-	-	-	-	-	130.2
Grand total	575.4	130.2	29.8	15.6	376.6	549.0	146.9	487.5	29.6	2 340.6

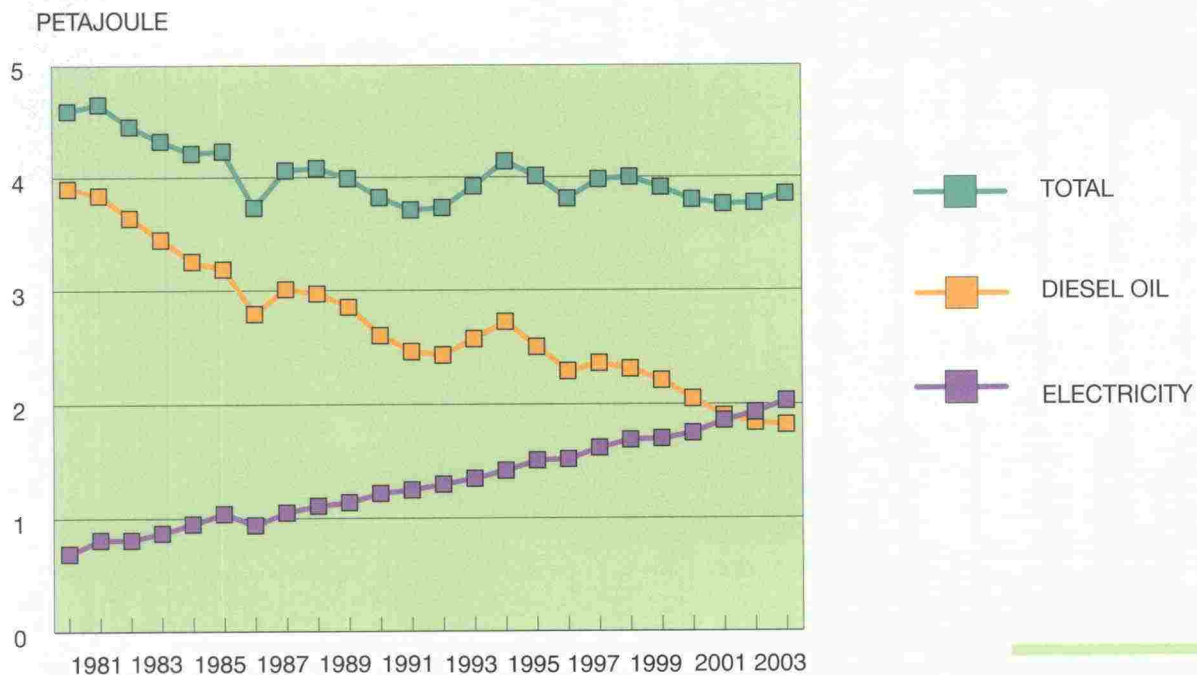


2.5 ENERGY CONSUMPTION IN TRAIN TRAFFIC IN 1980 - 2003

Energy consumption						
Year	Electricity		Diesel oil		Total	
	million kWh	peta-joule ¹⁾	million l	peta-joule	peta-joule	
1980	191	0.69	108.6	3.90	4.59	
1981	224	0.81	107.0	3.84	4.65	
1982	225	0.81	101.4	3.64	4.45	
1983	242	0.87	96.2	3.45	4.32	
1984	265	0.95	90.9	3.26	4.21	
1985	290	1.04	88.9	3.19	4.23	
1986	260	0.94	77.8	2.79	3.73	
1987	291	1.05	83.9	3.01	4.06	
1988	308	1.11	82.6	2.97	4.08	
1989	316	1.14	79.4	2.85	3.99	
1990	340	1.22	72.3	2.60	3.82	
1991	346	1.25	68.4	2.46	3.71	
1992	361	1.30	67.7	2.43	3.73	
1993	374	1.35	71.6	2.57	3.92	
1994	395	1.42	75.7	2.72	4.14	
1995	419	1.51	69.6	2.50	4.01	
1996	422	1.52	63.8	2.29	3.81	
1997	450	1.62	65.8	2.36	3.98	
1998	470	1.69	64.3	2.31	4.00	
1999	471	1.70	61.5	2.21	3.91	
2000	486	1.75	57.0	2.05	3.80	
2001	516	1.86	52.8	1.90	3.76	
2002	537	1.93	51.2	1.84	3.77	
2003	563	2.03	50.5	1.82	3.85	

¹⁾ Petajoule = 10¹⁵ joules

ENERGY CONSUMPTION IN TRAIN TRAFFIC

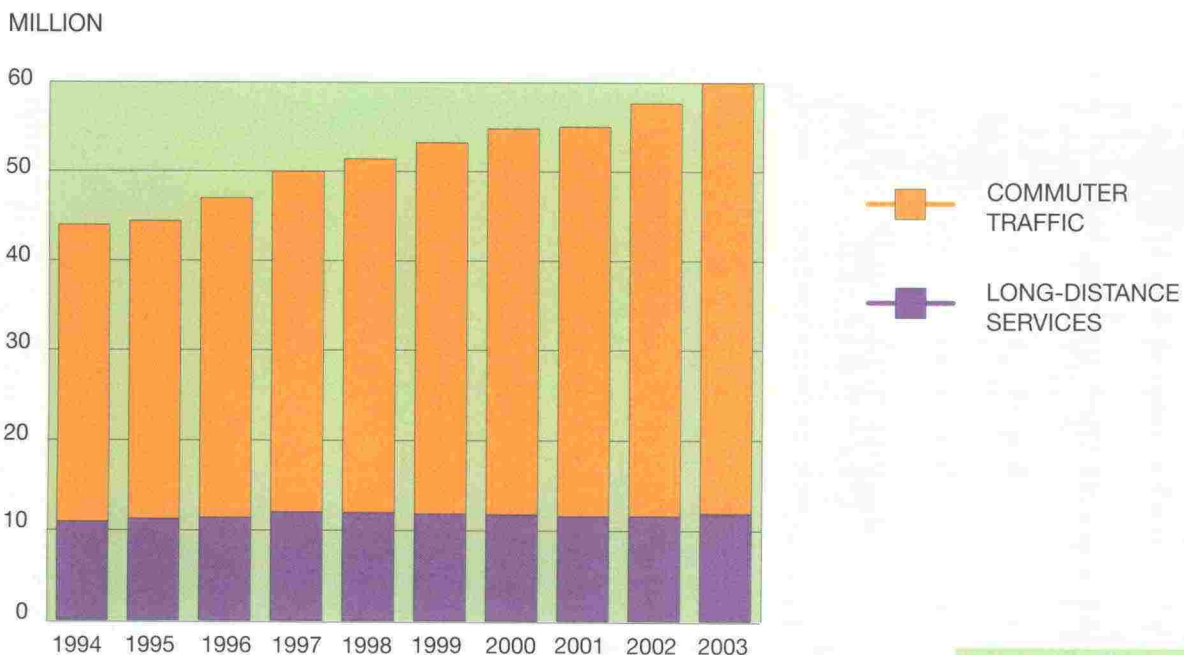


3 VR'S PASSENGER TRAFFIC

3.1 PASSENGER TRAFFIC BY CATEGORY OF TRAFFIC IN 1994 - 2003

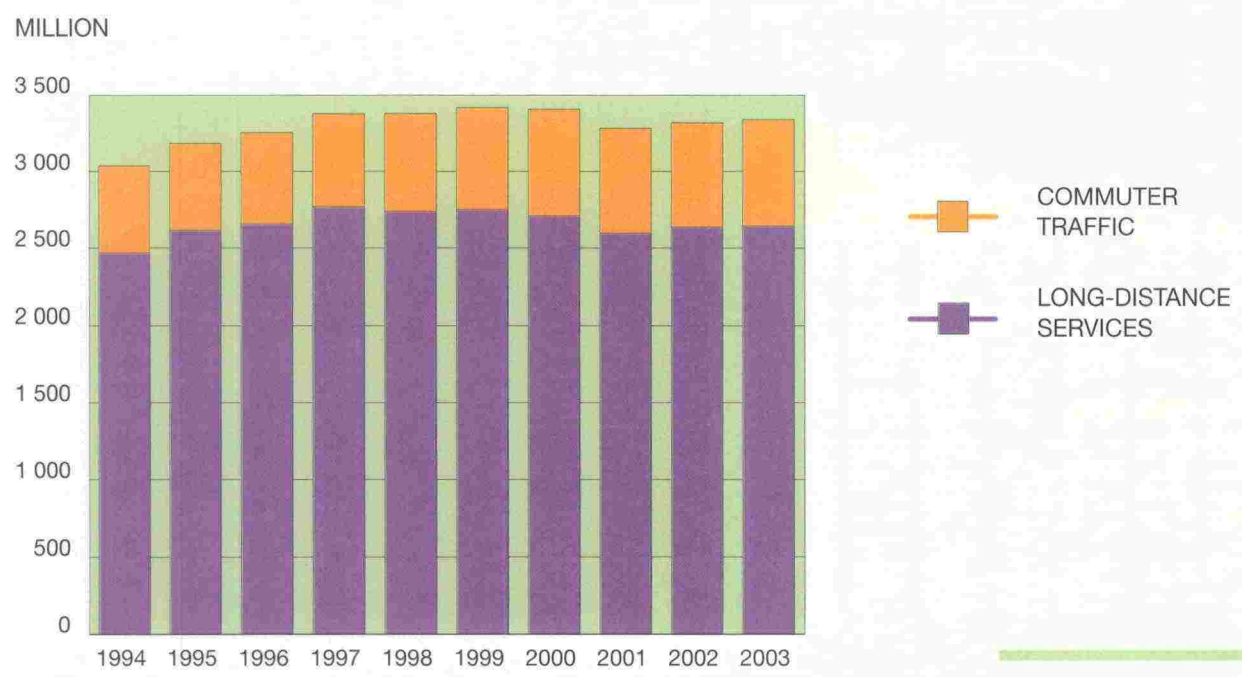
Commercial traffic		1994	1995	1996
Number of journeys	1 000			
Long-distance services		10 932	11 266	11 400
	%	24.9	25.4	24.3
Commuter traffic in the Helsinki Area		33 057	33 154	35 600
	%	75.1	74.6	75.7
	Total	43 989	44 420	47 000
Passenger-km	1 000 000			
Long-distance services		2 468	2 614	2 655
	%	81.3	82.1	81.6
Commuter traffic in the Helsinki Area		569	570	599
	%	18.7	17.9	18.4
	Total	3 037	3 184	3 254
Average length of journeys	km	69.0	71.7	69.2

NUMBER OF JOURNEYS IN PASSENGER TRAFFIC IN 1994 - 2003

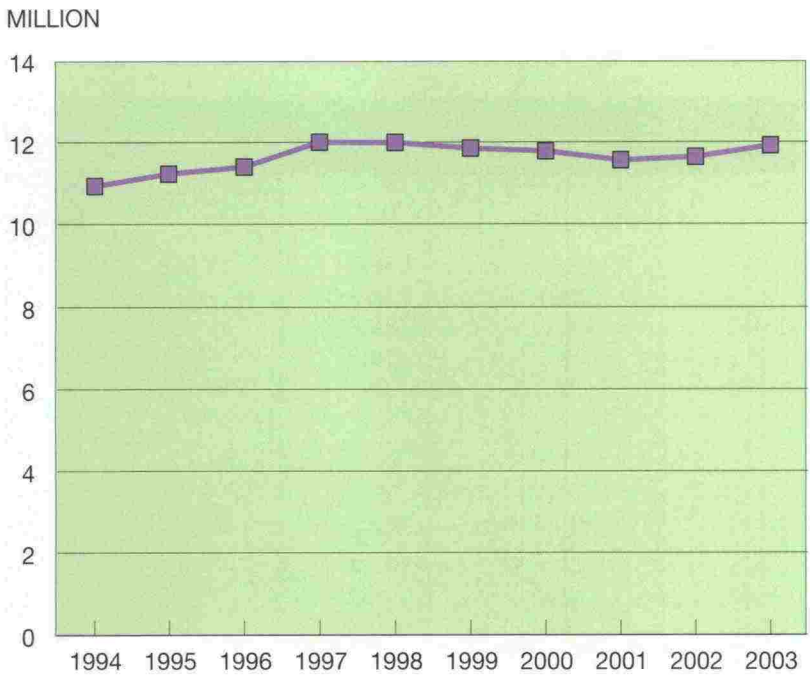


1997	1998	1999	2000	2001	2002	2003
12 031	11 985	11 851	11 783	11 561	11 643	11 915
24.1	23.3	22.3	21.5	21.0	20.2	19.9
37 949	39 385	41 358	43 000	43 426	46 052	47 994
75.9	76.7	77.7	78.5	79.0	79.8	80.1
49 980	51 370	53 209	54 783	54 987	57 695	59 909
2 766	2 737	2 748	2 707	2 596	2 636	2 642
81.9	81.0	80.5	79.5	79.1	79.4	79.1
610	640	666	697	686	682	696
18.1	19.0	19.5	20.5	20.9	20.6	20.9
3 376	3 377	3 415	3 405	3 282	3 318	3 338
67.5	65.7	64.2	62.2	59.7	57.5	55.7

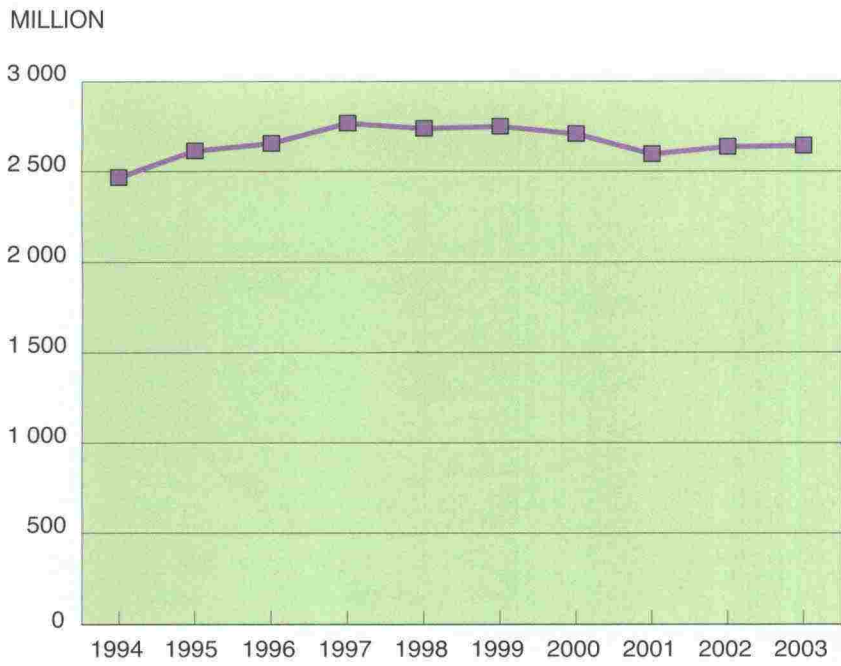
PASSENGER-KILOMETRES IN PASSENGER TRAFFIC IN 1994 - 2003



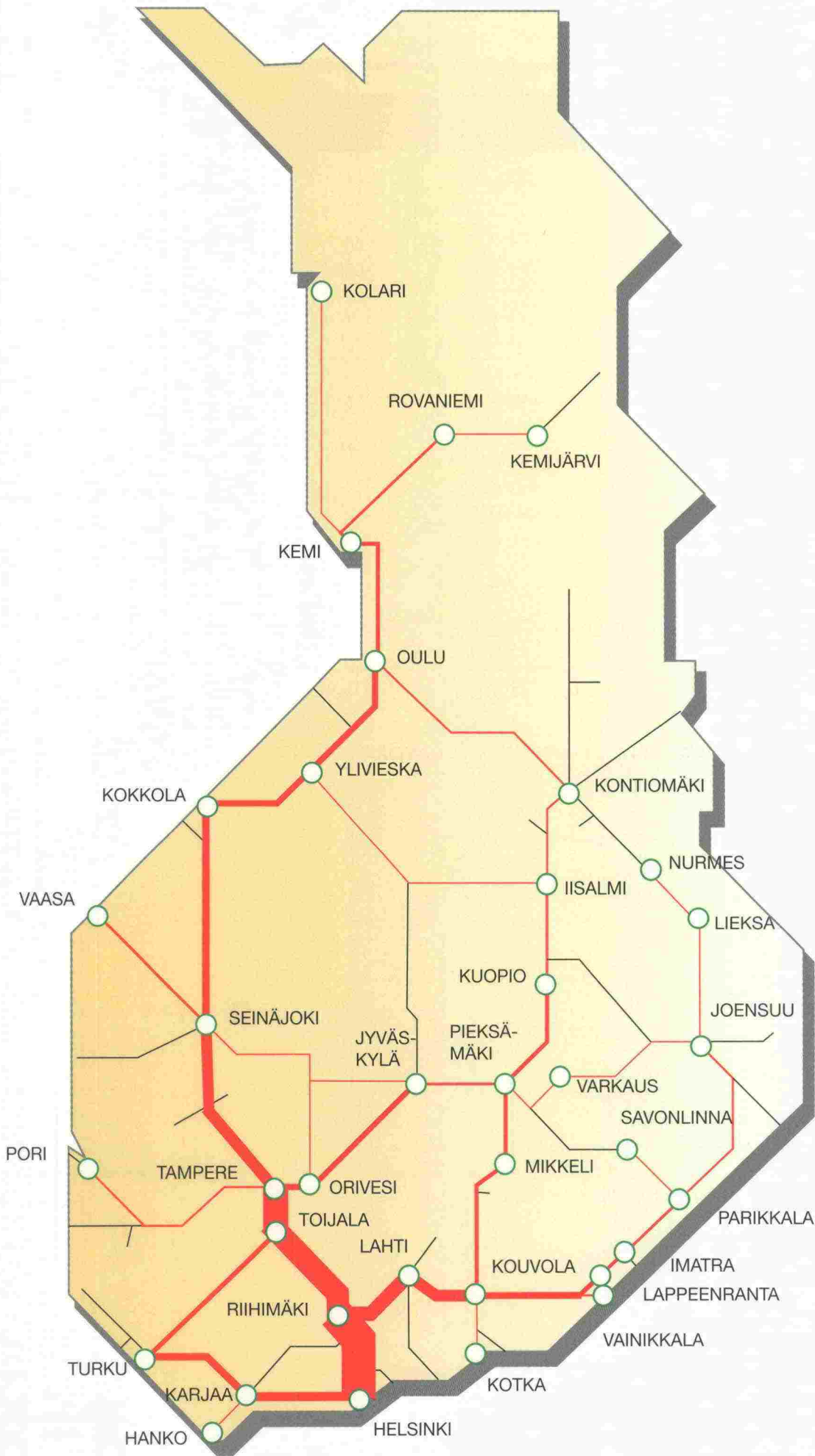
NUMBER OF JOURNEYS IN LONG-DISTANCE TRAFFIC IN 1994 - 2003



PASSENGER-KILOMETRES IN LONG-DISTANCE TRAFFIC IN 1994 - 2003



3.2 PASSENGER FLOWS IN LONG-DISTANCE TRAFFIC IN 2003



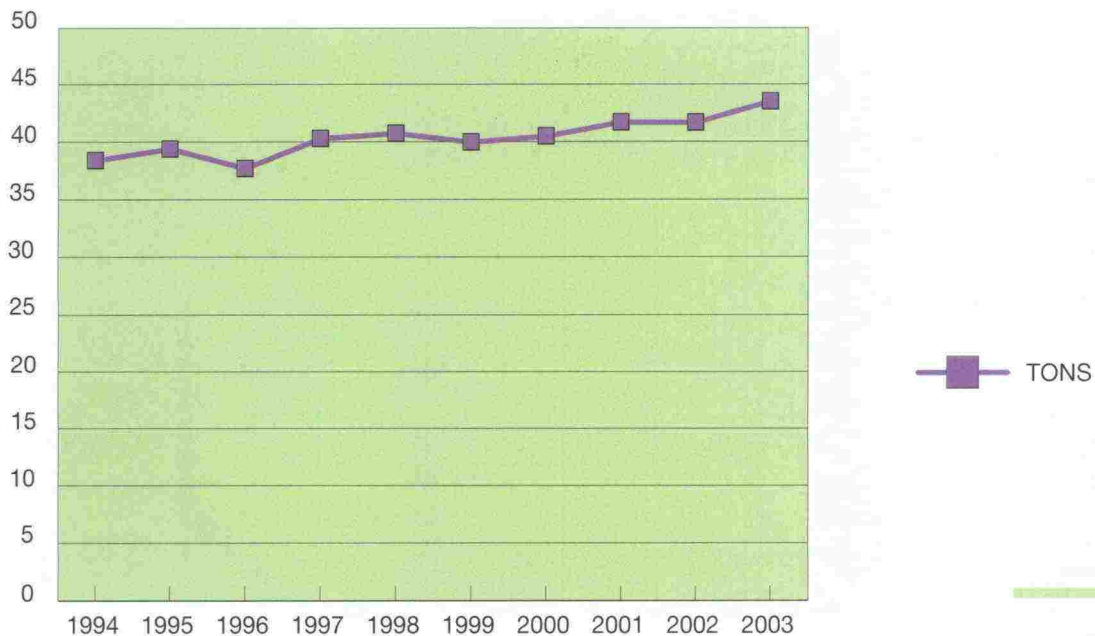
4 VR'S FREIGHT TRAFFIC

4.1 FREIGHT TRAFFIC IN 1994 - 2003

Commercial traffic		1994	1995	1996
Wagonload freight				
Weight of freight	1 000 t	38 414.1	39 387.0	37 717.0
Tonne-km	1 000 000	9 412.9	9 292.9	8 805.5
Consignments	1 000	492	512	501
Wagonloads	1 000	1 009.2	1 048.4	968.1
Average length of transport	km	245	236	234
Ratios				
Tonne-km, commercial freight				
Per length of line	1 000	1 606.6	1 586.1	1 502.6
Per train kilometre of freight trains		567.1	580.8	564.8
Per wagon-axle-km		5.8	6.1	5.9

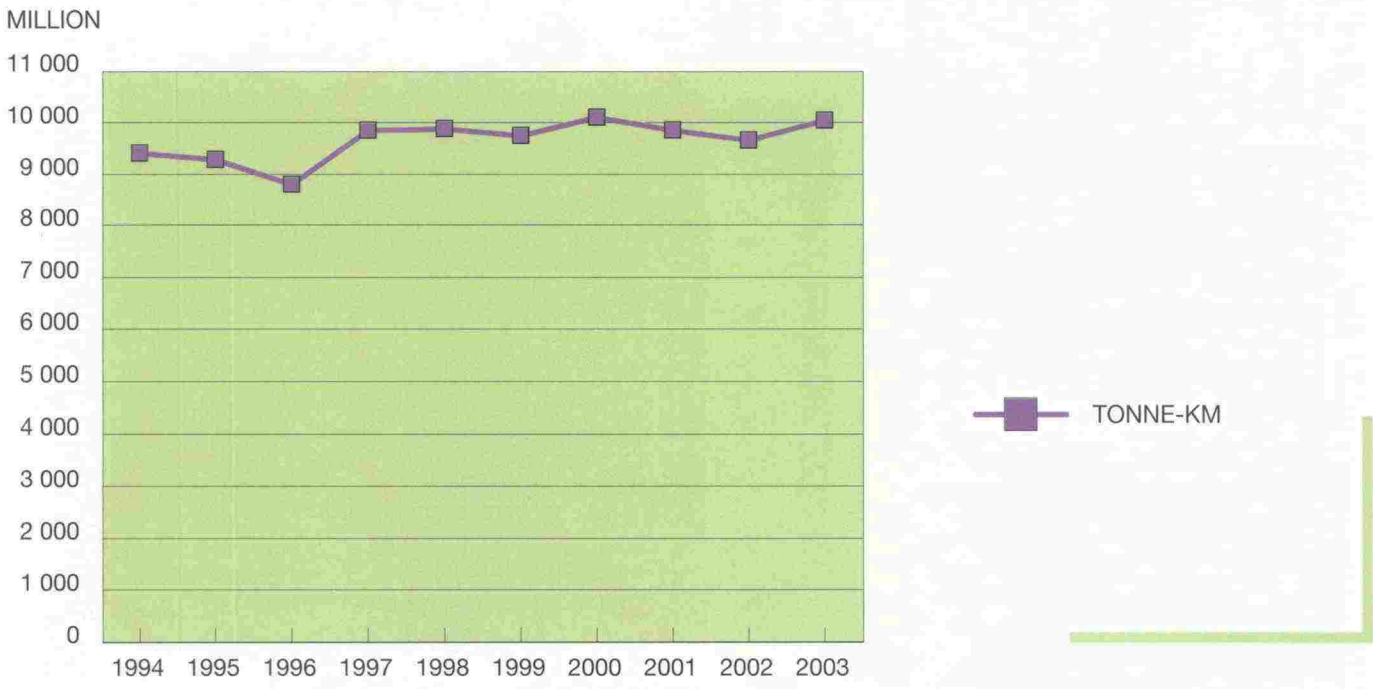
TONS CARRIED IN WAGONLOAD TRAFFIC IN 1994 - 2003

MILLION



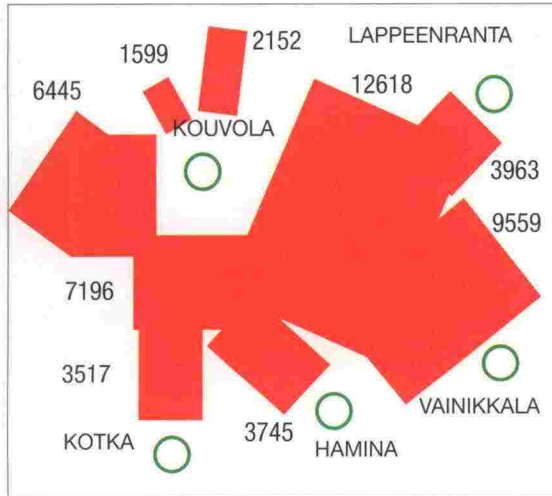
1997	1998	1999	2000	2001	2002	2003
40 321.4	40 739.5	39 979.3	40 500.9	41 677.6	41 678.6	43 502.9
9 856.4	9 885.0	9 752.5	10 106.6	9 857.3	9 663.8	10 047.1
556	515	505	553	568	584	620
1 035.0	1 022.1	977.5	983.7	987.4	991.8	1 042.3
245	243	244	250	236	232	231
1 680.5	1 684.8	1 671.1	1 726.4	1 685.0	1 651.9	1 717.2
578.7	568.9	565.6	586.7	586.5	578.2	598.6
6.2	6.2	6.2	6.3	6.4	6.4	6.3

TONNE-KM IN WAGONLOAD TRAFFIC IN 1994 - 2003

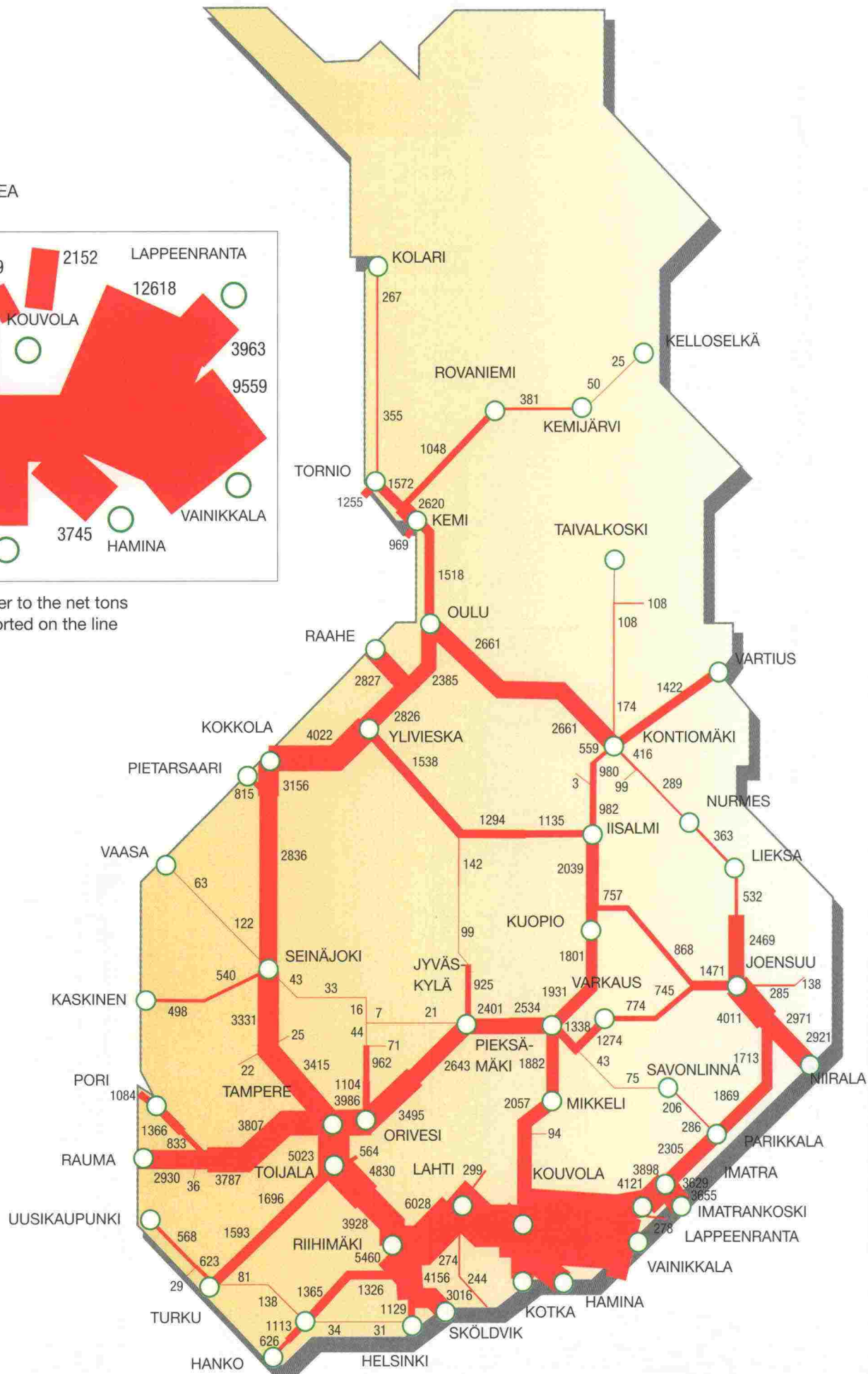


4.2 FREIGHT FLOWS IN 2003

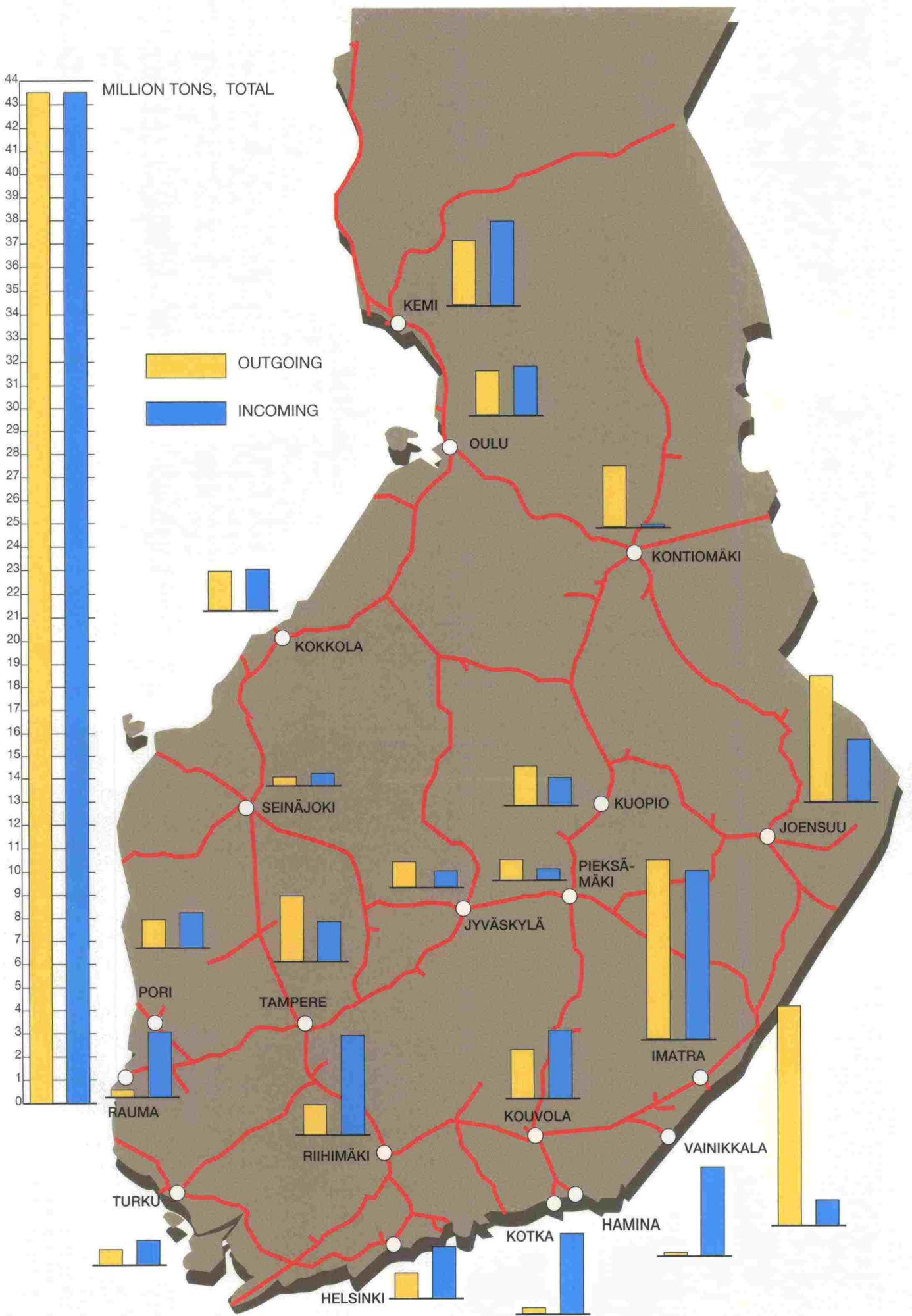
KOUVOLA AREA



The figures refer to the net tons (1 000) transported on the line sections.

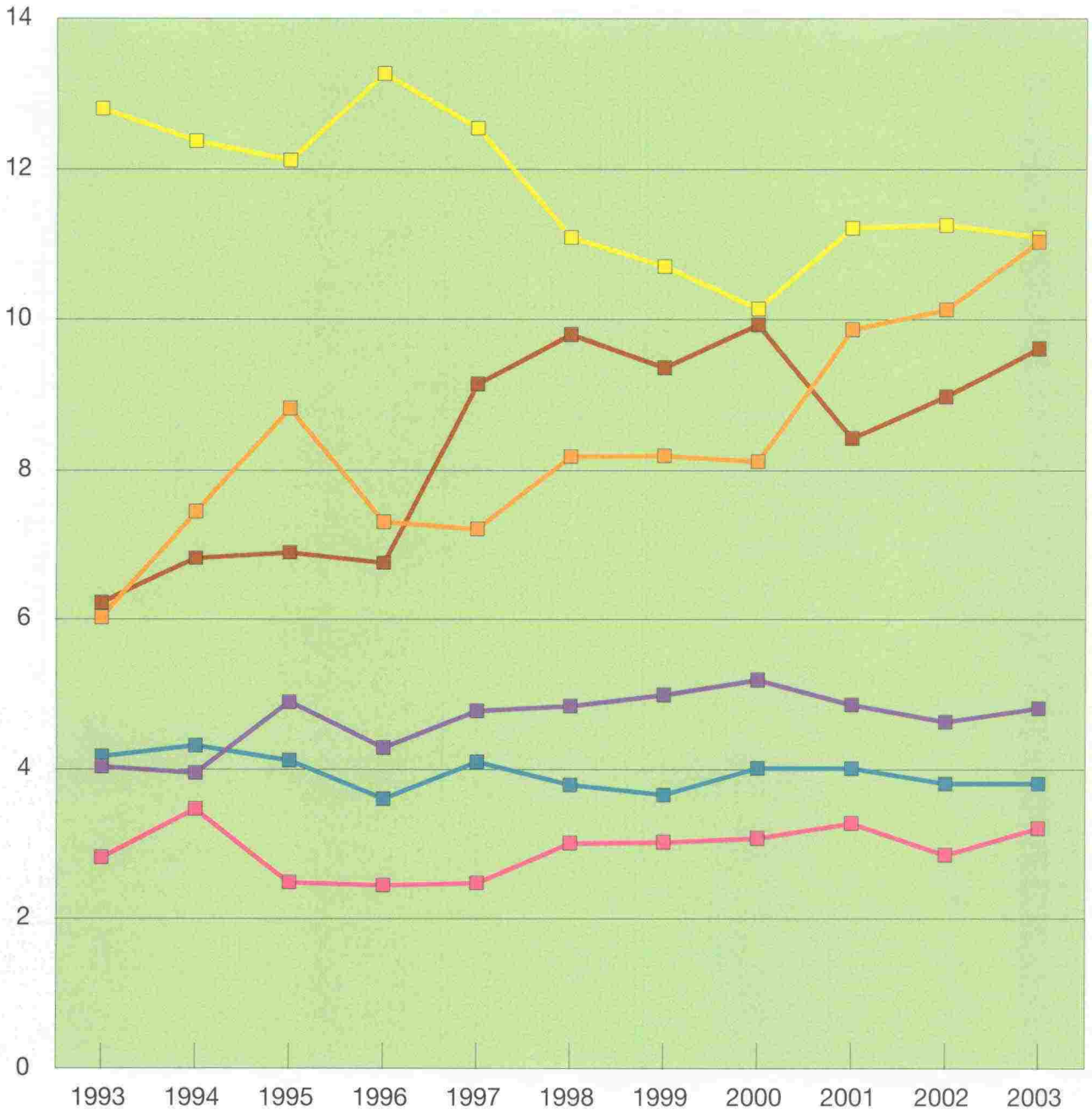


4.3 FREIGHT CARRIED IN COMMERCIAL WAGONLOAD TRAFFIC IN 2003, BY DISTRICTS

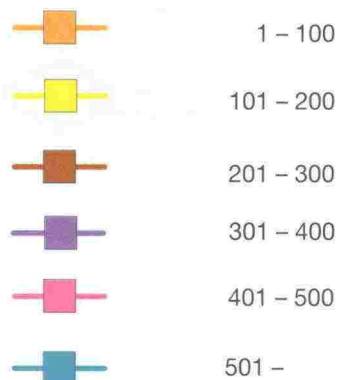


4.4 WEIGHT OF FREIGHT CARRIED IN COMMERCIAL WAGONLOAD TRAFFIC IN 1993 - 2003, BY DISTANCE

MILLION TONS



DISTANCE DISTRIBUTION, KM



4.5 TRAFFIC BETWEEN VR AND FOREIGN RAILWAYS IN 2003

	Wagons									Passenger coaches		
	Finnish wagons			Foreign wagons			Total			Finnish	Foreign	Total
	Loaded	Empty	Total	Loaded	Empty	Total	Loaded	Empty	Grand total			
Number of vehicles												
Despatched from Finland	878	3 967	4 845	53 314	307 732	361 046	54 192	311 699	365 891	2 622	6 902	9 524
Eastern traffic												
Vainikkala	–	50	50	44 012	151 886	195 898	44 012	151 936	195 948	2 622	6 895	9 517
Imatrankoski	–	–	–	511	78 088	78 599	511	78 088	78 599	–	–	–
Niirala	–	3 648	3 648	2 201	55 695	57 896	2 201	59 343	61 544	–	–	–
Vartius	–	–	–	59	21 716	21 775	59	21 716	21 775	–	7	7
Total	–	3 698	3 698	46 783	307 385	354 168	46 783	311 083	357 866	2 622	6 902	9 524
Western traffic												
Tornio	878	269	1 147	6 531	347	6 878	7 409	616	8 025	–	–	–
Arrived in Finland	4 357	863	5 220	342 087	19 328	361 415	346 444	20 191	366 635	2 622	6 902	9 524
Eastern traffic												
Vainikkala	–	5	5	187 619	13 954	201 573	187 619	13 959	201 578	2 622	6 895	9 517
Imatrankoski	–	–	–	75 998	42	76 040	75 998	42	76 040	–	–	–
Niirala	3 648	–	3 648	55 437	764	56 201	59 085	764	59 849	–	–	–
Vartius	–	–	–	20 604	25	20 629	20 604	25	20 629	–	7	7
Total	3 648	5	3 653	339 658	14 785	354 443	343 306	14 790	358 096	2 622	6 902	9 524
Western traffic												
Tornio	709	858	1 567	2 429	4 543	6 972	3 138	5 401	8 539	–	–	–
Number of vehicles carried in traffic between VR and foreign railways	5 235	4 830	10 065	395 401	327 060	722 461	400 636	331 890	732 526	5 244	13 804	19 048

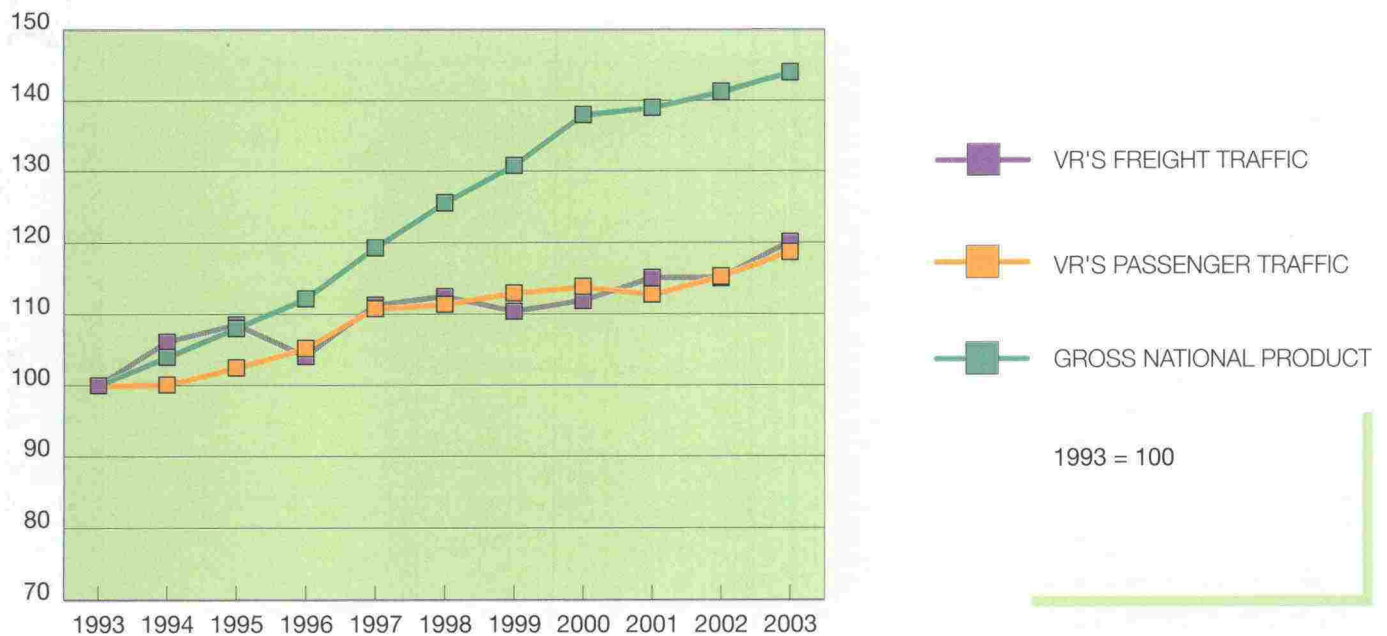


5 VOLUME OF RAILWAY TRAFFIC

TRAFFIC VOLUME INDEX IN 1999 - 2003

1990 = 100	1999	2000	2001	2002	2003
Passenger traffic	108	109	108	111	114
Freight traffic	121	123	126	126	132
Total railway traffic	115	116	117	118	123

VOLUME INDEX



6 RAILWAY ACCIDENTS

6.1 RAILWAY ACCIDENTS IN 2003 ¹⁾

Nature of accident	Number of accidents	Number of persons killed or seriously injured ²⁾		
		Total	Killed	Seriously injured	Total
Collisions	6	0	0	0
Train traffic	1	0	0	0
Shunting	5	0	0	0
Derailments	8	0	0	0
Train traffic	6	0	0	0
Shunting	2	0	0	0
Level-crossing accidents	52	6	6	12
With safety equipment	12	2	1	3
Without safety equipment	40	4	5	9
Fire in rolling stock in motion	8	0	0	0
Other accidents	18	11	11	22
Total	92	17	17	34
Accidents caused by road vehicles running into or through half-barriers	180			

6.2 NUMBER OF RAILWAY ACCIDENTS IN 1983 - 2003

■ LEVEL-CROSSING ACCIDENTS ■ TRAIN TRAFFIC ACCIDENTS



6.3 RATIOS RELATING TO RAILWAY ACCIDENTS IN 1999 - 2003

	1999	2000	2001	2002	2003
Total of persons killed or seriously injured Per one million train-km	0.72	1.00	1.03	0.57	0.71
Total of railway accidents Per one million train-km	2.10	2.01	2.18	1.72	2.00
Passengers					
Killed per one million journeys	0.02	0.04	0.04	-	-
Seriously injured per one million journeys	0.11	0.05	0.09	0.02	0.02

¹⁾ Accidents caused by rolling stock in motion, resulting in deaths of persons or serious injuries or damage of more than 10 000 €.

²⁾ As defined by UIC (International Union of Railways).



7 HISTORICAL SURVEY

Year	Length of line on 31.12. ¹⁾		VR-owned rolling stock on 31.12.								Annual mean strength of VR's staff		VR's passenger traffic		VR's freight traffic		
	km	Track length on 31.12. ¹⁾	Tractive stock							Passenger stock	Freight stock	Primary occupation	Secondary occupation	Number of journeys ²⁾	Passenger-kilometres ²⁾	Weight, 1 000 tons ³⁾	Ton-kilometres ³⁾
			Steam locomotives	Diesel locomotives	Diesel railcars and rail-buses	Electric railcars	Electric locomotives	Light rail motor tractors	Total								
1862	108	..	6	-	-	-	-	-	6	13	142	..	..	39	..	13	..
1870	483	531	43	-	-	-	-	-	43	110	993	..	..	2 404	18 028	132	7 925
1880	852	1 005	98	-	-	-	-	-	98	231	2 176	1 594	..	1 813	65 870	506	49 480
1890	1 876	2 179	151	-	-	-	-	-	151	370	3 594	2 612	..	2 542	126 076	954	104 052
1900	2 650	3 304	310	-	-	-	-	-	310	755	8 547	⁴⁾ 10 282	..	6 899	337 173	2 463	343 370
1910	3 356	4 568	500	-	-	-	-	-	500	1 114	14 149	15 179	..	14 463	554 928	3 860	462 005
1920	3 987	5 567	539	-	-	-	-	-	539	958	13 016	24 105	..	17 549	775 488	5 439	931 679
1930	5 010	6 983	773	-	3	-	-	-	776	1 364	22 012	29 165	..	22 033	1 035 028	9 574	1 592 327
1935	5 367	7 497	740	1	13	-	-	-	754	1 428	23 348	28 845	..	20 052	947 038	12 334	1 979 598
1938	⁵⁾ 5 407	7 858	747	2	20	-	-	-	769	1 469	24 513	31 212	..	23 714	1 227 670	13 731	2 263 070
1945	4 668	6 715	741	4	22	-	-	-	767	1 471	23 261	38 547	..	61 344	3 202 595	⁶⁾ 11 489	⁶⁾ 2 459 817
1950	4 798	7 022	821	4	20	-	-	-	845	1 648	27 655	38 423	..	45 656	2 182 570	15 803	3 445 637
1955	4 889	7 453	798	18	80	-	-	..	896	1 617	26 169	36 073	..	39 444	2 260 463	19 158	4 482 223
1960	⁷⁾ 5 314	⁷⁾ 8 166	⁷⁾ 659	⁷⁾ 120	⁷⁾ 192	-	-	..	⁷⁾ 971	⁷⁾ 1 495	⁷⁾ 26 543	35 340	550	36 603	2 342 928	⁸⁾ 19 041	4 865 000
1965	5 458	9 560	514	306	261	-	-	184	1 265	1 380	26 887	34 903	558	31 171	2 049 624	20 556	5 182 900
1970	5 804	8 795	262	331	272	20	-	278	1 163	1 080	25 045	27 690	410	23 357	2 156 236	23 620	6 270 300
1975	5 918	8 938	250	369	223	60	27	259	1 188	1 055	24 862	29 002	277	35 546	3 135 164	22 657	⁹⁾ 6 438 200
1976	6 010	9 060	-	379	215	72	39	256	961	1 067	24 600	29 634	323	36 990	2 985 295	23 358	6 546 600
1977	6 063	9 131	-	384	215	80	51	259	989	1 076	24 496	29 333	306	36 762	2 977 155	22 079	6 398 800
1978	6 057	9 132	-	393	196	86	62	263	1 000	1 107	23 794	28 824	304	37 262	2 983 133	22 629	6 327 900
1979	6 078	9 149	-	395	189	90	74	260	1 008	1 093	23 825	28 761	303	37 618	3 019 988	26 657	7 367 500
1980	6 075	9 157	-	395	182	96	84	263	1 020	1 102	23 848	28 726	297	39 310	3 215 652	29 574	8 335 400
1981	6 068	9 142	-	379	164	100	91	254	988	1 171	23 542	28 705	276	41 016	3 274 126	29 848	8 390 700
1982	6 069	9 115	-	378	144	100	98	249	969	1 175	23 399	28 460	206	41 406	3 326 069	28 745	8 000 400
1983	6 069	9 116	-	383	128	100	103	246	960	1 155	23 109	27 852	192	41 546	3 338 647	29 270	8 091 200
1984	5 979	9 035	-	384	113	100	109	239	945	<u>1 133</u>	<u>21 146</u>	27 053	181	40 991	3 275 840	29 842	7 980 900
1985	5 877	8 923	-	384	104	100	110	238	936	1 109	17 796	26 310	165	40 419	3 223 988	30 781	8 067 100
1986	5 878	8 936	-	383	86	100	110	244	923	1 094	17 862	25 484	137	<u>34 763</u>	<u>2 675 570</u>	27 783	6 952 200
1987	5 863	8 921	-	382	60	100	110	234	886	1 035	16 798	24 695	111	45 759	3 061 600	30 108	7 403 400
1988	5 863	8 921	-	382	10	100	110	234	834	991	16 292	23 273	86	46 226	3 147 000	33 006	7 815 900
1989	5 863	8 933	-	364	8	100	110	240	822	994	15 663	21 761	65	45 536	3 207 900	33 639	7 958 400
1990	5 846	8 844	-	358	-	100	110	236	804	1 001	15 395	20 162	45	45 998	3 330 900	34 562	8 356 700
1991	5 853	8 676	-	368	-	100	110	232	810	1 019	15 470	19 569	-	45 795	3 229 000	31 065	7 634 200
1992	5 853	8 836	-	356	-	100	110	223	789	1 027	15 286	18 945	-	45 101	3 057 200	32 587	7 847 800
1993	5 864	8 991	-	350	-	100	111	227	788	1 003	14 691	18 277	-	44 362	3 006 500	37 869	9 259 100
1994	5 859	8 915	-	350	-	100	111	223	784	1 002	14 656	17 368	-	43 989	3 036 800	<u>40 150</u>	<u>9 949 400</u>
1995	5 859	8 977	-	346	-	100	111	217	774	992	14 618	¹⁰⁾ 15 228	-	44 420	3 184 400	¹¹⁾ 39 387	¹¹⁾ 9 292 900
1996	5 859	8 940	-	338	-	100	113	215	766	982	14 344	14 820	-	47 000	3 254 000	37 717	8 805 500
1997	5 865	8 730	-	334	-	102	124	215	775	994	13 320	14 346	-	49 980	3 376 000	40 321	9 856 400
1998	5 867	8 725	-	314	-	102	129	216	761	1 003	12 737	13 945	-	51 370	3 377 000	40 740	9 885 000
1999	5 836	8 680	-	312	-	102	130	216	760	1 029	12 647	13 453	-	53 209	3 415 000	39 979	9 752 500
2000	5 854	8 705	-	299	-	112	130	212	753	1 047	12 292	12 722	-	54 783	3 405 000	40 501	10 106 600
2001	5 850	8 734	-	285	-	112	140	205	742	1 056	11 933	12 225	-	54 987	3 282 000	41 678	9 857 300
2002	5 850	8 736	-	279	-	119	148	202	748	1 077	11 528	11 711	-	57 695	3 318 000	41 679	9 663 800
2003	5 851	8 707	-	273	-	119	156	201	749	1 060	11 324	11 115	-	59 969	3 338 000	43 503	10 047 100

¹⁾ Lines owned by the Finnish Rail Administration.

²⁾ Excluding free tickets and road traffic.

³⁾ Excluding parcels and transport of the railway's own freight. Live animals and means of transport included in the ton-kilometres only since 1921.

⁴⁾ Since 1900 including contractual staff.

⁵⁾ Since 1938 private sidings no longer included in the length of line.

⁶⁾ Since 1945 including express goods.

⁷⁾ Data on narrow-gauge lines not included.

⁸⁾ Since 1960 including local traffic proper.

⁹⁾ Since 1971 including local traffic proper.

¹⁰⁾ Since 1995 the staff of VR-Group Ltd, VR Ltd and VR-Track Ltd.

¹¹⁾ Since 1995 train traffic only.

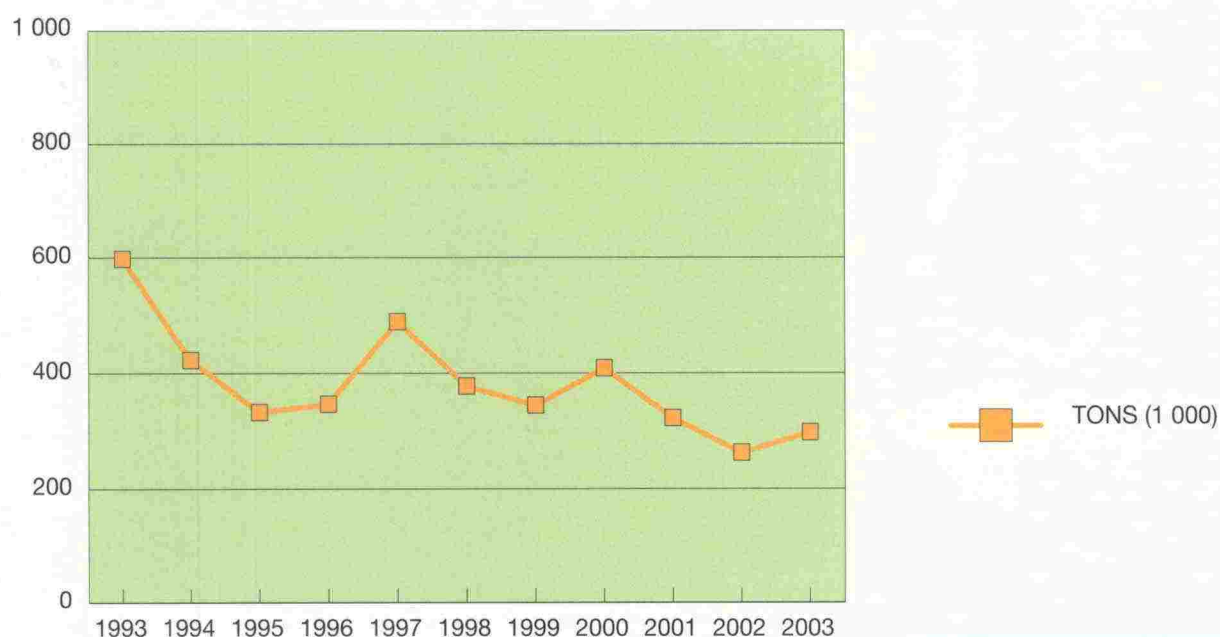


8 PRIVATE RAILWAYS

PRIVATE RAILWAYS AND THEIR ACTIVITY IN 1999 - 2003

Karhulan-Sunilan Rautatie Oy		1999	2000	2001	2002	2003
Opened for traffic on 3.5.1900						
Rail gauge	1.524 m					
Track length at end of year	km	11.1	10.9	10.2	10.2	10.2
Main tracks	km	6.1	6.1	6.1	6.1	6.1
Sidings	km	5.0	4.8	4.1	4.1	4.1
Length of line operated at end of year	km	6.1	6.1	6.1	6.1	6.1
Railway operating points at end of year		1	1	1	1	1
Rolling stock at end of year						
Motor locomotives		3	3	3	3	3
Staff at end of year		5	5	5	5	5
Number of trains						
Yearly		1 336	1 460	1 304	1 134	1 180
Daily		4.0	4.3	4.1	3.6	3.9
Train-km		8 016	8 760	7 824	6 804	7 080
Freight carried						
1 000 tons		345	409	323	263	298
1 000 tonne-km		2 070	2 454	1 938	1 578	1 788

FREIGHT CARRIED IN 1993 - 2003



9 DATA ON VARIOUS COUNTRIES AND THEIR RAILWAYS IN 2002

Countries		Finland	Sweden	Norway	Denmark	Spain	France	Austria	Germany
Population	million	5.2	8.9	4.5	5.3	40.3	59.2	8.1	82.4
Area	1 000 km ²	338.1	450.0	323.9	43.1	504.8	547.0	83.9	357.0
Gross national product ¹⁾	USD	25 300	27 000	42 000	32 100	16 200	23 400	25 500	24 100

Railways		VR, RHK	SJ AB, BV	NSB AS, JBV	DSB, BS	RENFE, FEVE, FGC	SNCF, RFF	ÖBB	DB AG
Staff	1 000	11.8	10.1	9.3	11.2	35.1	177.9	46.9	162.5
Length of line	km	5 850	9 860	4 077	2 047 ²⁾	13 676	29 352	5 647	35 755
		VR	SJ AB	NSB AS	DSB	RENFE	SNCF	ÖBB	DB AG
Train traffic									
Train-km	million	47.2	37.7	22.7	59.1	163.2	543.3	140.6	936.7
Passenger traffic		30.5	37.7	22.7	59.1	124.5	396.4	83.1	725.5
Freight traffic		16.7	-	-	-	38.6	143.9	46.9	211.2
Passenger traffic									
Number of journeys	million	58.0	35.7	49.8	151.5	485.5	888.6	184.8	1 656.8
Passenger-km	million	3 318	5 920	2 477	5 490	19 480	73 227	8 300	69 296
		VR	Green Cargo	Cargonet AS	Railion DK	RENFE	SNCF	ÖBB	DB AG
Freight traffic ³⁾									
Volumes of transport									
Ton	million	41.7	..	7.7	7.1	30.3	127.6	88.5	266.9
Tonne-km	million	9 664	12 002	2 191	1 867	13 253	50 036	17 626	72 423

¹⁾ Mrd USD \$ (Source: OECD, Main Economic Indicators).

²⁾ Year 2001.

³⁾ Commercial traffic.

10 RESUME SUR LES CHEMINS DE FER DE FINLANDE

10 SUMMARY RELATING TO THE RAILWAYS OF FINLAND

RHK & VR

RAPPORT ANNUEL A L'UNION INTERNATIONALE DES CHEMINS DE FER (UIC)

Col.		2003	2002
	TABLEAU 11 – LIGNES ¹⁾		
	Trafic ferroviaire		
	Ecartement des rails: 1.524 m		
	Longueur des lignes à la fin de l'année		
	Lignes non électrifiées		
4	total km	3 451	3 450
5	à simple voie "	3 451	3 450
	Lignes électrifiées ²⁾		
13	total "	2 400	2 400
14	à double voie et plus "	507	507
15	Total (Col. 4 + 13) "	5 851	5 850
	Lignes exploitées		
16	en trafic voyageurs seulement "	–	–
17	en trafic marchandises seulement "	1 875	1 873
	Transports routiers		
	Longueur exploitée des lignes à la fin de l'année		
19	à marchandises km	–	–
	TABLEAU 21 – MATERIEL MOTEUR		
	Effectifs à la fin de l'année		
	Locomotives diesel		
5	Nombre total	456	464
6	dont supérieures à 1 500 kW	20	20
	Locomotives électriques		
7	Nombre total	156	148
8	dont supérieures à 3 000 kW	156	148
	Automotrices diesel		
	Isolées		
9	Nombre total	–	–
	Rames indeformables		
10	Nombre	–	–
11	Nombre total des véhicules	–	–
	Automotrices électriques		
	Rames indeformables		
13	Nombre	119	119
14	Nombre total des véhicules	274	274
	Effectifs moyens annuels		
	Locomotives diesel		
17	total	460	468
18	immobilisées pour entretien et réparation	46	49
	Locomotives électriques		
19	total	152	144
20	immobilisées pour entretien et réparation	10	11
	Automotrices diesel		
	total	–	–
22	immobilisées pour entretien et réparation	–	–
	Automotrices électriques		
23	total	119	116
24	immobilisées pour entretien et réparation	13	13
	TABLEAU 22 – MATERIEL DE TRANSPORT DE VOYAGEURS		
	Effectifs à la fin de l'année		
	Véhicules des réseaux pour but commercial		
	Effectifs		
4	Voitures	787	758
5	Automotrices et remorques d'automotrices	273	272
6	Effectif total (Col. 4 + 5)	1 060	1 030
9	dont voitures climatisées	127	125
11	dont voitures-restaurants	58	58

¹⁾ Propriétaire Administration de la Voie Ferrée Finlandaise.

²⁾ Lignes alimentées en courant alternatif 25 000 volts 50 périodes, sous caténaire.

RHK & VR

ANNUAL REPORT TO THE INTERNATIONAL UNION OF RAILWAYS (UIC)

Col.		2003	2002
	TABLE 11 – LINES ¹⁾		
	Rail Traffic		
	Rail gauge: 1.524 m		
	Length of lines at the end of the year		
	Lines not electrified		
4	Total km	3 451	3 450
5	Single track "	3 451	3 450
	Electrified lines ²⁾		
13	Total "	2 400	2 400
14	Double and more than double track "	507	507
15	Total (Col. 4 + 13) "	5 851	5 850
	Lines used		
16	for passenger traffic only "	–	–
17	for freight traffic only "	1 875	1 873
	Road traffic		
	Length of lines worked at the end of the year		
19	Freight km	–	–
	TABLE 21 – TRACTIVE STOCK		
	Fleet strength at the end of the year		
	Diesel locomotives		
5	Total number	456	464
6	Above 1 500 kW	20	20
	Electric locomotives		
7	Total number	156	148
8	Above 3 000 kW	156	148
	Diesel railcars		
	Single units		
9	Total number	–	–
	Permanently-coupled trainsets		
10	Number	–	–
11	Total number of vehicles	–	–
	Electric railcars		
	Indivisible trainsets		
13	Number	119	119
14	Total number of vehicles	274	274
	Annual mean fleet strength		
	Diesel locomotives		
17	Total	460	468
18	Out of service for maintenance and repair	46	49
	Electric locomotives		
19	Total	152	144
20	Out of service for maintenance and repair	10	11
	Diesel railcars		
21	Total	–	–
22	Out of service for maintenance and repair	–	–
	Electric railcars		
23	Total	119	116
24	Out of service for maintenance and repair	13	13
	TABLE 22 – PASSENGER TRANSPORT STOCK		
	Stock at the end of the year		
	Railway-owned vehicles for commercial purpose		
	Stock		
4	Coaches	787	758
5	Railcars and railcar trailers	273	272
6	Total stock (Col. 4 + 5)	1 060	1 030
9	of which air-conditioned carriages	127	125
11	of which restaurant cars	58	58

¹⁾ Owned by Finnish Rail Administration.

²⁾ Lines fed by 25 000 volts, 50 cycle, alternating current (catenary system).



Col.		2003	2002
12	dont voitures-couchettes	-	-
13	dont voitures-lits	111	121
	Nombre de places		
	Assises		
14	1ère classe	2 960	2 983
15	2ème classe	62 192	63 071
16	Couchettes, 2ème classe	-	-
17	Voitures-lits, 1ère + 2ème classe (nombre maximal)	3 839	4 106
	Assises et couchées		
18	total (Col. 14 + 15 + 16 + 17)	68 991	70 160
	Fourgons		
19	Effectif total	35	45
	Effectifs moyens annuels		
	Voitures		
20	Effectif total	773	769
21	Immobilisées pour entretien et réparation	50	54
	Automotrices et remorques d'automotrices		
22	Effectif total	273	252
TABLEAU 23 – MATERIEL DE TRANSPORT DE MARCHANDISES			
Effectifs à la fin de l'année			
Véhicules des réseaux			
Wagons couverts			
4	Effectif	3 812	3 849
5	dont à bogies	778	805
6	Capacité totale en tonnes	130 097	131 867
Wagons tombereaux			
7	Effectif	705	885
8	dont à bogies	639	819
9	Capacité totale en tonnes	36 204	46 225
Wagons plats			
10	Effectif	6 164	6 126
11	dont à bogies	3 964	3 844
12	Capacité totale en tonnes	298 669	293 918
Autres wagons			
13	Effectif	643	668
14	dont à bogies	643	668
15	Capacité totale en tonnes	36 392	37 656
Total des wagons			
16	Effectif (Col. 4 + 7 + 10 + 13)	11 324	11 528
17	dont à bogies (Col. 5 + 8 + 11 + 14)	6 024	6 136
18	Capacité totale en tonnes (Col. 6 + 9 + 12 + 15)	501 362	509 666
Véhicules de particuliers			
Wagons			
19	Effectif total	303	314
20	Capacité totale en tonnes	12 756	13 170
Effectifs moyens annuels			
Véhicules des réseaux et de particuliers			
Wagons			
21	Total	11 017	11 206
22	Immobilisées pour entretien et réparation	208	215
25	Affectées exclusivement à des transports de service	1 970	2 058
TABLEAU 31 – EFFECTIF MOYEN ANNUEL DU PERSONNEL			
Administration générale			
3	Direction générale et Directions régionales	954	989
Exploitation ferroviaire			
Mouvement et trafic			
4	Services centraux et régionaux	320	326
5	Service des gares	1 651	1 744
6	Service des trains	2 221	2 302
7	Total (Col. 4 à 6)	4 192	4 372
Matériel et traction			
8	Services centraux et régionaux	121	119
9	Service de conduite des véhicules moteurs	1 937	1 949
10	Ateliers principaux	659	748
11	Autre personnel	723	761
12	Total (Col. 8 à 11)	3 440	3 577
Installation fixes			
13	Services centraux et régionaux	616	654

Col.		2003	2002
12	of which couchette coaches	-	-
13	of which sleeping cars	111	121
	Number of places		
	Seats		
14	1st class	2 960	2 983
15	2nd class	62 192	63 071
16	Couchettes 2nd class	-	-
17	Sleeping cars 1st and 2nd class (maximum number)	3 839	4 106
18	Seating and sleeping accommo- dation total (Col. 14 + 15 + 16 + 17)	68 991	70 160
	Vans		
19	Total stock	35	45
	Annual mean fleet strength		
	Coaches		
20	Total stock	773	769
21	Out of service for maintenance and repair	50	54
	Railcars and railcar trailers		
22	Total stock	273	252
TABLE 23 – FREIGHT TRANSPORT STOCK			
Stock at the end of the year			
Railway-owned vehicles			
Covered wagons			
4	Stock	3 812	3 849
5	of which bogie wagons	778	805
6	Total capacity in tonnes	130 097	131 867
High-sided open wagons			
7	Stock	705	885
8	of which bogie wagons	639	819
9	Total capacity in tonnes	36 204	46 225
Flat wagons			
10	Stock	6 164	6 126
11	of which bogie wagons	3 964	3 844
12	Total capacity in tonnes	298 669	293 918
Other wagons			
13	Stock	643	668
14	of which bogie wagons	643	668
15	Total capacity in tonnes	36 392	37 656
All wagons			
16	Stock (Col. 4 + 7 + 10 + 13)	11 324	11 528
17	of which bogie wagons (Col. 5 + 8 + 11 + 14)	6 024	6 136
18	Total capacity in tonnes (Col. 6 + 9 + 12 + 15)	501 362	509 666
Private owner's vehicles			
Wagons			
19	Stock	303	314
20	Total capacity	12 756	13 170
Annual mean fleet strength			
Railway-owned and private owner's vehicles			
Wagons			
21	Total	11 017	11 206
22	Out of service for maintenance and repair	208	215
25	Used exclusively for department traffic	1 970	2 058
TABLE 31 – ANNUAL MEAN STAFF STRENGTH			
General Management			
3	General headquarters and regional headquarters	954	989
Railway operations			
Operating and traffic			
4	Central and regional offices	320	326
5	Station services	1 651	1 744
6	Train services	2 221	2 302
7	Total (Col. 4 to 6)	4 192	4 372
Traction and rolling stock			
8	Central and regional offices	121	119
9	Motor-vehicle driving staff	1 937	1 949
10	Main workshops	659	748
11	Other staff	723	761
12	Total (Col. 8 to 11)	3 440	3 577
Permanent way			
13	Central and regional offices	616	654

Col.		2003	2002
14	Entretien et surveillance des installations fixes	1 843	2 011
15	Total (Col. 13 + 14)	2 459	2 665
16	Total (Col. 3 + 7 + 12 + 15)	11 045	11 603
	Autres exploitations		
17	Services routiers	-	-
19	Diverses	70	108
20	Travaux d'établissement, de reconstruction, etc. ³⁾
	Total du personnel du réseau		
21	Total du personnel (Col. 16 + 17 + 19 + 20)	11 115	11 711
22	dont statutaires	10 832	11 290
23	Travailleurs fournis par des firmes	..	..
	TABLEAU 41 – PARCOURS DES TRAINS		
	Locomotives diesel		
7	Total (Col. 8 + 9) 1 000 km	10 788	11 043
8	Affectées au trafic voyageurs "	4 561	4 529
9	Affectées au trafic marchandises ⁴⁾ "	6 227	6 514
	Locomotives électriques		
10	Total (Col. 11 + 12) 1 000 km	27 346	26 772
11	Affectées au trafic voyageurs "	16 788	16 573
12	Affectées au trafic marchandises "	10 558	10 199
	Automotrices diesel		
13	Total (Col. 14 + 15) 1 000 km	-	-
14	Affectées au trafic voyageurs "	-	-
15	Affectées au trafic marchandises "	-	-
	Automotrices électriques		
16	Total 1 000 km	9 926	9 365
17	Affectées au trafic voyageurs "	9 926	9 365
	Tous modes de traction		
19	Total (Col. 20 + 21) 1 000 km	48 060	47 180
20	Affectées au trafic voyageurs (Col. 8 + 11 + 14 + 17) "	31 275	30 467
21	Affectées au trafic marchandises (Col. 9 + 12 + 15) "	16 785	16 713
	TABLEAU 42 – TONNAGE KILOMETRIQUE BRUT REMORQUE DES TRAINS		
	Locomotives diesel		
7	Total (Col. 8 + 9) 1 000 000 km	7 979	8 051
8	Affectées au trafic voyageurs "	1 261	1 212
9	Affectées au trafic marchandises "	6 718	6 839
	Locomotives électriques		
10	Total (Col. 11 + 12) 1 000 000 km	20 620	19 383
11	Affectées au trafic voyageurs "	6 407	6 169
12	Affectées au trafic marchandises "	14 213	13 214
	Automotrices diesel		
13	Total (Col. 14 + 15) 1 000 000 km	-	-
14	Affectées au trafic voyageurs "	-	-
15	Affectées au trafic marchandises "	-	-
	Automotrices électriques		
16	Total 1 000 000 km	1 637	1 540
17	Affectées au trafic voyageurs "	1 637	1 540
	Tous modes de traction		
19	Total (Col. 20 + 21) 1 000 000 km	30 236	28 974

³⁾ Personnel compris dans la colonne 16.

⁴⁾ Y compris les parcours des transports de service.

Col.		2003	2002
14	Permanent way maintenance and supervision	1 843	2 011
15	Total (Col. 13 + 14)	2 459	2 665
16	Total (Col. 3 + 7 + 12 + 15)	11 045	11 603
	Other operations		
17	Road transport services	-	-
19	Miscellaneous	70	108
20	Net works, reconstruction, etc. ³⁾
	Total staff belonging to the railway		
21	Total staff (Col. 16 + 17 + 19 + 20)	11 115	11 711
22	of which permanent staff	10 832	11 290
23	Staff supplied by contractors	..	..
	TABLE 41 – TRAIN-KILOMETRES		
	Diesel locomotives		
7	Total (Col. 8 + 9) 1 000 km	10 788	11 043
8	Passenger traffic "	4 561	4 529
9	Freight traffic ⁴⁾ "	6 227	6 514
	Electric locomotives		
10	Total (Col. 11 + 12) 1 000 km	27 346	26 772
11	Passenger traffic "	16 788	16 573
12	Freight traffic "	10 558	10 199
	Diesel railcars		
13	Total (Col. 14 + 15) 1 000 km	-	-
14	Passenger traffic "	-	-
15	Freight traffic "	-	-
	Electric railcars		
16	Total 1 000 km	9 926	9 365
17	Passenger traffic "	9 926	9 365
	All types of traction		
19	Total (Col. 20 + 21) 1 000 km	48 060	47 180
20	Passenger traffic (Col. 8 + 11 + 14 + 17) "	31 275	30 467
21	Freight traffic (Col. 9 + 12 + 15) "	16 785	16 713
	TABLE 42 – TRAIN GROSS TONNE-KILOMETRES HAULED		
	Diesel locomotives		
7	Total (Col. 8 + 9) 1 000 000 km	7 979	8 051
8	Passenger traffic "	1 261	1 212
9	Freight traffic "	6 718	6 839
	Electric locomotives		
10	Total (Col. 11 + 12) 1 000 000 km	20 620	19 383
11	Passenger traffic "	6 407	6 169
12	Freight traffic "	14 213	13 214
	Diesel railcars		
13	Total (Col. 14 + 15) 1 000 000 km	-	-
14	Passenger traffic "	-	-
15	Freight traffic "	-	-
	Electric railcars		
16	Total 1 000 000 km	1 637	1 540
17	Passenger traffic "	1 637	1 540
	All types of traction		
19	Total (Col. 20 + 21) 1 000 000 km	30 236	28 974
20	Passenger traffic (Col. 8 + 11 + 14 + 17) "	9 305	8 921
21	Freight traffic (Col. 9 + 12 + 15) "	20 931	20 053
	TABLE 43 – ROLLING STOCK-KILOMETRES⁵⁾		
	Tractive vehicle kilometres by type of traction		
5	Diesel locomotives 1 000 km	21 566	22 393
6	Electric locomotives "	32 188	31 245
7	Diesel railcars "	-	-
8	Electric railcars "	12 672	11 938
9	All types of traction (Col. 5 to 8) "	66 426	65 576
10	Coaches, railcars and railcar trailers (in wagon-kilometres)	158 326	152 991

³⁾ Staff included in column 16.

⁴⁾ Including distances run by trains for departmental traffic.

⁵⁾ Total kilometres on the railway network, including foreign vehicles.



Col.		2003	2002
20	Affectées au trafic voyageurs (Col. 8 + 11 + 14 + 17)	9 305	8 921
21	Affectées au trafic marchandises (Col. 9 + 12 + 15)	20 931	20 053
TABLEAU 43 – PARCOURS DU MATERIEL ROULANT ⁵⁾ Parcours des véhicules moteurs par mode de traction			
5	Locomotives diesel 1 000 km	21 566	22 393
6	Locomotives électriques	32 188	31 245
7	Automotrices diesel	–	–
8	Automotrices électriques	12 672	11 938
9	Tous modes de traction (Col. 5 à 8)	66 426	65 576
10	Voitures automotrices et remorques d'automotrices (en wagon-kilomètres)	158 326	152 991
Wagons (en wagon-kilomètres)			
11	Total 1 000 km	460 677	444 141
12	dont chargés	252 368	241 540
13	Fourgons ⁶⁾	7 569	7 390
TABLEAU 51 – TRAFIC COMMERCIAL VOYAGEURS ⁷⁾ Trafic ferroviaire			
Nombre de voyageurs			
3	Total 1 000	59 909	57 695
4	en 2ème classe	..	..
Nombre de voyageurs-kilomètres			
5	Total 1 000 000 km	3 338	3 318
6	en 2ème classe	..	..
7	Parcours moyen d'un voyageur (Col. 5 x 1 000: Col. 3) km	55,7	57,5
Bagages			
Automobiles accompagnées			
8	Nombre	32 893	33 632
9	Poids (en tonnes)	49 340	50 448
Autres			
10	Poids (en tonnes)	636	699
TABLEAU 61 – TRAFIC MARCHAN- DISES Trafic ferroviaire			
Tonnes transportées (en milliers)			
Transport commerciaux par catégorie de trafic			
3	Colis express et envois de détail	–	–
4	Wagons complets	43 503	41 679
5	dont par trains complets	..	..
6	Wagons de particuliers vides	–	–
7	Total (Col. 3 + 4 + 6)	43 503	41 679
8	Transports en service	44	54
9	Total général (Col. 7 + 8)	43 547	41 733
Tonnes-kilomètres			
Transports commerciaux par catégorie de trafic			
10	Colis express 1 000 000 km	–	–
11	Wagons complets	10 047	9 664
12	dont par trains complets	..	..
13	Wagons de particuliers vides	–	–
14	Total (Col. 10 + 11 + 13)	10 047	9 664
15	Transports en service	10	16
16	Total général (Col. 14 + 15)	10 057	9 680
Parcours moyen d'une tonne			
Transports commerciaux			
17	(Col. 10 + 11) x 1 000: (Col. 3 + 4) km	230,9	231,9
dont transports intermodaux à charge et à vide			
18	Nombre d'unités intermodales transportées (en milliers)	148	122
19	Nombre de wagons chargés d'unités intermodales (en milliers)	124	99
20	Tonnes transportées (en milliers)	1 919	1 688
21	Tonnes kilomètres (en millions)	..	..

⁵⁾ Total des parcours sur le Réseau, y compris les véhicules étrangers.

⁶⁾ Non compris les wagons pour transport d'autos du trafic "Autos accompagnées".

⁷⁾ Voyageurs payants seulement, quel que soit le taux de réduction appliquée.

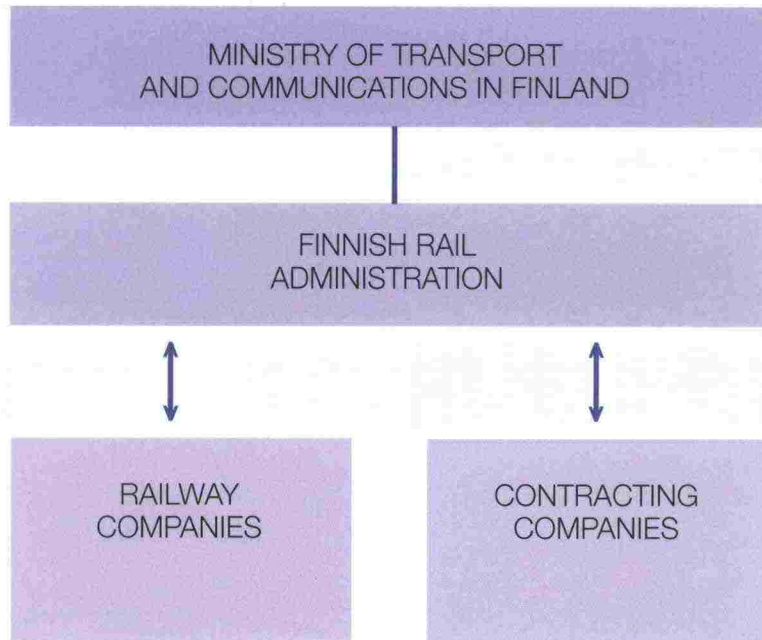
Col.		2003	2002
Wagons (in wagon-kilometres)			
11	Total 1 000 km	460 677	444 141
12	Loaded	252 368	241 540
13	Vans ⁶⁾	7 569	7 390
TABLE 51 – REVENUE-EARNING PASSENGER TRAFFIC ⁷⁾ Rail traffic			
Number of passengers carried			
3	Total 1 000	59 909	57 695
4	2nd class	..	..
Number of passenger-kilometres			
5	Total 1 000 000 km	3 338	3 318
6	2nd class	..	..
7	Mean passenger distance (Col. 5 x 1 000: Col. 3) km	55.7	57.5
Baggage			
Accompanied cars			
8	Number	32 893	33 632
9	Weights (in tonnes)	49 340	50 448
Other			
10	Weight (in tonnes)	636	699
TABLE 61 – FREIGHT TRAFFIC Rail traffic			
Tonnes carried (in thousands)			
Revenue-earning traffic			
By traffic category			
3	Express parcels and smalls traffic	–	–
4	Full wagonloads	43 503	41 679
5	of which full trainloads	..	..
6	Empty private-owners' wagons	–	–
7	Total (Col. 3 + 4 + 6)	43 503	41 679
8	Works traffic	44	54
9	Grand total (Col. 7 + 10)	43 547	41 733
Tonne-kilometres			
Revenue earning traffic			
By traffic category			
10	Express parcels and smalls traffic 1 000 000 km	–	–
11	Full wagonloads	10 047	9 664
12	of which full trainloads	..	..
13	Empty private-owners' wagons	–	–
14	Total (Col. 10 + 11 + 13)	10 047	9 664
15	Works traffic	10	16
16	Grand total (Col. 14 + 15)	10 057	9 680
Average length of haul of one tonne			
Revenue-earning traffic			
17	(Col. 10 + 11) x 1 000: (Col. 3 + 4) km	230.9	231.9
of which loaded and empty intermodal traffic			
18	Number of intermodal units carried (in thousands)	148	122
19	Number of wagons loaded with intermodal units (in thousands)	124	99
20	Tonnes carried (in thousands)	1 919	1 688
21	Tonne-kilometres (in millions)	..	..

⁶⁾ Not included car-carrier wagons of car-sleeper train traffic.

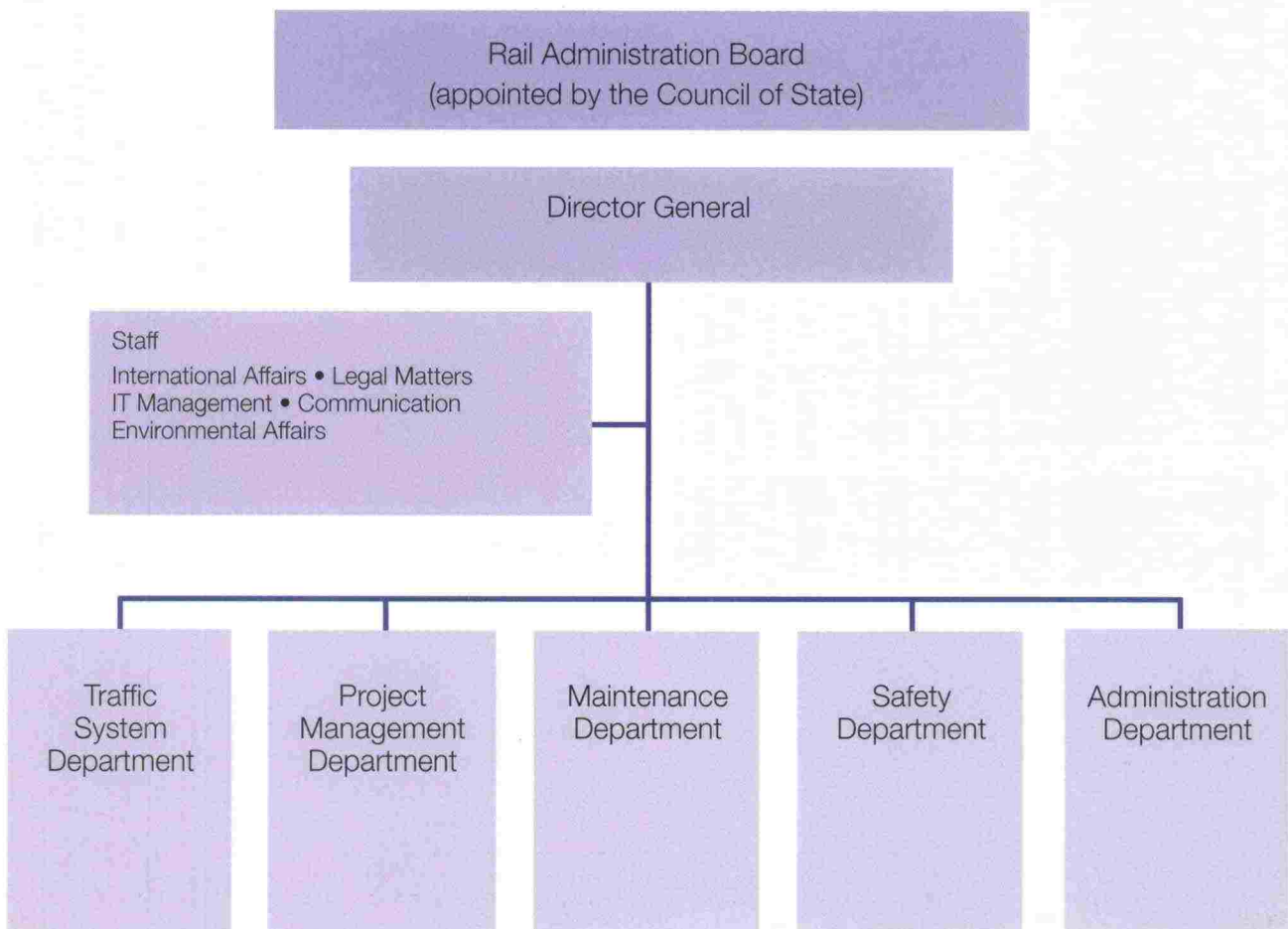
⁷⁾ Fare-paying passengers only irrespective of the reduction rate applied.



ROLE OF THE FINNISH RAIL ADMINISTRATION



ORGANISATION OF THE FINNISH RAIL ADMINISTRATION





THE FINNISH RAILWAY STATISTICS 2004

Publisher: Finnish Rail Administration

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