

**CHAPTER 3 GENERAL TRANSPORT
SITUATIONS**

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3.1 Outlook of the Polish Transport System

Transport is one of the major economic sectors in Poland. It employed approximately 800,000 people (about 8% of the socialized sector employment), contributed about 5% to the Gross Domestic Product (GDP), and involved 5.5% of total public sector investment in 1990. The transport sector consumed about 7 million tons of coal equivalent on energy (about 6% of national energy consumption). The subsidies provided by the government were equal to about 1.5% of the GDP.

The Polish national transport system consists of railways, roads, maritime and inland water transport, air transport, and pipeline transport. Poland has reconstructed, improved, and developed its transport network after the World War II to a comparatively extensive network, which is true especially for the railway and road networks. During the old regime, the transport system was totally controlled by the government and focused on facilitating international economic transactions between Poland and CMEA countries.

In correspondence with the transformation of the Polish economy from centrally planned to a market economy, the Polish transport system is undergoing a transition process away from central government control to more decentralized transport systems including privatization. This movement is particularly needed to attain integration of the Polish transport system with that of the European Community in the future.

Since the beginning of 1990, the government has introduced a number of new legislations to restructure the old transport administration system aiming at achieving higher efficiency through competition, reducing government subsidies, lowering barriers of international transport services, changing ownership and institutional framework and so on. It is likely that the restructuring will take several years to come mainly due to the sharply declining transport demand, shortage of financial resources available in the transport sector and necessity of retraining managers and employees adaptable to a market economy.

3.2 Transport Network

3.2.1 General Characteristics of Transport Network

Poland, with its total area of 312,683 square kilometers, has an extensive transport network comprising every mode of transport: (1) railways with a route length of 26,228 km including 11,387 km (43.4%) of electrified lines; (2) public roads with a length of 343,767 km including 217,994 km (63.4%) of paved roads; (3) four commercial ports including Gdansk, Gdynia, Szczecin and Swinoujscie as international outlets; (4) inland waterways of about 3,700 km mainly comprising Odra and Wisla rivers; (5) eleven major commercial airports; and (6) pipelines for oil and oil product transport.

During the old regime emphasis was placed on expanding the transport network mainly for carrying such bulky cargoes as mining products, heavy industrial materials and products as well as ensuring access to every part of the country including communes, farm lands and tourism destinations.

Due to the changing economic circumstances of the country, however, the transport network inherited from the past appears to have various qualitative shortcomings to comply with the newly emerging transport demand. First, the quality of the transport network needs to be upgraded to comply with international traffic which requires higher level of services in terms of speed, safety and reliability. Second, the traffic capacity needs to be increased to cope with the rapidly increasing car ownership particularly in and in the vicinity of urban agglomerations. Third, inter-modal coordination needs to be improved to facilitate general cargo transport, particularly between railways, ports, and roads.

The financial situation of the country, however, constraints the immediate transformation of the transport network to satisfy these qualitative requirements although there are many proposals for new investments. Short term priority needs to be placed on maintenance, rehabilitation and dissolution of bottle-necks of the existing network.

It is a worldwide tendency that the role of railways and inland waterways has been declining relative to the increasing role of road and air transport. This is attributable to the economic structural changes with the increasing importance to light industries as well as the rising disposal income of people, both of which require higher quality of transport services. From this point of view, the enlarged railway network of the country needs to be streamlined by including closure of local railway lines which have lost the *raison d'être* that was used to exist prior to the motorization era.

3.2.2 International Transport Network

Poland is situated at the crossroads connecting the east (CISs) and the west (EC countries) as well as the north (Scandinavian countries) and the south (Eastern and Central European countries). As long as Poland had been a member of the former CMEA League, this location did not give any significant advantage to Poland. However, the locational advantage has been regained due to the collapse of the Soviet Union into CISs in the east and the emergence of an unified European Community in the west. Development of the international transport network has become a prime concern for Poland as well as for the international community.

The east-west link is of great importance both for Polish integration into the EC economy and the economic interaction of the EC countries with the CISs as well as with the Baltic countries. The north-south link is also important to promote economic interaction between Poland and the Scandinavian countries, between Poland and the countries in the south, and between the Scandinavian countries and the countries in the south (Fig.3.2.1).

In the east-west direction, three modes of transport are available for freight transport including railways, roads and maritime transport.

Main international railways in this direction are:

- (1) E20: Kunowice - Poznan - Warsaw - Terespol;
- (2) E30: Zgorzelec - Wroclaw - Katowice - Krakow - Przemysl - Medyka; and
- (3) E59: Swinoujscie - Szczecin - Kostrzyn - Zielona Gola - Wroclaw - Opole - Chalupki.

Main international arterial highways in this direction are:

- (1) E30: (Berlin) - Swiecko - Poznan - Warsaw - Terespol - (Moscow);
- (2) E40: (Dresden) - Zgorzelec - Legnica - Wroclaw - Opole - Gliwice - Krakow - Przemysl - (Lvov);
- (3) E28: (Berlin) - Kowbaskowo - Szczecin - Goleniow - Koszalin - Gdansk;
- (4) E36: (Berlin) - Olszyna - Legnica;
- (5) E67: (Prague) - Kudowa - Wroclaw - Piotrkow Tryb. - Warsaw; and
- (6) E462: (Brno) - Cieszyn - Krakow.
- (7) E-371: Radom - Rzeszow - Barwinek (Koszyce)

Main maritime routes for general cargo transport in this direction are:

- (1) Rotterdam - Szczecin / Swinoujscie; and
- (2) Hamburg / Bremen - Gdansk / Gdynia.

In the north-south direction, three modes of transport are also available for freight transport including railways, roads and ferry transport.

Main international railway line in this direction is:

- (1) E65: Gdynia - Gdansk - Warsaw - Katowice - Zebrzydowice.

Main international motorways in this direction are:

- (1) E65: (Ystad) - Swinoujscie - Wolin - Goleniow - Szczecin - Swiebodzin - Jelenia Gola - (Prague);
- (2) E75: (Helsinki) - Gdansk - Swiecie - Krosniewice - Lodz - Piotrkow Tryb. - Katowice - Cieszyn - (Bratislava);
- (3) E77: Gdansk - Elblag - Warsaw - Krakow - Chyzne - (Budapest); and
- (4) E261: Swiecie - Poznan - Wroclaw - (Prague).

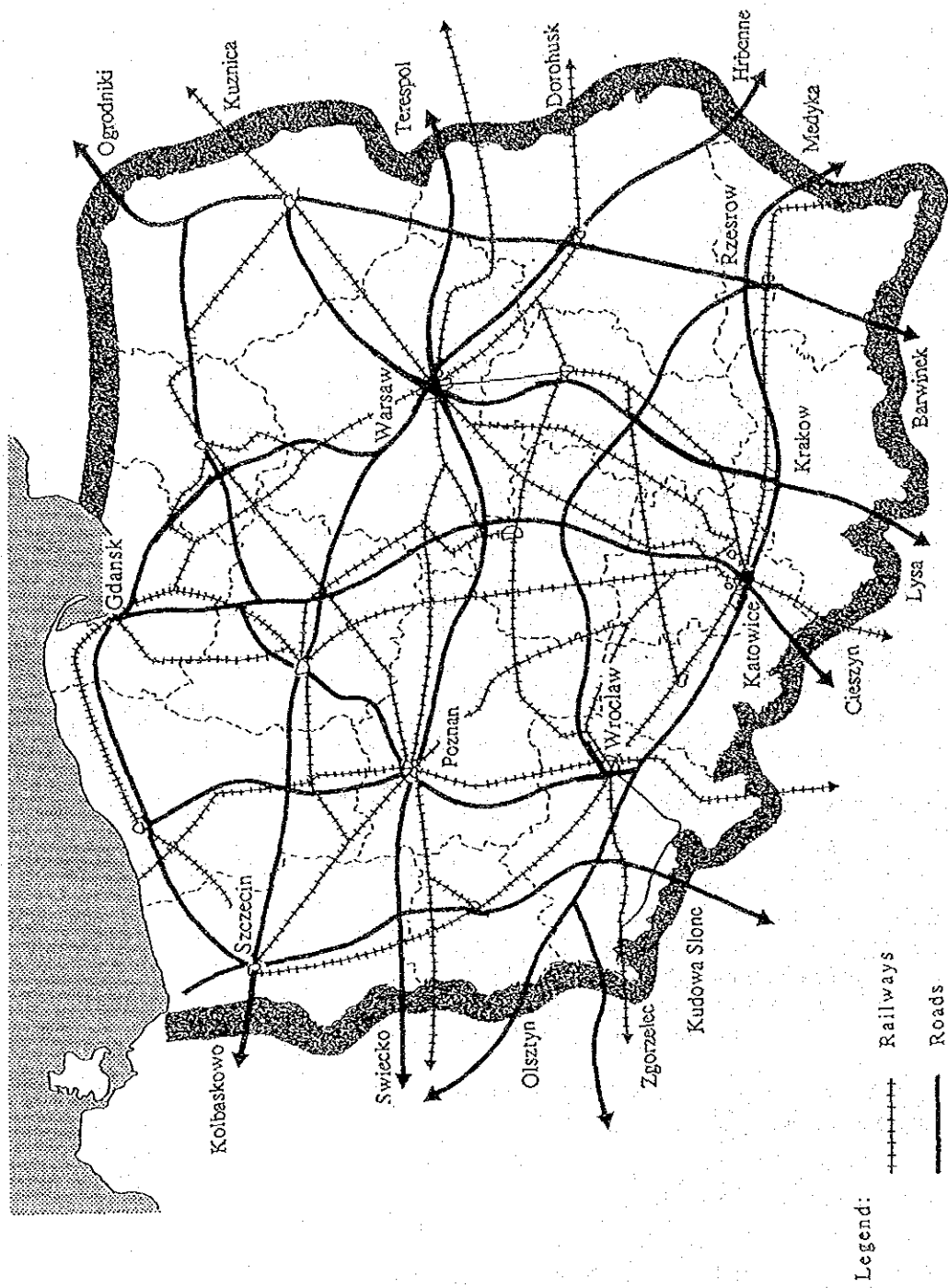


Fig. 3.2.1 Railway and Road Transport Network

Main ferry links connecting Polish ports with the Scandinavian countries are Swinoujscie - Ystad/Copenhagen and Gdansk - Helsinki/Oxelosund.

International passenger transport is also provided by the above railways, roads and ferry links, on top of the air transport services.

At the moment, however, this international transport network has not been developed well enough to cope with the quality requirements of general cargo and passenger transport. The inefficient border crossings including customs clearance gives hinderance to the free flow of freight and passengers.

3.3 Present Transport Demand

3.3.1 Cargo Transport Demand

Cargo transport in Poland peaked at 2.7 billion tons in 1980. Since then, it has fluctuated from 1.8 to 2.2 billion tons per year. Historically, about 75% of ton shipments go by road. The rail share, which was about 22% of the total during most of the 1980s, has declined to less than 17%. Inland waterways, pipelines, and air modes constitute only a minor share of the national cargo transport. Composite cargo ton kilometer shipments exhibit similar patterns with a peak in 1980 (198.6 billion ton kilometers) and a decline in recent years for the rail share. Relatively minor roles are played by inland waterways, pipelines and air transport (Table 3.3.1).

Table 3.3.1 Freight Transport by Transport Mode

	1980		1989		1990		1991	
	mil.	%	mil.	%	mil.	%	mil.	%
Tonnage	2,712.9	100	1,791.9	100				
Railway	482.1	18	388.9	22	278.1		227.7	
Roads (Truck)	2,167.9	80	1,347.8	75	1,399.1		1,396.0	
Air	0.0	-	0.0	-				
Pipeline	40.7	1	41.2	2				
Inland Water	22.2	1	14.0	1				
Ton-Kilometers	198,645	100	168,461	100				
Railway	134,700	68	111,140	66	83,500		65,100	
Roads (Truck)	44,500	22	38,448	23				
Air	30	-	39	-				
Pipeline	17,115	9	17,661	10				
Inland Water	2,300	1	1,193	1				
Average km	73		74					
Railway	279		278		300		286	
Roads (Truck)	21		27					
Air	3,000		3,900					
Pipeline	420		250					
Inland Water	104		85					

Source: Statistical Year Book of Poland; Research Institute of Transport Economics, Poland

However, a difference is apparent in the modal distribution. Rail, typically carries 15-20% of ton shipments. However, it accounts for 65-70% of ton-kilometers. The average distance over which rail cargo is transported has, over the last decade, remained fairly stable at about 280 kilometers. Truck cargo shipments travel over much shorter distances averaging between 20 and 30 kilometers. In comparison, the average 1989 cargo transport distance averaged 390, 250, and 85 kilometers for air, pipeline, and inland waterways respectively.

A comparison of cargo transport activity (tons and ton-kilometers) between Poland and several West European nations reveals some similarities, but also major differences.

- (1) Tons transported are, on a proportionate basis, similar to Poland with 75-80% of total European cargo travelling by road. The rail tonnage share is slightly lower than that of Poland largely due to the more pronounced role of inland waterways.
- (2) The composite of all road-based modes for European countries was, in recent years, between 55% and 60% of ton-kilometers overall. Rail declined to less than 20% of the total.
- (3) The European share of rail in terms of ton-kilometer is about twice as large as the share in terms of ton, while in Poland this difference is approximately triple.

The West European trends suggests that the transport of cargo tons per capita increases with an increasing national income, but within a range of 35-45 tons per capita (total all modes). During 1985, at a weighted GDP per capita of under US\$3000, a group of European nations (BG, H, DDR, CS, PL) generated cargo shipments averaging about 70 tons per capita, all modes combined. In comparison, from 1981-1989 shipments in Poland were between 50-60 tons per capita.

Such discrepancies can be explained by different methods employed at the national blocks in defining a cargo "trip" (linked versus unlinked trip), inherent efficiencies in operating transport systems, as well as circuitous shipments caused by centrally controlled distribution systems. Consequently, statistics of East European nations such as Poland are likely to contain inflated unit cargo transport rates.

Changes in annual West European cargo transport activity (tons per capita shipped) exhibit a strong correlation to general levels of international economic health (represented by GDP per capita in constant 1985 US\$). The elasticities suggest that a negative change in annual GDP per capita results in a higher reduction in cargo activity than the upturn corresponding to an increase of the GDP per capita.

3.3.2 Passenger Transport Demand

Passenger trips in Poland, excluding those by private passenger car, are dominated by railway and bus. These modes account for more than 99% of passengers carried, and more than 97% of passenger kilometers traveled. The number of passengers carried by railways has steadily decreased over the last decade (from 1,100.5 million persons in 1980 to 951.5 million persons in 1989). The bus share has increased over the same period from 2,725.7 million persons to 2,940.5 million persons. Typical 1989 distances average 59 km and 25 km on rail and bus modes respectively (Table 3.3.2).

Table 3.3.2 Passenger Transport by Transport Mode

	1980		1989		1990		1991	
	mil.	%	mil.	%	mil.	%	mil.	%
Passengers	3,490.9	100	3,524.1	100				
Railway	1,100.5	32	952.0	27	790		650	
Roads (Bus)	2,379.2	68	2,564.0	73				
Air	1.8	-	2.3	-				
Inland Water	9.4	0	5.8	0				
Passenger-Kms	98,389	100	118,905	100				
Railway	46,325	68	55,888	47	50,400		40,000	
Roads (Bus)	49,223	50	58,062	49				
Air	2,714	3	4,887	4				
Inland Water	127	0	68	0				
Average km	28		33					
Railway	42		59		64		62	
Roads (Bus)	21		23					
Air	1,508		2,125					
Inland Water	13		12					

Source: Statistical Year Book of Poland; Research Institute of Transport Economics, Poland

Total passenger kilometers in Poland, including rail, bus, passenger car, and air, has increased steadily over the last two decades totalling some 4,800 annual passenger kilometers per capita in 1989. Travel by inland water transport was small. Air travel is insignificant compared to travel by bus and rail. The rail share, which stood at 50% in 1970 and 35% in 1980, has eroded to about 30% in 1989. Private auto, in comparison, exhibits the strongest growth and, in 1989 represented 35% of total passenger kilometers. The share of bus (public road) passenger kilometers has remained stable in the 30 percentage range with small but steady annual decreases.

The average West European citizen has historically travelled more extensively than their Polish counterpart totalling, on a 14-nation 1987 average, almost 9,000 passenger kilometers per capita. The private auto predominated, totalling 81% of the total expended passenger kilometers per capita. Rail trips total only 7% of the total per capita passenger kilometers in 1987. Bus travel, as is the case for Poland, has remained stable over the last two decades generally falling into the 11-12% range.

Travel propensity is related to the GDP per capita. That is, the degree and extent of personal travel increases as wealth increases. In addition, as passenger car ownership changes, modal travel preferences modify. The trend in Europe has been an increase in the ratio of private to public trips corresponding to increases in passenger car ownership. At present, only in the East European countries does the composite ratio lies below unity. That is, only in Eastern Europe does travel by public modes exceeds private travel.

The trend in public modes sub-modal split implies that, based on a 14-nation West European composite, bus travel is preferred over rail travel, this is increasingly true as vehicle ownership rates grow. However, the East and West European national patterns which underlie composite trends are likely influenced by national policy, country size and the extent of the rail system.

In recent years, private car ownership has rapidly increased from 3,671,000 in 1985 to 4,846,000 in 1989, 5,260,000 in 1990 and 6,112,000 in 1991 (Table 3.3.3). Due to this rapid growth, the private car ownership rate per 1,000 population increased from 98.3 in 1985 to 127.4 in 1989, 137.8 in 1990 and 159.5 (estimate) in 1991. The ownership rate in Warsaw voivodship in 1991 is estimated in the range of 300.

Table 3.3.3 Registered Number of Vehicles

	1985	1989	1990	1991	unit: 1,000 vehicles
1) Motorcycles	1,547	1,411	1,357	1,236	(12.5 %)
2) Cars	3,671	4,846	5,260	6,112	(62.0)
3) Trucks	780	977	1,045	1,151	(11.7)
4) Buses	83	91	92	87	(0.9)
5) Tractor/Others	1,008	1,271	1,287	1,275	(12.9)
6) Total	7,089	8,596	9,041	9,861	(100.0)
7) Population (1000)	37,341	38,038	38,183	38,328	
8) Car Ownership	98.3	127.4	137.8	159.5	

Note: Population in 1991 is estimate

Source: Statistical Year Book of Poland by GUS

3.3.3 International Vehicle Traffic

Vehicle crossings of the Polish border continue to exhibit impressive growth totaling in excess of 23.7 million two-way trips in 1991. Typically, between 90 and 95 percent of total crossings consist of passenger-carrying vehicles (Table 3.3.4). Growth at the Western (German) border is particularly impressive: a 1988 total of 1.94 million vehicles has, by 1991, grown to 14.9 million vehicles an average growth rate of almost 100 percent per annum. In other words, traffic has virtually doubled every year since 1988. Partial 1992 data suggest this pattern will be repeated, if not exceeded, during the current year.

The western border is, due to this rapid recent growth, the dominant frontier in terms of vehicle crossings. During 1991, almost two-thirds of vehicles entering or leaving Poland did so at the Western border. The Southern (CSFR) border accounted for near 30 percent and the Eastern border less than 10 percent of total 1991 trips. The Northern (Scandinavian) border continues to remain small in both relative and absolute terms.

Table 3.3.4 Historic Vehicle Traffic at Polish Border Crossings

BORDER	VEHICLE TYPE	ANNUAL TWO-WAY VEHICLE AT POLISH BORDER CROSSINGS					
		1986	1987	1988	1989	1990	1991
EAST	PASS VEH	158762	247096	460847	918171	1171092	1764870
	TRUCKS	87557	87297	119460	138543	184764	243950
	TOTAL	246319	334393	580307	1056714	1355856	2008820
SOUTH	PASS VEH	1055194	1364402	1518748	3232254	3920108	6396424
	TRUCKS	89525	105281	120628	130709	159480	250482
	TOTAL	1144719	1469683	1639376	3362963	4079588	6646906
WEST	PASS VEH	982679	1229233	1657777	3215025	6518559	13890045
	TRUCKS	212317	237895	280536	378726	686508	1023724
	TOTAL	1194996	1467128	1938313	3593751	7205067	14913769
NORTH	PASS VEH	48120	50722	66480	110574	130834	146087
	TRUCKS	35935	36618	43224	45513	46721	46514
	TOTAL	84055	87340	109704	156087	177555	192601
TOTAL	PASS VEH	2244755	2891453	3703852	7476024	11740593	22197426
	TRUCKS	425333	467091	563848	693491	1077473	1564670
	TOTAL	2670088	3358544	4267700	8169515	12818066	23762096
BORDER	VEHICLE TYPE	AVERAGE COMPOUND PERCENT GROWTH PER ANNUM					
		86-87	87-88	88-89	89-90	90-91	88-91
EAST	PASS VEH	55.6	86.5	99.2	27.5	50.7	56.5
	TRUCKS	-0.3	36.8	16.0	33.4	32.0	26.9
	TOTAL	35.8	73.5	82.1	28.3	48.2	51.3
SOUTH	PASS VEH	29.3	11.3	112.8	21.3	63.2	61.5
	TRUCKS	17.6	14.6	8.4	22.0	57.1	27.6
	TOTAL	28.4	11.5	105.1	21.3	62.9	59.5
WEST	PASS VEH	25.1	34.9	93.9	102.8	113.1	103.1
	TRUCKS	12.0	17.9	35.0	81.3	49.1	54.0
	TOTAL	22.8	32.1	85.4	100.5	107.0	97.4
NORTH	PASS VEH	5.4	31.1	66.3	18.3	11.7	30.0
	TRUCKS	1.9	18.0	5.3	2.7	-0.4	2.5
	TOTAL	3.9	25.6	42.3	13.8	8.5	20.6
TOTAL	PASS VEH	28.8	28.1	101.8	57.0	89.1	81.6
	TRUCKS	9.8	20.7	23.0	55.4	45.2	40.5
	TOTAL	25.8	27.1	91.4	56.9	85.4	77.2

Source: Polish Border Authority (BAA)

3.4 Transport Policy and Legal Institutions

3.4.1 Transport Policy

The national transport policy needs to address: (1) the development of the inter-regional transport system to encourage regional economic development, (2) the development of the rural transport system to provide transport in sparsely populated areas, and (3) the development of urban transport to relieve chronic deficiencies of transport infrastructure and the deterioration the living environment caused by vehicular traffic. However, due to the urgent requirement for international integration of Poland, a focus also needs to be addressed to make the existing transport system adaptable to the world transport system in a deregulated transport market.

Policy issues include both physical and institutional changes in both passenger and cargo transport. In most countries in their early stages of development, emphasis used to be placed on the development of transport infrastructure to support and encourage economic growth. As progress gains momentum, also administrative changes become a focus of development efforts.

Poland, however, seems to differ from these developing countries in a market economy in the following three respects: (1) existence of an extensive transport infrastructure and facilities, (2) prevalence of outdated transport technologies, and (3) a systemic indifference to efficiency or productivity of transport services. Efforts will be needed to upgrade the quality of transport infrastructure, replace the outdated technologies by new ones and to enhance efficiency and quality of transport services through sound competition.

Deregulation and privatization are keys to the reforms now under way. However, policy measures which have been taken seem to have been effective only in limited fields including curtailment of government expenditures in the transport sector. Market competition has not fulfilled its original goal of improving the efficiency and quality of services as yet. This is likely due to the sharply declining transport demand and lack of fair competitive environment including a limited number of suppliers in rail, water and air transport as well as independent small scale truckers who lack experience in a competitive market.

Major points which should be incorporated into the transport sector policy would be:

- (1) to delineate possible contracting schemes for transport infrastructure and facility maintenance and operation. Special attention should be given to railways in particular to curtail unproductive outlays.
- (2) to introduce modern technologies to comply with diversifying and increasing demand for quality services particularly in terms of international transport services.
- (3) to take necessary steps to encourage competition between transport modes as well as within a mode to improve both efficiency and quality of service.
- (4) to encourage coordination between public agencies and private enterprises to establish a suitable pattern for competition in the market economy.
- (5) to clarify the scope of government involvement in the transport market during the transformation to a market economy.

The MTME drafted a policy paper for transport in the short, medium, and long term perspectives (1991-2000 and beyond 2000). The paper enumerates a variety of investment plans with a focus on complying with newly emerging transport demand. The main points proposed by the policy paper are:

- (1) Railway
 - a) Modernization of internationally important lines
 - b) Electrification of railway lines
 - c) Modernization of marshalling yards
 - d) Computerization of PKP management

- (2) Road Transport
 - a) Modernization of trucks and loading equipment
 - b) Development of service and repair system
 - c) Construction of PKS terminals

- (3) Public Road Transport
 - a) Construction of motorway, route A2 and A4/A12
 - b) Construction of north-south link on Route A1
 - c) Construction of Route A3 connecting Swinoujscie with Lubawka.

- (4) Sea Transport
 - a) Fleet modernization
 - b) Construction of a ferry terminal at Swinoujscie
 - c) Development of container terminals at Gdansk, Gdynia, and Szczecin
 - d) Increase of the fuel transshipment capacity of northern ports
 - e) Additional pipeline for transporting fuels.

- (5) Combined Transport
 - a) Development of four to six container terminals

- (6) Air Transport
 - a) Modernization of the air traffic control system
 - b) Construction of passenger terminals at Warsaw (completed), Gdansk, Krakow and other cities
 - c) Modernization of the aircraft fleet

- (7) Inland Waterway Transport
 - a) Maintenance works on the rivers of Odra, Wiswa and Warta

As stipulated in the policy paper, Polish transport infrastructure needs to be upgraded to satisfy the quality requirements to comply with the anticipated international integration. However, due attention should be paid to the shortage of financial resources which severely restricts the possible extent of project implementation. Priority projects need to be identified in a time sequential way in accordance with the availability of funds.

3.4.2 Legal Institutions

Poland's restructuring of its economic system to that of the market economy and the associate membership to the European Community have posed a necessity of complete reorganization of the transport system in the legal, organizational, technical and financial spheres. This process of restructuring will have a significant impact on the present and future functioning of the Polish transport system. The immediate prime concern for the Polish transport administration would be: (1) legal compliances with the EC regulations and practices in the transport sector; and (2) legal arrangements in compliance with the demonopolization and privatization in the economy and the transport sector.

Evident features of international trade in the last two years were the considerable change of the direction of the main trade flow from the former Soviet Union and CMEA countries to the EC countries. The development of the EC and Poland's associate membership as well as the economic difficulties in the CISs and CMEA countries have accelerated this trend. This arose the need for mutually compatible transport regulations since transport is the basic service sector for international exchange of passengers and cargoes.

Facing this situation and taking into account the consequences of EC integration in 1993 on the functioning of transport in Europe and the possible operation of Polish carriers within EC countries, the MTME has worked out a paper titled "The Adjustment Program of Polish Transport to Foreign Requests, taking into consideration EEC". This paper presents the basic differences of the Polish transport system with that of EC in the technical and regulational fields.

The following issues are identified by the paper as critical factors that determine the pace of creating a competitive transport market:

- (1) demonopolization and privatization of the state owned transport enterprises, including changes of their functioning rules;
- (2) establishment of competitive conditions in the transport market, including deregulation of entry into the railway transport business;
- (3) introduction of the EC rules for market regulation, including access to jobs and markets as well as market protection mechanisms; and
- (4) harmonization of the transport system in technical, fiscal and social terms.

The government has studied the above issues to some extent, but there still remains much to be done including environmental aspects. A comprehensive adjustment program needs to be developed for the integration of the Polish transport system into the EC system by taking account of:

- (1) exchange of traffic and legal information with EC countries;
- (2) analysis on the costs for implementing the adjustment program and its possible impacts on the Polish public finance; and
- (3) prioritization and scheduling of the legal adjustment program.

In order to efficiently implement the above legal adjustment procedure, it would be desirable to establish a joint study group comprising experts of Poland and the EC countries covering legal, technical, economic and financial fields.

The government has prepared the following acts and amendments in order to rearrange legal compliance with demonopolization and privatization of state owned enterprises in the whole economy as well as in the transport sector:

- Nov. 1989: Act of Creation of the Office of the Minister of Transport and Maritime Economy (Enactment)
- Dec. 1989: Act of the Financial Management of State Enterprises (Amendment)
Act of Economic Activities with Foreign Subject Participation (Enactment)
- Mar. 1990: Act of State Enterprises (Amendment)
- July 1990: Act of Privatization of State Enterprises (Amendment)
- Nov. 1990: Act of Privatization of State Enterprises (Amendment)
Act of Socio-Economic Planning (Cancellation)
- Dec. 1990: Act of State Enterprises (Amendment)
Act of Taxation on Wage Increases (Enactment)
- Jan. 1991: Act of Maritime Code (Amendment)
Budgetary Law (Amendment)
- Mar. 1991: Act of the Maritime Areas of the Polish Commonwealth and the Maritime Administration (Enactment)
Act of the Work on Commercial Sea Vessels (Enactment)
Act of the State Maritime Hydrographic and Navigation Marking Service (Enactment)
Budgetary Law (Amendment)
- May 1991: Act of the Conditions of Engaging in International Road Transport (Enactment)
- June 1991: Act on the Road Code (Amendment)
Act of the Privatization of PPL "LOT" (Enactment)
- July 1991: Act of the State enterprises (Amendment)
Act of the Financial Management of State Enterprises (Amendment)
Act of the State Environment Protection Inspection (Enactment)
- Sep. 1991: Act of Road Charges in International Road Transport (Enactment)
- Oct. 1991: The PKP Law (Amendment)
- Nov. 1991: Act of the Tax Exemption in Cargo Turnover between Duty Free Zones and the Rest of the Territory (Amendment)
- Dec. 1991: Act of the Technical Conditions and Vehicle Testing (Amendment)
Act of Fees for Transport Licenses and Road Charges in International Road Transport (Enactment)

Jan. 1992: Act of Subject Related Subsidies for Passenger Transport by PKS and PKP (Amendment)

According to the act of the Office of the Minister of Transport and Maritime Economy, the Minister is responsible for:

- (1) Preparing conditions for construction, improvement, and exploitation of the railways, public roads, airports and sea ports;
- (2) Matters dealing with road and air traffic as well as sea and inland waterway shipping;
- (3) Matters dealing with carrying passengers and freight by railway, road, sea, air, and inland waterway; and
- (4) Matters dealing with sea fishing.

For improving management and operation of the PKP, the following principles were accepted by the Economic Committee of the Council of Ministers:

- (1) A part of railway infrastructure is to be financed with the state budget through the agreement between the ministers of MOF/MTME and the director general of PKP.
- (2) An administrative Council whose members are appointed by the minister of MTME is to be established in the PKP.
- (3) The organization and administration of the PKP are to be changed to meet the needs of a market economy.
- (4) Companies of construction, production and maintenance subordinate to the PKP are to be separated from the PKP.

A new act is going to be proposed for raising funds for development of the highway network, including:

- (1) The Minister of Transport and Maritime Economy will be empowered to grant concessions for construction and exploitation of motorways, introduction of toll motorways and participation of foreign capital in their construction.
- (2) A special financial source for development and maintenance of public roads will be created and funded by road user fees and taxes.

The road traffic act has been under review with a focus on:

- (1) Technical requirements for vehicles will be revised to comply with those in force in the EC countries.
- (2) Principles of road user fees will be established which are compatible with those in force in the EC countries.
- (3) Customs policies will be established for the import of vehicles and spares.

The traffic law act which regulates passenger and freight transport is also under review to adjust it to the principles of a market economy and including:

- (1) Provisions that rigidly regulated agreements between carriers and their clients which are unsuitable for a market economy will be canceled.
- (2) that intervention by the state in agreements between carriers and clients will be limited.
- (3) that controls of the MTME on tariff setting will be transferred to carriers.

Creation of the legal basis for organization and development of combined transport services is also discussed to give special support in the initial stage. Particular attention is given to:

- (1) A suitable customs policy for importing rolling stock and equipment to be used for combined transport;
- (2) Tax concessions;
- (3) Support by the state of technical and economic analysis dealing with combined transport through state funds and foreign technical assistance; and
- (4) Government loan guarantees to obtain foreign credit

As outlined above, the legal institutions established during the period of the centrally controlled economy have been under review to make them suitable for a market economy. A large part of the government control on passenger and freight transport services is going to be entrusted to the market forces.

The above institutional legal reforms are in the right direction toward a market economy because pervasive as well as rigid regulations of the former regime choked initiatives for improvement which otherwise could raise efficiency. Competition is a driving force in a market economy leading to innovation and higher efficiency. It is unlikely, however, for the time being that private initiative will immediately be encouraged by these legal reforms because market demand has been shrinking and transport companies are in a frail financial standing as well as unfamiliar with the new economic system.

Under these conditions, the role of the MTME is crucial in developing the institutional framework to guide and foster the transport market, particularly in the transition period toward a market economy. The goal of the government involvement in this period is to develop a healthy business environment to ensure fair competition for the benefit of consumers. The framework needs to include reshuffling of transport administration, qualification of transport companies, establishment of new pricing policies, revision of taxational as well as financial schemes, retraining of human resources adaptable to a market economy and so on. Better coordination is required among central government offices, between central and local governments, and between the public and private sectors.

3.5 Budget and Finance

3.5.1 Budget and Budgeting Procedures

1) MTME Budget

The MTME budget is not a consolidated transport budget as it covers only the cost of state services and subsidies to the SOEs. The amount of revenue is nominal, only 67.8 billion zloty in 1991 (US\$ 5.0 million) or 0.63% of the total expenditure (Tables 3.5.1 and 3.5.2). The revenue mostly comes from the brokerage of ships in the maritime sector and the privatization of the state enterprises. The total annual transport expenditure in the 1991 Budget Act was 14,738 billion zloty (US\$ 1.1 billion) or 5% of the total national budget. In 1991, 12,509 billion zloty (US\$ 1.14 billion) was budgeted for operations and maintenance (this represents 85% of the total budget); the remainder, 2,229 billion zloty (US\$ 0.20 billion) or 15% of the total was budgeted for capital investment.

However, the year end results of actually disbursed budget in 1991 took totally different shape from those in the Budget Act. Total expenditure was curtailed to 10,759 billion zloty or 73% of the original figure in the Budget Act. The situation was caused by the deepening economic recession in 1991, which had resulted almost in a breakdown in the state finance system. The huge reduction of revenue was caused by falling output in state owned enterprises including the transport sector SOEs. This situation compelled the Ministry of Finance to make substantial reduction in expenditure.

While the recurrent expenditure was curtailed by 26%, the investment expenditure was cut by 32% to 14% of the total expenditure. This low rate of capital investment is an exception in recent years. Investment for improvements accounted for 32% of the total expenditure in 1990, and for 27% in 1988. Another exception was the year 1989 when the rate of inflation was exceptionally high and all efforts were directed to balance the whole budget. In that year, only 19% was spent for capital investments, which was still higher than in 1991.

Table 3.5.1 1991 Budget in the Ministry of Transport and Maritime Economy

Contents	Budget Act for 1991				Budget after Changes (End of 1st Half)				Amended Budget (Aug. 1991)				Final Results (End of 1991)			
	Total		Investment		Total		Investment		Total		Investment		Total		Investment	
	Recurrent	Investment	Recurrent	Investment	Recurrent	Investment	Recurrent	Investment	Recurrent	Investment	Recurrent	Investment	Recurrent	Investment	Recurrent	Investment
Budget Revenue	24.7	-	24.9	-	24.9	-	24.9	-	34.4	-	34.4	-	67.8	-	67.8	-
Budget Expenditure	14,737.9	12,508.9	14,310.6	12,278.2	14,310.6	12,278.2	2,032.4	2,032.4	10,696.8	9,174.7	1,522.1	1,522.1	10,759.4	9,241.5	1,517.8	1,517.8
1. Industry	93.8	-	93.8	-	93.8	-	93.8	-	87.9	-	87.9	-	87.9	-	87.9	-
2. Transport	6,411.9	4,485.0	6,384.3	4,506.5	6,384.3	4,506.5	1,877.8	1,877.8	4,700.7	3,306.2	1,394.5	1,394.5	4,637.1	3,246.9	1,390.2	1,390.2
(Dom. Pub. Road Unit)	(4,389.2)	(4,015.0)	(4,400.5)	(4,026.4)	(4,400.5)	(4,026.4)	(374.2)	(374.2)	(3,326.8)	(2,987.2)	(339.6)	(339.6)	(3,242.1)	(2,909.4)	(332.6)	(332.6)
3. Communal	422.0	260.0	14.5	-	14.5	-	14.5	-	-	-	-	-	873.0	-	-	-
4. Ed. & Upbringing	213.4	210.2	213.4	210.2	213.4	210.2	3.3	3.3	215.3	213.3	2.0	2.0	202.8	200.8	2.0	2.0
5. Higher Education	86.2	80.0	91.7	91.7	91.7	91.7	6.2	6.2	77.0	77.2	2.8	2.8	77.0	74.2	2.8	2.8
6. Culture & Art	2.5	1.8	2.7	2.7	2.7	2.7	0.7	0.7	2.3	1.9	0.4	0.4	2.3	1.9	0.4	0.4
7. Health Protection	875.3	840.7	875.3	875.3	875.3	875.3	34.6	34.6	935.8	901.8	34.0	34.0	1,066.4	1,032.5	34.0	34.0
8. Various Actv's	22.9	22.9	23.0	23.0	23.0	23.0	-	-	13.3	13.3	-	-	13.2	13.2	-	-
9. State Adm.	37.9	36.2	33.9	38.3	33.9	38.3	1.7	1.7	32.8	32.3	0.5	0.5	30.8	30.3	0.5	0.5
10. Social Security	172.0	172.0	172.0	172.0	172.0	172.0	-	-	169.8	169.8	-	-	179.7	179.7	-	-
11. Subsidies	6,400.0	6,400.0	6,400.0	6,400.0	6,400.0	6,400.0	-	-	4,462.0	4,462.0	-	-	4,462.0	4,462.0	-	-
(Activity-related)	(3,600.0)	(3,600.0)	(3,600.0)	(3,600.0)	(3,600.0)	(3,600.0)	-	-	(2,900.0)	(2,900.0)	-	-	(2,900.0)	(2,900.0)	-	-
(Subject-related)	(2,800.0)	(2,800.0)	(2,800.0)	(2,800.0)	(2,800.0)	(2,800.0)	-	-	(1,568.0)	(1,568.0)	-	-	(1,562.0)	(1,568.0)	-	-

Source: Dept. of Economy and Finance, MTME.

Table 3.5.2 Results of MTME Budget Expenditure

	(unit: ZI Billion)			
	1989 (Results)	1990 (Results)	1991 (Results)	1992 (Results)
(1) Total MTME Budget Expenditure	1,347.3 (100.0)	10,843.0 (100.0)	10,759.4 (100.0)	14,174.2 (100.0)
(2) Recurrent Expenditure	1095.2 (81.3)	7,401.4 (68.3)	9,241.5 (85.9)	12,195.1 (86.0)
- Subsidies to SOEs	666.2	4,494.7	4,462.0	6,400.0
- Expenditure for Budget Units (Transp)	273.7	1,755.9	3,246.9	3,172.0
- Expenditure for State Adm.	4.7	32.1	30.3	39.1
(3) Investment Expenditure	252.1 (18.7)	3,441.6 (31.7)	1,517.9 (14.1)	1,979.1 (14.0)
- Investment for SOEs	83.8	1,176.5	1,390.2	1,555.2
- Investment for Budget Units	168.4	2,265.1		

	(unit: US\$ Million)			
	1989	1990	1991	1992
(1) Total MTME Budget Expenditure	931.5	1,141.4	969.3	1,049.9
(2) Recurrent Expenditure	757.2	779.1	832.6	903.3
- Subsidies to SOEs	460.7	473.1	402.0	474.1
- Expenditure for Budget Units (Transp)	189.2	184.8	292.5	235.0
- Expenditure for State Adm.	3.2	3.4	2.7	2.9
(3) Investment Expenditure	174.3	362.3	136.7	146.6
- Investment for SOEs				
- Investment for Budget Units	57.9 116.4	123.8 238.4	125.2	115.2

Note: 1) ZI figures are converted into US\$ by applying the following rate.
1989 US\$1.00 = 1,446.31
1990 = 9,500.00 IMF data
1991 = 11,100.00
1992 = 13,500.00

2) Figures in parenthesis are in per centages.

Source: Calculated by the JICA Team based on MTME data.

2) Budgeting Procedure

The current budgetary process practised at the MTME and the MOF is summarized as follows:

Step 1: Indication of "Budget Ordinance"

The MOF sends a general statement of regulations, a budgeting schedule, a list of prices, and data to be used for preparing the budget to sector ministries, including the MTME.

Step 2: Preparation of "Framework of Budget Proposal"

- (a) Each transport agency prepares its own budget proposal and submits it to the MTME.
- (b) The MTME prepares the "Framework of Budget Proposal". This is the ministry's draft budget document, based on the budget proposals prepared by transport agencies. The MTME then sends it to the MOF.

Step 3: Negotiations between MTME and MOF

- (a) The MOF receives budget proposals from the various ministries and comments on them. It then distributes new information and requirements for preparation of revised budgets.
- (b) Budget negotiations between the MTME and the MOF then take place. They are based mainly on the total scale of expenditures and the amount of subsidy. Draft budget documents are then adjusted and modified.

Step 4: Preparation of draft budget

The MOF prepares a draft budget document and presents it to the Economic Committee of the Council of Ministers (KERM). A draft budget may sometimes be sent back to the MTME for further revision and modification even at this stage.

Step 5: Approval of draft budget and preparation for legislation

- (a) A draft budget is finally approved and sent to the parliament for legislation.
- (b) The final budget is examined by the Special Committee on Budget and Finance and then presented to a plenary session of Parliament to pass the budget into law.

Step 6: Release of funds of Budget

- (a) The MTME is responsible for preparation of detailed monthly disbursement schedules. It then passes these on to the various transport agencies.
- (b) Usually, the monthly allocated budget is disbursed from the bank to the agencies in accordance with the above schedule. However, in

1991, the monthly expendable disbursement to the agencies was somewhat less than the budgeted amount.

Step 7: Monitoring of budget implementation

- (a) Monthly financial reports are consolidated by the Bank and sent to the MTME and the MOF.
- (b) Physical progress of investments is monitored by the Department of Technology in the MTME.

The current budgetary process should be made more effective and the management of public expenditures more efficient. The following are possible measures for improvement of the budgetary process.

- (1) Before the preparation of the "Framework of Budget Proposal", the MTME should hold detailed internal discussions with all transport agencies under its jurisdiction. Discussions should cover the MOF's policies and development strategy, how to implement the policies, and the MTME's development program.

It is particularly difficult during the current social and economic transition to predict budgetary constraints; thus it is crucial that the transport budget reflects goals for the future. The medium-term development strategy must be linked to the annual budget for consistent decision-making.

At issue is the need to transform the MTME into a policy-oriented and strategy-based ministry. To this end, the formulation of a medium-term strategy is urgently needed. The policy discussions among the departments of the MTME in the course of the annual budget preparation are the best chance to coordinate policies within the ministry. The dialogue with the transport agencies is also the most effective means of diffusing the MTME's transport policies.

- (2) It is informed that data on traffic and the financial performance of each of the transport companies are unavailable, out of date, or unreliable. Presently, traffic data are reported from the various transport agencies to the GUS (Central Statistics Office) but not to the MTME. The timely supply of accurate data is indispensable for administration purposes as well as for preparation of the annual budget.

Poor information exchange also hampers the monitoring of budget implementation. Every department of the MTME should be organized to increase the effectiveness of budgetary and administrative monitoring.

3.5.2 Subsidies and Taxation

1) Subsidies

In the 1991 budget, about a half of the total expenditure was spent for subsidies to SOEs, which are grouped into the following three categories:

- (1) Activity-related subsidies: Subsidies for state-owned transport operators engaged in free or reduced-fare passenger service. These subsidies are needed to cover the cost of meeting government-mandated welfare objectives.
- (2) Subject-related subsidies: Subsidies for repair and maintenance of the PKP infrastructure.
- (3) Investment subsidies: Subsidies for modernization and new investments (capital improvement).

Recipient of the activity-related subsidies are PKP (2,700 million zloty) and PKS (900 million zloty). The fares of passenger service on these SOEs are under the control of the MTME and set well below operating costs. The revenue from PKP passenger services has always been below cost from 1987 to 1991 and the deficit has been increasing. In 1987, the revenue from passenger services of 59 billion zloty covered 30% of costs. In 1990 the operating ratio (Expense / Revenue) was only 23%; in 1991 the ratio had further lowered to 22%. The deficit of passenger service has been partly met by the net surplus from freight services and partly by the activity-related subsidies.

It is essential that passenger tariffs be adjusted to ensure the financial viability of PKP. In fiscal 1991 four tariff increases were planned: a 40% increase on January 1, 40% on April 1, 40% on September 1, and finally a 30% increase on November 1. The first tariff adjustment on January 1 was implemented as scheduled, but the second adjustment on April 1 was not implemented. It is, therefore, necessary to raise the fares by 200% on September 1 in order to cover the losses from the unrealized increase scheduled on April 1. However, the actual adjustment on September 15 was 50%, and a final 30% increase scheduled on November 1 was postponed to March 1, 1992.

PKP is the sole recipient of the subject-related subsidies which were created in 1990 to fund infrastructure repair and maintenance. Investment subsidies provided funds for numerous activities in the 1991 budget. The subsidies included 642 billion zloty for airport construction, 597 billion zloty for PKP infrastructure development, 130 billion zloty for new buses for PKS companies, and 272 billion zloty for port improvements.

All in all, 75% of all three categories of subsidies in the 1991 budget was directed to PKP. Therefore, efficient and effective budgetary management at PKP is vital to the entire transport sector. The fact that the transport sector receives subsidies is not bad in itself, as transport companies, particularly railways, are subsidized in one way or another. Subsidies to SOEs are justified when the net benefit/cost ratio of providing subsidies to the SOEs is positive and when the subsidy serves overall development objectives. The key issue is that subsidies to the MTME would be justifiable only if the subsidy objectives were explicit and their costs and benefits transparent. Accountability can be assured only when a good flow of information between the MTME and the SOEs is secured.

2) Taxation

Transport enterprises are liable to pay the following taxes and dividends:

- (1) **Income Tax:** All entities (SOE and private) are liable to pay if the gross profit of the entity during an accounting period is positive. The formula for the amount of income tax payable is as follows:

$$\text{Income Tax} = (\text{Sales Revenue} + \text{Subsidy} - \text{Cost}) * 40\%$$

- (2) **Dividends:** All entities that use the assets owned by the state are liable to pay. Therefore, this is applicable to the state enterprises only. The formula for the dividend calculation is as follows:

$$\text{Dividend} = (\text{Value of State Assets including the Entity's Establishment Fund}) * 10\%$$

Note 1: Until the end of 1991, the rate was 30%, which was decreased to 22% in January 1992, and further lowered to the present rate of 10% on July 1, 1992.

Note 2: Some state enterprises, e.g. PKP and PPL, are exempted from the liability of dividend and for PKSs a reduced rate of 25% is applied, while LOT, port companies and shipping companies are all liable to pay the full rate.

- (3) **Wage Increase Tax:** This is applicable only to the state enterprises. The purpose of the imposition of this tax is to suppress the inflation caused by wage increase and to encourage privatization since private enterprises are not liable to this tax. Joint stock companies, in which the state is a major stock holder, are liable to pay this tax at reduced rate, while in the case of companies of private majority this tax is not payable.

At present, the state owned enterprises are not liable to turnover taxes except indirect payment through purchase of materials and services such as fuels, vehicles, etc. However, there is a possibility of introducing a value added tax (VAT) from January 1993. If it is introduced, services of LOT and PKS are liable to the full VAT rate (22%), while a reduced rate of 7% will be applicable to PKP services.

3.5.3. Financial Situation of Transport Enterprises

Financial performance of the major state owned transport enterprises for the last three years is shown in Table 3.5.3. Since the Polish economy has experienced considerable rates of inflation for the last three years, particularly in 1989, figures of the total financial performance are converted into current US dollars. The table indicates that:

- (1) Total net profits of the SOEs were positive in 1989, but aggravated to deficit in the following years;
- (2) Among the four major SOEs, impacts of financial performance by PKP are decisive; 75% of the total expenditure of the SOEs in 1991 were spent by PKP and 95% of the net deficit of the SOEs in the same fiscal year were caused by PKP;
- (3) The net fiscal contribution (tax/dividend paid to the state - subsidies supplied) was "seemingly" improving year after year for the last three years.

Table 3.5.3 Financial Results of Major State-Owned Enterprises 1989-91

		(unit: ZL Billion)			
SOE	Items	1989	1990	1991	Remarks
PKP	(1) Total Sales Revenue	2,367.5	16,905.8	24,416.5	
	(2) Subsidies	649.7	3,535.3	3,562.0	
	(3) Total Expenditure	2,683.9	18,934.0	31,085.2	
	(4) Gross Profit	428.5	Δ115.3	Δ3,504.1	= (1)+(2)-(3)Δ Others
	(5) Tax/Dividends	222.1	2,254.2	5,858.7	
	(6) Net Profit	206.4	Δ2,369.5	Δ9,362.8	= (4)-(5)
PKS	(1) Total Sales Revenue	768.5	3,446.1	4,951.4	
	(2) Subsidies	214.9	698.6	900.0	
	(3) Total Expenditure	861.7	3,984.7	5,786.7	
	(4) Gross Profit	159.3	300.1	63.4	= (1)+(2)-(3)Δ Others
	(5) Tax/Dividends	99.9	328.2	179.7	
	(6) Net Profit	59.5	Δ28.1	Δ128.6	= (4)-(5)
LOT	(1) Total Sales Revenue	542.5	2,669.5	3,704.2	
	(2) Subsidies	-	-	-	
	(3) Total Expenditure	371.0	2,729.2	3,747.1	
	(4) Gross Profit	175.5	178.2	Δ112.5	= (1)+(2)-(3)Δ Others
	(5) Tax/Dividends	49.0	172.4	435.5	
	(6) Net Profit	126.5	5.8	Δ548.0	= (4)-(5)
PPL	(1) Total Sales Revenue	48.2	471.7	770.6	
	(2) Subsidies	-	-	-	
	(3) Total Expenditure	21.0	141.0	261.1	
	(4) Gross Profit	56.9	352.1	464.0	= (1)+(2)-(3)Δ Others
	(5) Tax/Dividends	10.5	151.8	250.1	
	(6) Net Profit	46.4	200.3	213.9	= (4)-(5)
Total (I)	(1) Total Sales Revenue	3,726.7	23,493.1	33,842.7	
	(2) Subsidies	864.6	4,233.9	4,462.0	
	(3) Total Expenditure	3,937.6	25,788.9	40,880.1	
	(4) Gross Profit	820.2	715.1	Δ3,089.2	= (1)+(2)-(3)Δ Others
	(5) Tax/Dividends	381.5	2,906.6	6,724.0	
	(6) Net Profit	438.8	Δ2,191.5	Δ9,825.5	= (4)-(5)
Total (II)	(unit: US\$ Million)				
	(1) Total Sales Revenue	2,576.7	2,473.0	3,048.9	
	(2) Subsidies	597.8	445.7	402.0	
	(3) Total Expenditure	2,722.5	2,714.6	3,682.9	
	(4) Gross Profit	567.1	75.3	Δ278.3	= (1)+(2)-(3)Δ Others
	(5) Tax/Dividends	263.8	706.0	605.8	
	(6) Net Profit (with Subsidies)	303.4	Δ230.7	Δ885.2	= (4)-(5)
	(7) Net Profit (without Subsidies)	Δ294.4	Δ676.4	Δ1,287.2	= (6)-(2)
(8) Net Fiscal Contribution	Δ334.0	Δ260.3	203.8	= (5)-(2)	

Note: Figures in Total II are converted those in Total I into current US dollars.

Source: Calculated from data provided by the MTME.

Table 3.5.4 Financial Results of Budget Units in the Transport Sector

		(unit: ZL Billion)			
		1989	1990	1991	Remarks
GDDP	(1) Income	0.0	0.1	26.2	
	(2) Current Expenditure	251.9	1,520.0	2,909.4	
	(3) Investment Expenditure	20.0	232.4	332.6	
	(4) Net Fiscal Contribution	Δ271.9	Δ1,752.3	Δ3,215.8	= (1)-(2)-(3)
GILC	(1) Income	0.0	0.0	0.1	
	(2) Current Expenditure	1.9	15.7	23.2	
	(3) Investment Expenditure	-	-	0.1	
	(4) Net Capital Contribution	Δ1.8	Δ15.7	Δ23.2	= (1)-(2)-(3)
Inland-Waterway Shipping	(1) Income	0.0	0.0	0.1	
	(2) Current Expenditure	0.3	1.7	2.8	
	(3) Investment Expenditure	-	-	-	
	(4) Net Capital Contribution	Δ0.3	Δ1.7	Δ2.7	= (1)-(2)-(3)
Maritime Offices	(1) Income	0.5	5.4	9.9	
	(2) Current Expenditure	16.7	193.6	260.6	
	(3) Investment Expenditure	2.4	43.3	48.0	
	(4) Net Capital Contribution	Δ18.6	Δ231.5	Δ298.7	= (1)-(2)-(3)
Total (I)	(1) Income	0.5	5.5	36.2	
	(2) Current Expenditure	270.8	1,731.0	3,196.0	
	(3) Investment Expenditure	22.4	275.7	380.7	
	(4) Net Capital Contribution	Δ292.6	Δ2,001.2	Δ3,540.4	= (1)-(2)-(3)
Total (II)	(unit: US\$ Million)				
	(1) Income	0.3	0.6	3.3	
	(2) Current Expenditure	187.2	182.2	287.9	
	(3) Investment Expenditure	15.5	29.0	34.3	
(4) Net Fiscal Contribution	Δ202.3	Δ210.7	Δ319.0	= (1)-(2)-(3)	

Note: Figures in Total II are converted into current US dollars.

Source: Calculated from data provided by the MTME.

The quotation, "seemingly", in the above (3) is meaningful. If taxes and dividends imposed on SOEs were paid to the government, it could be said that fiscal contributions by the SOEs were positive. However, the imposed tax/dividends which mainly consisted of wage increase tax were not actually paid. Even payments of bills for purchasing materials were reportedly postponed or only partially paid. These practices tend to embellish the actual performance.

The financial performance of the budget units in the transport sector is shown in Table 3.5.4. The income of these budget units is nominal and comparison of financial performance is meaningful only for the expenditure of each unit. The table indicates that:

- (1) Recurrent expenditure was the major component of expenditure, and that investment shared as low as 10.6% in 1991, 13.7% in 1990 and 7.6% in 1989;
- (2) Of the total expenditure in 1991, GDDP had the highest share of 90.6%, the remaining share less than 10% having been spent by the other budget units. However, expenditure by GDDP was about 10% of expenditure by PKP.

3.6 Organization and Management

3.6.1 Ministry of Transport and Maritime Economy (MTME)

The MTME has been reorganized several times. In October 1987, the Ministry of Transport, the Ministry of Telecommunications and the Office of Maritime Economies were combined into one unit named the Ministry of Transport, Shipping, and Telecommunication. The aim was to consolidate the responsibility for all modes of transport under one ministry, although it included telecommunication as well.

In December 1989, another reorganization took place in the Ministry. This was to establish the Department of Telecommunication as an independent ministry, and the present MTME was constituted. The MTME is in charge of railways, public roads (outside cities and towns), public transport, sea ports, inland waterways and air transport (Fig. 3.6.1).

The Ministry's responsibility is limited to major policy issues, monitoring transport demand and monitoring the financial performance of various state owned transport enterprises and budget units. Reporting on performance from the transport enterprises to the MTME is neither sufficient nor standardized, hence, their information is not fully used for administrative decision making.

As of July 1991, the MTME was composed of one Minister, one Secretary of State (First Deputy Minister), three under-secretaries, twelve departments and two offices which are headed by directors. In July 1992, a year later, the MTME has no Secretary of State, four under-secretaries (one vacant), eleven departments and two offices which are headed by directors (two posts vacant) (Fig. 3.6.2). In this organizational structure, the Minister directly coordinates decisions made by under-secretaries. It can be argued that the Secretary of State should be reinstated and should: (1) coordinate decisions made by under-secretaries, each of whom supervises several departments and offices, and (2) offer policy-related advice to the Minister.

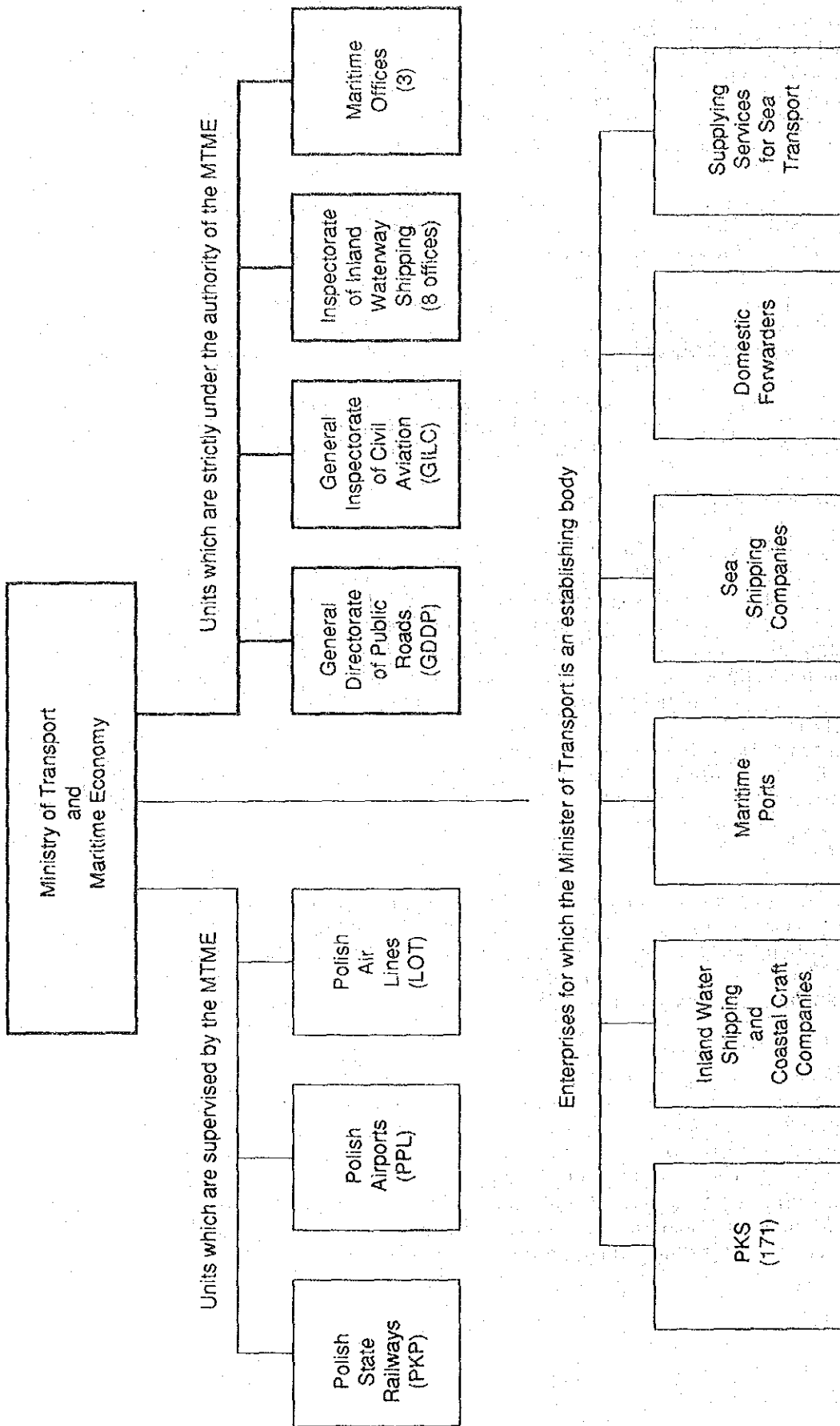
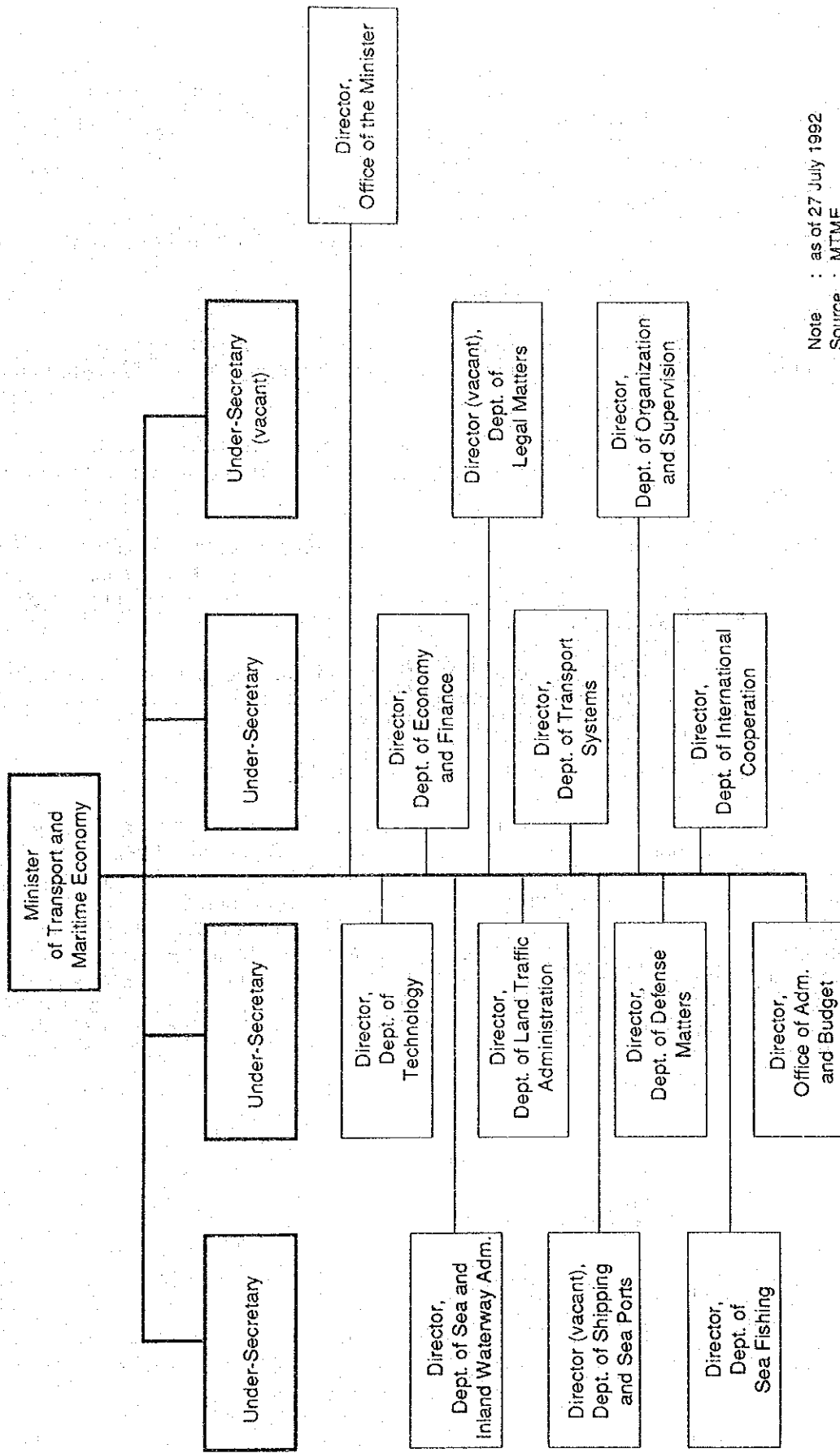


Fig. 3.6.1 Administration of Polish Transport Sector



Note : as of 27 July 1992
 Source : MTME

Fig. 3.6.2 Organization of the Ministry of Transport and Maritime Economy

The current functions of the MTME are:

- (1) Formulation of short, medium, and long-term transport policies;
- (2) Formulation of the transport budget proposal;
- (3) Allocation of transport investment funds;
- (4) Allocation of subsidies to transport enterprises;
- (5) Supervision of activities and performance of public transport enterprises;
- (6) Approval of tariff ceilings for private transport enterprises and tariff setting for state-owned transport enterprises; and
- (7) Establishment of safety regulations.

In order to implement the above functions effectively, the present division of work among departments seems to be redundant and lacks coordination. The following points are salient:

- (1) A sectorial division is applied for the maritime economy, while the other sectors are functionally divided, which are the remnants of the former division of ministries.
- (2) The organization of the MTME should be restructured in order to establish a better coordination between departments, particularly between the departments of Economics and Finance, Organization and Supervision, Legal, Transport Systems, and Shipping and Sea Ports.
- (3) In order to guide the transformation of the transport sector from the centrally planned to a market-based system, transport policy formulation and implementation should be substantially improved.

3.6.2 Management of State-Owned Enterprises (SOEs) and Their Restructuring

According to the World Bank Report (Barbara Lee and John Nellis, "Enterprise Reform and Privatization in Socialist Economies", World Bank Discussion Papers No. 104, 1990), a SOE is defined as: (a) a government owned productive organization that (b) is expected to earn a significant portion of its revenues from the sale of the goods or services it produces, (c) possesses an accounting system separate from any government agency that controls or supervises it, and (d) is a distinct legal entity. As in other sectors in the Polish economy, most transport services which used to be provided by the SOEs are consistent with the above definition. They also account for a much greater percentage of transport services in Poland than they do in any West European country.

Managerial and organizational issues which confront the current system of SOEs can be enumerated as follows:

Sector	SOE	Present Situation and Issues
Railway	PKP	(1) Now, 72 establishments were separated from the PKP and 77 state enterprises, functioning according to the rules appropriate to the PKP technical back-up establishments, were established on their basis.
		(2) Establishing computer-based management information system with IBRD assistance to determine cost of railway operations. This should strengthen the managerial capabilities.
		(3) Planning dissociation of 5,500 km of non-profitable lines from PKP and reduction of the number of employees from 332,628 (1990) to 290,128.
Road Transport	PKS	Former KPKS (National Road Transport Company), PKS Warszawa, PKS Koszalin and PKS Olsztyn were already separated into 237 SOEs in July 1991, of which:
		(1) 167 enterprises engaged in passenger transport or both passenger and freight transport under the supervision of the MTME.
		(2) 70 enterprises engaged in freight transport under the supervision of voivodship.
Civil Aviation	LOT	(1) Restructuring through reduction of employees in order to reduce financial deficit.
		(2) Separation of ancillary services to eliminate unprofitable activities.
Airports	PPL	(1) Partial privatization of airports excluding Warsaw airport.
		(2) PPL-LOT-American Airlines joint venture for passenger and freight handling was planned but was not formed.
Water Port Transport Authority		(1) Sea ports at Gdansk, Gdynia and Szczecin transformed from SOEs to Joint Stock Companies (JSC); All stock owned by the MOF.

Common issues of ongoing restructuring for all transport SOEs are:

- (1) The financial viability of SOEs and subsidiaries both at present and in future should be examined before restructuring decisions are made. In most cases of the ongoing restructuring, insufficient attention has been paid to the future profitability of the restructured enterprises.
- (2) Evidenced by the restructuring of the former PKS, all restructuring has taken place at once regardless of the administrative capacity of the MTME and the preparedness of PKS. Failure to assess the restructuring environment might cause unfavorable outcomes. Experience of restructuring of transport enterprises in both western industrialized and developing countries shows that a well-prepared and well-organized implementation plan is the key to success.
- (3) There is a shortage of staff in top and middle management who have knowledge and experience of market economy principles, modern accounting and financial systems, and decision making on their own. Although details may vary from one SOE to another, successful reform of an institutional framework usually requires:
 - to set clear objectives for restructuring SOEs that can be translated into quantified and monitorable targets;
 - to provide managers with sufficient autonomy to achieve objectives;
 - to hold managers responsible for the results;
 - to select managers who are competent to operate a commercial venture and pay them adequately; and
 - to hold managers accountable for the results including incentives and sanctions.

(Mary Ghirley, "The Reform of SOEs: Lessons from World Bank Lending, Policy and Research Series No. 4", 1989)

Comparing the present situation of restructuring of SOEs in the Polish transport sector with this checklist, it is evident that the SOEs in the transport sector are short of competent managers. They are mostly unaware of changing requirements for management of enterprises in the market economy. In this regard, management training is urgent throughout the country not only for the restructuring of transport enterprises but also for the successful transition of the economy as a whole.

3.7 Traffic Safety and Environment

3.7.1 Traffic Safety

1) Traffic Accidents

Between 1988 and 1989 there was a 23.4% increase in accidents, a 38.6% rise in fatalities and a 23.0% increase in injuries. Between 1989 and 1990, this trend has continued although the rate of increase has been slightly less severe; accidents increasing by 9.0%, fatalities by 9.0% and injuries by 11.1%. Another factor worth noting is the ratio of the number of deaths to number of accidents. This is currently running at 14.5%. However, according to the recent data, the increasing trend was changed to decreasing or leveling trend. Comparing the 4th quarter of 1990 and 1991,

the data show minus 8% in the number of accidents, 9% in fatal casualties and 7% in other injuries. For the first quarter of 1991 and 1992 these figures are plus 1%, minus 10% and plus 2.6%, respectively. This might be attributable to the safety belt wearing, lighting and enforcement of maximum speed limit which were introduced recently.

The accident rate increases as one goes from international to inter-regional to regional roads, which corresponds to lower road standards. The relative rates for the three road types have remained consistent for the period 1988-90, but their absolute values have increased in 1990 in line with the increase in the number of accidents. The proportion of fatal accidents to the total accidents is greatest on international roads, suggesting a probable link to vehicle speeds.

Pedestrian accidents account for almost 31% of all accidents on national roads. The proportion of pedestrian fatal casualties to the total fatal casualties increased to almost 37%. It is also significant that over 50% of all pedestrian fatalities on national roads occur during hours of darkness.

The proportion of accidents under the influence of alcohol or drugs has remained fairly constant since 1988 contributing to about 20% of all accidents and 26% of fatal accidents. This suggests that the accidents by road users under the influence of alcohol or drugs has shown the same dramatic increase as the increase in total accidents since 1988.

The manner in which accident details are recorded falls short of the system employed in most Western European countries, and problems have been encountered, particularly in the reliable identification of accident locations. It appears that locations are represented by some form of grid referencing, but often this is done on a plan of a too small scale to allow accurate referencing. It is hoped that this will be improved and that accidents will be included within a road network database, which is to be developed in conjunction with the new "Pavement Management System of Highway Maintenance" including other road planning data.

2) Traffic Safety Measures

Polish design standards for new roads are as high as standards adopted in Western European countries. However, there is only a very low proportion of the national road network made up of motorways and express roads (< 1.5%). The great majority of the network is made up of single carriageway roads with the following consequences for road safety:

- (1) Overtaking takes place without the benefit of a central median to segregate opposing traffic streams;
- (2) There is a dangerous mixture of high speed long distance traffic with slow moving local traffic;
- (3) Many towns and cities are not by-passed, leading to unnecessary traffic conflict in built-up areas; and
- (4) Virtually all junctions on inter-urban sections of the network are at grade and priority controlled. In particular, crossroads are common and, based on Western European experience, this type of junction has a poorer safety record than staggered junctions.

There are also certain safety features common on Western roads which are notably absent on Polish roads. Two examples, both of which relate safety during poor visibility conditions, are reflectorized carriageway markings incorporating ballotini and reflecting road studs.

There is too little segregation, with all road users often sharing the same paved surface. In rural areas, many agricultural vehicles are mixed with high speed transit traffic, and these still include horse drawn vehicles. While the higher standard single carriageway roads often incorporate paved shoulders, it has become customary for slower vehicles to drive along these to permit overtaking. However, these hard shoulders are also used by horse drawn vehicles, cyclists, pedestrians and as bus stops. It is not uncommon for pedestrians and cyclists to be travelling in the opposite direction to the vehicular flow. The increase in higher performance Western vehicles on Polish roads is further increasing the range of speeds encountered within the traffic mix.

The actual speed limits are similar to those in force in Western Europe. However, the observance and enforcement of these limits appears to be very poor. While the police do undertake radar speed checks, the equipment is bulky and easily identified by approaching drivers. The use of more discrete, in-car equipment may improve enforcement and observance. The problems of enforcement were the main reason for rejection of a recent move to reduce urban speed limits from 60 km/hr to 50 km/hr, although the use of 20 km/hr limits in certain residential areas has now been authorized.

The majority of Poland is fairly flat terrain and, with its relatively dense road and rail networks, there is a high frequency of at grade railway crossings. In 1987 there were still over 280 such level crossings on the inter-regional road network, although none of these are on dual carriageway. Despite the large increase in road traffic since 1980, the number of accidents at railway level crossings has remained fairly constant at around 40 per annum. A program to remove the level crossings on inter-regional roads exists but, because the solutions involve fairly expensive structures, it will take many years to implement. At sites where a grade-separated solution may be many years away, enhanced methods of crossing control should be sought.

3) Vehicle/Passenger Safety Measures

General guidance on the behavior of road users is given in the Road Code (Kodeks Drogowy). It contains regulations of maximum speed limits, the use of lights, seat belts, helmets for motorcyclists, driving under the influence of alcohol, types of driving licenses and examinations, as well as requirements on the frequencies for the technical examination of vehicles. Many of these regulations are similar to those in Western Europe, although the following are worthy of mention.

The safety of vehicles is governed by regulations relating to the granting of road worthiness certificates. All new vehicles require such a certificate, thereafter they are examined periodically before the certificate is renewed. In addition, a vehicle can be referred for a technical examination at any time by Road Traffic Control Services. In general terms, this includes Police and Environmental Health inspectors. There are general regulations relating to the construction of vehicles, including requirements that the external surfaces of vehicles do not contain sharp objects and covering the location of fuel tanks and electrical wiring.

4) Enforcement Issues

The enforcement of these measures is largely the responsibility of the police but certain powers lie with the Inspectors of Environmental Protection and Voivodship authorities, particularly in relation to the technical inspection of vehicles. Environmental inspectors are mainly concerned with vehicle noise and exhaust emissions whereas the voivodship authority is responsible for the licensing of testing stations used for vehicle examinations.

Improved enforcement of speed limits and drink/drive laws is required to reduce the contribution of speed and alcohol to the increasing number of injury accidents. It would also appear that vehicles are being granted road worthiness certificates without necessarily satisfying all the requirements. Increased monitoring by the Voivodship authorities will be required to help overcome this. Well concerted efforts of related agencies are indispensable to the reduction of traffic accidents, coupled with wide and repeated campaign of traffic safety.

3.7.2 Environment

1) Energy Consumption in the Transport Sector

Transport accounts for a significant proportion of the national energy consumption in Poland. Statistics for 1988 show the following:

- (1) over 14.8 million tons of oil and oil products were consumed in total;
- (2) the socialized transport sector accounts for around 4% of the national energy consumption, 14% of total petrol consumption, 33% of total diesel oil consumption and almost 22% of the total consumption of heating oils; and
- (3) the total non-socialized sector accounts for a further 50% of petrol consumption.

Looking at each mode of transport individually, consumption of energy by PKP over the period from 1988 to 1990 shows the following trends:

	1988	1989	1990
Electricity (MWH)	5,290,115	5,185,033	4,660,745
Diesel Oil (Tons)	507,343	467,265	382,031

In 1989, road vehicles consumed 3.3 million tons of petrol and 5.1 million tons of diesel oil.

Polish Airlines (LOT) consumed 280,800 tons of aircraft fuel in 1990, compared with 274,900 tons in 1989 and 235,300 tons in 1988.

Available data for inland waterway transport and maritime shipping include all fuel consumed in the operation i.e. energy used in offices etc., as well as the energy actually consumed in transportation. The total fuel consumption in 1990 for these sectors was as follows:

	Maritime Shipping	Inland Waterways
Coal (1,000 tons)	12.0	1.2
Coke (1,000 tons)	6.1	1.1
Diesel Oil (1,000 tons)	210.8	16.6
Petrol (1,000 tons)	0.5	0.1
Electricity (MWH)	84,802.4	8,468.2

In terms of fuel efficiency of vehicles in Poland, there seems to be two major issues. Firstly, Polish vehicles manufacture is based on outdated technology and consequently the fuel efficiency of the engine used lags behind that achieved by vehicles produced in the West. Modern engines would also achieve less toxic exhaust emissions. Secondly, the state controlled transport sector is experiencing reduced demand for its services with a consequent reduction in efficiency. There is a need to reorganize the transport system to provide an efficient service, based on realistic projected levels of demand.

2) Environmental Issues

The major ways in which road vehicles and their use contribute to air pollution are in form of toxic exhaust gases, asbestos dust from clutch and brake pads and noise. However, other forms of pollution arise from the disposal of waste materials such as oil, coolants, electrolytes, tires and scrap metal.

In 1989 the emission of toxic substances from road motor vehicles amounted to the following:

Substance	Total Emission Tons x 1000	Contribution to total National Emission (%)
Carbon Monoxide (CO)	1,300	38
Aromatic Hydrocarbons (H ₂ C)	360	34
Oxides of Nitrogen (NO _x)	450	29
Soot	22	-
Lead (PB)	1.6	35
Sulphur Dioxide (SO ₂)	50	1.2
Asbestos	2.2	-

In producing this level of pollution, road vehicles consumed 3.3 million tons of petroleum and 5.1 million tons of diesel fuel.

Despite still relatively low levels of car ownership in Poland, the use of motor vehicles is now a major contributor to pollution caused by carbon monoxide, hydrocarbons, oxides of nitrogen and lead. Particularly in cities and towns situated alongside the heavily trafficked roads, road traffic contributes highly to pollution.

The emission of carbon monoxide, hydrocarbons, nitrogen dioxide and soot is best addressed through improving engine technology, whereas lead and sulphur compounds arise from fuel additives and their reduction lies in improved fuel technology. Air and water transport are not major contributors to air pollution in terms exhaust emissions but rail transport should be mentioned. Whilst the majority of passenger and freight traffic is now moved by electric locomotives, which do not produce atmospheric pollution directly, electrical power stations account for over 50% of the total emission of sulphur dioxide and over 30% of the total emissions of nitrogen dioxide and dust.

Regulations covering emission controls on vehicles are contained in the Road Code, Laws on Environmental Protection and Development of the Environment and various State and Branch Norms. These include requirements to be met by new vehicles and for periodic testing during the life of vehicles and cover noise and the emission of carbon monoxide, hydrocarbons and oxides of nitrogen.

The immediate aim for Poland should be to match EC requirements, although certain countries, notably Sweden, Switzerland and USA demand higher standards. At present Polish regulations are similar to those which existed in EC countries in the past, and are considerably below current EC regulations with the prospect of falling even further behind when new EC proposals come into force. It is estimated that Poland is about 13 years behind Western Europe in regulation of exhaust emissions.

The maximum permitted noise emission from vehicles in Poland is regulated but these standards are again more lenient than EC equivalents.

Table 3.7.1 presents a comparison of Polish regulations on exhaust emissions for new vehicles with those currently existing and proposed for EC countries. Examples are given for the Polonez car and for trucks. In each case the Polish vehicle is given an index of 100. In the case of Polonez car, the existing Polish standard is 30-40% lower than the existing EC regulations and about 70% lower than the proposed new EC regulations. In the case of trucks, the Polish standard is 20-30% lower than the existing EC regulations and 40-50% lower than the proposed new EC regulations. The relatively high pollution caused by exhaust emissions of Polish vehicles is largely due to the practice of producing outdated vehicles under license from western manufactures.

Table 3.7.1 Comparison of Polish Regulations on Exhaust Gas Emission

Type of Vehicle/ Type of Emission		Polish Standard	EC Regulations	
			Existing	Proposed
POLONEZ				
Carbon monoxide	(CO)	100	62	28
Hydrocarbons	(H ₂ O)	100	73	28
TRUCKS				
Carbon monoxide	(CO)	100	75	36
Hydrocarbons	(H ₂ O)	100	69	36
Nitrous Oxide	(NO)	100	80	50

Source: Institute of Motor Transport

The road worthiness certificate requires checks to be taken on noise and exhaust emissions. Environmental testing is the responsibility of the Chief Inspector of Environmental Protection supported by Voivodship Inspectors, each with a team of inspectors. They are empowered to evaluate the use of machinery and equipment including means of transport. The major problem appears to be that certificates are issued without the vehicle necessarily complying with requirements. Trucks, apparently, are often granted road worthiness certificates without achieving the noise requirements and checks on exhaust emissions are not always carried out. Furthermore the equipment used to check exhaust emissions tends to be unreliable.

It is important that vehicles produced in Poland comply with EC regulations on exhaust emissions and noise. This will not only require new regulations to be introduced but also the whole of the vehicle production industry in Poland to be reformed. The engines used in Polish Vehicles are based on outdated technology and are not capable of being produced to comply with EC standards.

The average age of vehicles in use on Polish roads is older than in most Western European countries. Furthermore, there has been a tendency for old western vehicles to be imported into Poland, particularly from Germany. The reduction in the use of older vehicles could be tackled by the introduction of higher rates of vehicle taxation for such vehicles but a more effective measure in the short term would be through stricter vehicle testing in conjunction with the issue of road worthiness certificates.

It is important that noise and exhaust emissions are adequately checked before road worthiness certificates are issued. In this way some older vehicles will be forced off the road. Improved engine technology, as applied to new vehicles, should also include the production of vehicles capable of operating on unleaded fuel.

CHAPTER 4 TRANSPORT SUB-SECTORS

CHAPTER 4 TRANSPORT SUB-SECTORS

4.1 Railway Transport

4.1.1 Railway Network

As outlined in Fig. 4.1.1, Poland has an extensive operating railway network of 26,228 kilometers which comprises about 12,000 kilometers of major lines and more than 14,000 km of local lines (Table 4.1.1). Some 11,400 kilometers of the network (43% of the total) were electrified with DC 3,000 V system, and carry about 80% of the PKP's total traffic volume. More than 90% of the network (23,993 kilometers in 1990) is of standard gauge; the rest are feeder branch lines of narrow gauge connecting to the standard gauge network. In addition, 380 kilometers of broad gauge lines connect the iron works in Katowice with the Russian border. The railways are operated by a state owned enterprise, named Polskie Koleje Panstwowe (PKP).

Table 4.1.2 compares the PKP railway network with some other European countries and Japan. The density of PKP's railway network and the electrified rate is only next to the former West Germany.

The standard of the PKP railway is almost compatible with those of the west European railways as well as AGC and AGTC agreements. However, its quality standard is not satisfactory mainly due to the outdated technology used.

Table 4.1.1 PKP Railway Network

	1988	1989	1990	1991
	unit: km			
Standard Gauge Lines				
Route Length ^{1/}	24,188	24,287	23,993	23,852
Double Track Length	8,852	8,887	8,893	
Electrified Length	10,508	11,016	11,387	11,510
Narrow Gauge Lines	2,357	2,357	2,235	
Total Line Length	26,545	26,644	26,228	25,848

Note: ^{1/} these figures include broad gauge lines of 632 km
 Source: PKP Statistics and PKP Head Office in July 1992

Table 4.1.2 International Comparison of Railways in 1989

	PKP	DB	SNCF	BR	JR
Area (1,000km ²)	312.7	248.6	547.0	244.0	372.3
Population (mil.)	37.9	62.0	56.2	57.2	123.1
Railways					
Route Length (km)	26,644	27,099	34,322	16,588	20,341
Density	85.2	109.0	62.7	68.0	54.6
Electrified (km)	11,016	11,688	12,430	4,546	11,586
Rate	35.2	43.1	36.2	27.4	57.0

Note: unit for Route Density = km/1,000 km²
 unit for Electrified Rate = km/100 km

Source: UIC Statistics

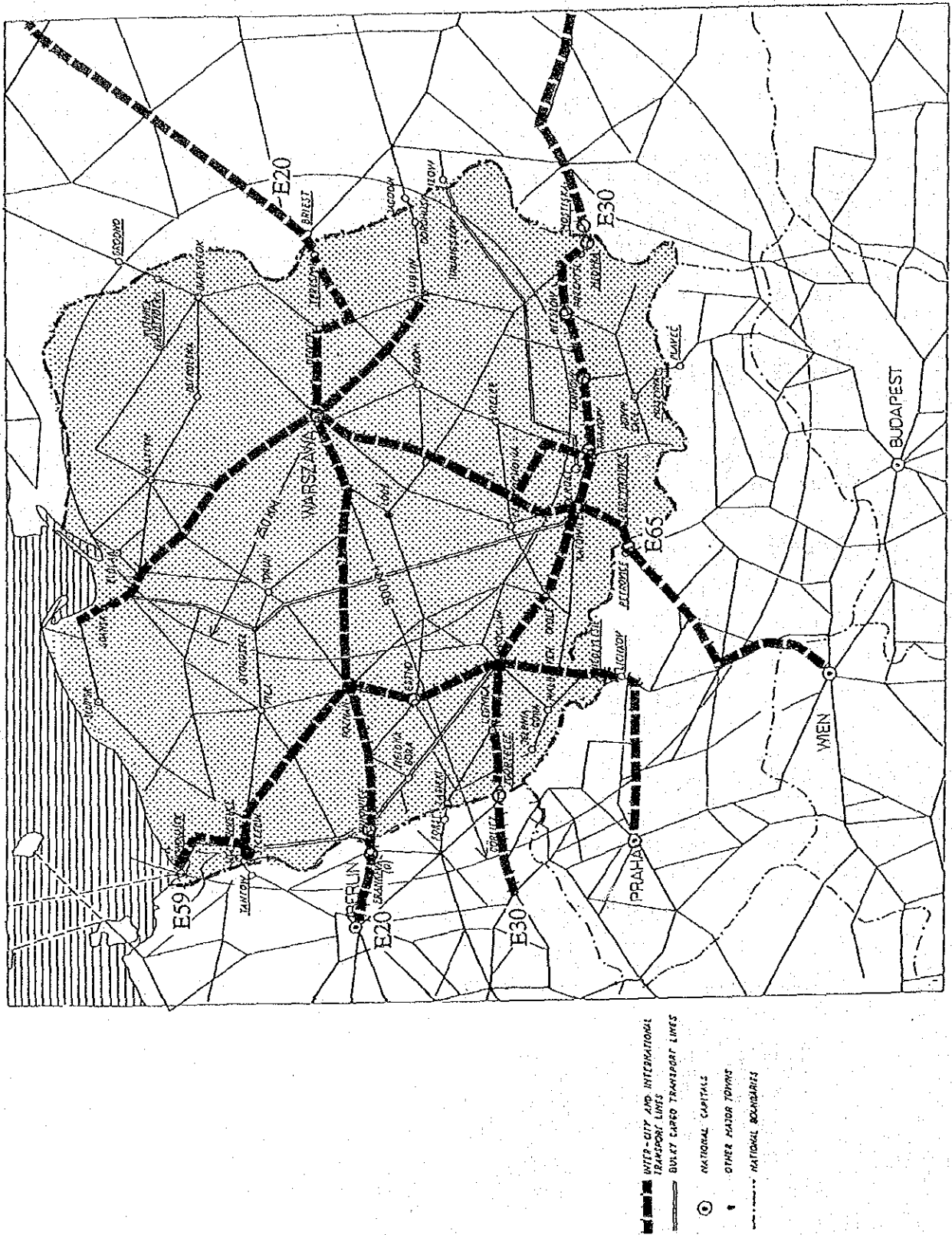


Fig. 4.1.1 Railway Network of Poland and Neighboring Countries

4.1.2 Railway Transport Demand

1) Passenger Transport

The number of railway passengers decreased from 1,100.5 million passengers in 1980 to 650.0 million passengers in 1991 which was about 59.0% of that in 1980 (Table 4.1.3). Total passenger-kilometers increased from 46.3 billion passenger-kilometers in 1980 to 55.9 billion passenger-kms in 1989, but the increasing trend was reversed to a decreasing trend in 1990 and 1991. The average distance of railway passengers showed an increasing trend from 42 kilometers in 1980 to 62 kilometers in 1991.

Judging from the experiences of the other countries, it is likely that the average distance by railway will be further lengthened in the future due to a possible shift of passengers to road transport in accordance with the increasing car ownership.

Table 4.1.4 shows the composition of railway passengers in the period from 1989 to 1991. The number of season ticket passengers declined from 43% to 31% during the period while normal ticket passengers increased from 56% to 69%. This is likely because of increasing unemployment, reduced commuter train operations and a shift of commuters to road transport. The average travel distance for season ticket passengers was about 18 kilometers in 1991. In terms of passenger kilometers, the share of season ticket passengers was as low as 9.3% in 1991.

In 1991, passengers by ordinary train amounted to 391.9 million persons (60.1% of the total) which was as large as 7.0 times of the passengers by express train (56.1 million, 8.6% of total). Of the passengers by ordinary train, the 2nd class passengers shared a majority of 99%, while of the passengers by express train, its share reached 86%, leaving a substantial share of 14% to the 1st class passengers on express trains.

The average travel distance by normal ticket passengers in 1991 amounted to 81.1 kilometers which was 4.4 times as long as that of the season ticket passengers. Passengers by ordinary train travelled 54 kilometers on average while those using express train travelled 270 kilometers, 5 times the ordinary train passengers. Due to the longer travel distance of passengers by express train, percentage share of express trains in terms of passenger kilometers showed a high rate of 37.8%, while that of ordinary train remained at 52.9%.

Table 4.1.3 Railway Passenger Transport

	1980	1985	1988	1989	1990	1991
Number of Passengers (million passengers)	1,100	1,005	984	952	790	650
Passenger-Kilometers (billion passenger-kms)	46.3	52.0	52.1	55.9	50.4	40.0
Average Distance (km)	42	52	53	59	64	62

Source: Statistical Yearbook of PKP and PKP Head Office

Table 4.1.4 Railway Passengers by Kind

	Passengers (million)		Passenger-Kms (million)		Ave. Distance (km)	
	1989	1991	1989	1991	1989	1991
Grand Total	951.6	651.9	55,888	40,088	58.7	61.4
Season Ticket	410.7	202.1	8,325	3,727	20.3	18.4
Normal Ticket	537.9	448.0	47,524	36,362	88.3	81.1
Ordinary Train	471.2	391.9	28,573	21,191	60.6	54.0
1st class	11.1	4.9	2,222	908	200.2	185.3
2nd class	460.1	386.9	26,351	20,283	57.3	52.4
Express Train	66.7	56.1	18,951	15,171	284.1	270.4
1st class	11.5	7.8	3,531	2,333	307.0	299.1
2nd class	55.2	48.3	15,420	12,838	279.3	265.8
Narrow Gauge	3.0	1.8	39	26	13.0	14.4

Composition (%)	Passengers (%)		Passenger-Km (%)	
	1989	1991	1989	1991
Grand Total	100.0	100.0	100.0	100.0
Season Ticket	43.2	31.0	14.9	9.3
Normal Ticket	56.5	68.7	85.0	90.7
Ordinary Train	49.5	60.1	51.1	52.9
1st class	1.2	0.8	4.0	2.3
2nd class	48.3	59.3	47.1	50.6
Express Train	7.0	8.6	33.9	37.8
1st class	1.2	1.2	6.3	5.8
2nd class	5.8	7.4	27.6	32.0
Narrow Gauge	0.3	0.3	0.1	0.1

Source: Statistical Year Book of PKP and PKP Head Office

2) Freight Transport

Freight carried by railway showed a constant decline in the past ten years from 482.1 million tons in 1980 to 227.8 million tons in 1991 (Table 4.1.5). This is equal to 53% decrease in the ten years. Freight ton-kilometers showed a similar decrease. The average transport distance was in the range of 280-300 kilometers. Table 4.1.6 shows railway freight transport by commodity in 1991. Coal had the largest transport volume of 111.8 million tons (share of 49.6%), followed by steel products with 17.9 million tons (7.9%), stone with 13.2 million tons (5.8%), ore with 10.8 million tons (4.8%), and oil and petroleum products with 10.2 million tons (4.6%). Total tonnage of these five commodities amounted to 163.9 million tons, accounting for more than 70% of total tonnage.

According to the 1990 statistics, 73.6% of the total freight transport was carried domestically while 23.6% was transported for international export and import. The remaining 2.9% was for transit.

Table 4.1.5 Railway Freight Transport

	1980	1985	1988	1989	1990	1991
Freight Carried (million tons)	482.1	419.4	421.3	382.9	278.1	227.8
Ton-Kilometers (billion ton-kms)	134.7	120.6	122.0	111.0	83.5	65.1
Average Distance (km)	279	288	290	290	300	286

Source: Statistical Yearbook of PKP and PKP Head Office

Table 4.1.6 Railway Freight Transport by Commodity in 1991

Commodity	Tonnage		Ton-Kilometers		Distance
	(1,000)	(%)	(million)	(%)	(km)
Grand Total	225,312	100.0	65,095	100.0	289
Mining Products	152,154	67.5	41,248	63.4	271
Coal	111,827	49.6	31,681	48.7	283
Stones	13,157	5.8	2,746	4.2	209
Ores	10,826	4.8	3,252	5.0	300
Others	16,344	7.2	3,569	5.5	218
Industrial Products	44,603	19.8	14,254	21.9	320
Metals	17,868	7.9	4,580	7.0	256
Oil & Oil Products	10,242	4.6	3,399	5.2	332
Fertilizer	3,778	1.7	1,567	2.4	415
Cement	3,425	1.5	1,305	2.0	381
Others	9,290	4.1	3,403	5.2	366
Agricultural Products	11,755	5.2	2,980	4.6	253
Wood and Wood Products	4,367	1.9	1,152	1.8	264
Agricultural Products	3,471	1.5	1,092	1.7	315
Grains	1,778	0.8	444	0.7	250
Others	2,139	1.0	292	0.4	136
Others	16,800	7.5	6,613	10.2	394

Source: PKP Head Office

4.1.3 Railway Infrastructure

1) Railway Track

The total length of railway track of PKP amounts to 59,156 kilometers, comprising main line tracks of 33,137 km, tracks in station areas of 14,816 km and sidings of 11,203 km. About 95 % of the total line tracks has a maximum gradient of less than 1 % and about 92% has a radius of curvature of larger than 600 meters. In terms of rail structure, 50% of the main line tracks is of 60 kg/m rail, 47% of 49 kg/m rail and the remaining 3 % of less than 49 kg/m rail.

Table 4.1.7 shows track volumes of materials supplied for improvement and maintenance during the period of 1981 - 1990. These materials were abundantly supplied during this period. Moreover, the heavy track maintenance machines produced under the license of Plasser & Theurer ensured steady maintenance works.

Railway tracks are generally well-maintained through extensive replacement of old ones. However, some issues are found: (1) corrugation of rail surface, in particular, the CMK section ; and (2) many rail cracks including welded joints. Investigation of the production process and quality control procedures of all the steel factories would be needed to reduce the possible incident of the rail cracks.

Table 4.1.7 Track Materials Supplied in 1981 - 1990

Items (unit)	Volume	Description
Rail (km)	21,000	equivalent to 63 % of main line tracks
Sleeper (1,000 pcs.)	18,248	equivalent to 40 % of total
Ballast (1,000 m ³)	18,243	equivalent to 40-50 % total
Turnout (sets)	37,540	equivalent to 56 % of total

Source: Interview to PKP in July 1991

2) Electric Traction Equipment

The electrified railway length amounted to 11,387 kilometers in 1990, covering 43% of the commercial route length (26,228 km). Electrification with DC 3,000 volt has been progressed at an annual rate of 400 - 500 kilometers in recent years.

Electric substations of 6 - 15 MW are located at an average interval of 20 - 25 kilometers, connected by transmission lines of 15 - 30 kilo-volts. Contact wire is made of double 100 or 150 square mm hard copper wire while catenary wire is made of 120 (or 95 - 240) square mm copper stranded wire.

Issues with regard to the electric traction equipment are that:

- (1) most of the substations are manually controlled; and
- (2) contact wire is anchored by a single span in some sections, which might cause problems in higher speed operation.

3) Signalling

Total number of light signals amounted to 28,205 in 1990, accounting for 79% of the total number of signals. The centralized traffic control system, however, covered only 260.6 kilometers, accounting for about 1% of the commercial route length while the length of railway lines equipped with an automatic train stopping system amounted to 17,199 kilometers, accounting for 66% of the route length.

At level rail/road crossings, "automatic warning with half gate" was installed at 137 crossings and "automatic warning without gate" at 1,215 crossings, the total of the two accounting for only about 7% of the total number of level crossings.

Issues with regard to signalling are that:

- (1) automatic train stop system warns a locomotive driver without any relation to the signal aspects, which is serious from traffic safety point of view;
- (2) semi automatic block covering 14,167 kilometers requires operators to confirm passing of other trains at the entrance of each block;
- (3) centralized traffic control (CTC) is installed only over a distance of 206 kilometers, which reduces savings of operators as well as efficiency of train operations; and
- (4) most of the level crossings are not automatically controlled, including 12,663 crossings without protection measures and 4,669 crossings with manual operation.

4) Telecommunication

The telecommunication network in 1990 comprised an open wire system of 9,704 kilometers and a cable system of 14,254 kilometers which covered all the electrified lines. 50,000 mobile radios were prepared to cover 16,000 kilometers of the railway lines. The number of automatic exchanges and subscribers amounted to 1,356 and 120,812 units, respectively.

Issues with regard to telecommunication are that: (1) most of the telephone exchanges are obsolete with no availability of spares; and (2) capacity of telephone trunk lines is not enough to accommodate traffic demand.

Table 4.1.8 shows the capacity shortage of telecommunication. To improve the situation, an optical fiber cable network is now under construction between Gdynia and Gdansk, and between Warsaw, Krakow, Katowice and Czechoslovakia border stations.

Table 4.1.8 Capacity Shortage of Telephone Trunk Line

Regional Office		unit: number of channels		
		(1) Present Capacity	(2) Required Capacity	(3) = (2)/(1)
Warsaw	- Lublin	33	72	2.2
Warsaw	- Krakow	24	60	2.5
Warsaw	- Katowice	48	90	1.9
Warsaw	- Gdansk	24	84	3.5
Warsaw	- Poznan	48	120	2.5
Warsaw	- Szczecin	-	30	-
Warsaw	- Wroclaw	12	30	2.5

Source: Papers prepared by the Signalling and Telecommunication Department, PKP in June 1990.

4.1.4 Rolling Stock

PKP had 2,512 electric locomotives, 4,189 diesel locomotives, 1,173 EMUs, 6,789 passenger cars and 186,184 freight wagons in 1990 (Table 4.1.9). However, the operation ratio of freight wagons was as low as 48.3%, followed by diesel locomotives with 54.1% and electric locomotives with 67.9%.

Most of the existing electric locomotives are old fashioned ones designed in 1960s, including ET22, ET21, EU07, ET41, ET40 and ET42. Only a limited number of new electric locomotives has been introduced. 1,921 units of the diesel locomotives which are not in operation. Due to the steady increase of electrified lines, it is unlikely that the diesel locomotives not in operation now will be reinstated to be used again. Efforts to find a market for them in developing countries would be necessary to solve this problem though the potential market might be limited because of the PKP's axle load of 20 tons.

The in-operation ratio of passenger car is second highest with 86.4%. However, due to the aged fleet, passenger cars are heavy and consume a lot of energy for traction. New models need to be introduced to replace old cars to save energy and improve riding comfort.

There are about 96,000 freight wagons older than 20 years which are not in operation. PKP has a plan to scrap 62,000 wagons during the period from 1991 to 1994. At the same time, it would be necessary to introduce more efficient wagons for coal transport by taking account of (1) replacement of hopper wagons by common wagons for higher payload; and (2) increase of tippler in place of crane for higher unloading efficiency and less damages to wagons.

Table 4.1.9 Rolling Stock in 1990

Type	(1) Registered Number	(2) Number in Operation	(3) = (2)/(1) %
Electric Locomotive	2,512	1,706	67.9
Diesel Locomotive	4,189	2,268	54.1
EMU	1,173	1,052	89.7
Passenger Car	6,789	5,865	86.4
Freight Wagon	186,184	89,940	48.3

Source: "Registered Number" by interview in July 1991 "Number in Operation" from PKP Year Book 1990

4.1.5 Railway Operation

1) Passenger Transport

Passenger traffic of PKP amounted to 40.0 billion passenger-kilometers in 1991 which was about 80 % of that in the previous year. Passenger traffic by express and fast trains has steadily been increasing its share in the total traffic from 33.5 % in 1989, to 35.8 % in 1990 and 37.8% in 1991.

The passenger fare is commensurate with travel distance, for instance, 1,000 zloty for 1-10 km, 4,000 zloty for 41-50 km and 8,000 zloty for 91-100 km for the second class of an ordinary train. Passenger fares for other kind of trains and classes are determined by factors based on the fare of the second class of ordinary trains:

1st class of ordinary train:	150 %
2nd class of fast train:	150 %
1st class of fast train:	225 %
2nd class of express train:	200 %
1st class of express train:	300 %

A variety of fare discount has been introduced to the passenger fares including discount for government employees, students, monthly ticket and so on. PKP estimated the average income per passenger-kilometer at 53 zloty in 1991 while the average cost is estimated at 248 zloty, the average cost being as high as 4.8 times the average income.

Major issues of railway passenger transport are:

- (1) a low frequency of train operations;
- (2) a train operation schedule that is not necessarily convenient to customers; and
- (3) a low average train speed due to various speed restrictions and schedule adjustments with freight trains.

A computerized train seat reservation system has been installed at several major stations including Warszawa, Krakow, Katowice, Gdansk, Poznan and Szczecin. This system is planned to be upgraded to cover international trains as well as all domestic trains. In 1990, the average daily number of beds and seats available for reservation amounted to 63,000. The average occupancy is reportedly 54.9%. Customer services including ticketing windows need to be improved.

2) Freight Transport

The freight traffic of PKP in 1991 amounted to 65.1 billion ton-kilometers which was equal to 78% of that in the previous year. Major freight comprises bulky cargoes such as mineral resources, agricultural and forestry products, accounting for as much as 88 % of the total freight. Only coal accounted for 43%, most of which is produced in Katowice area. 37% of the total ton-kilometers is related with international freight transport including export, import and transit.

The freight fare is determined by type of transport, cargo weight and transport distance. A freight fare of 8,699 zloty per 100 kilogram is charged for cargo transport of 20 tons over a distance of 300 kilometers by normal transport. The freight fare for fast transport is twice as much as for normal transport. PKP estimates the average income per freight ton-kilometer in 1991 at 259.6 zloty and the average cost at 195.1 zloty, the average cost being about 75% of the average income.

Freight transport of wagon load is handled at about 1,600 stations over the nationwide network. Too many freight stations can be a reason for long time consumption by railway transport. Exclusive freight trains are widely used for transporting bulky cargoes including coal. These trains, however, are not operated directly from consignors' sidings to consignees' sidings but are sent to visit 3 to 4 marshalling yards where it takes about 10 hours per yard on average. Thus, railway cargo transport needs unnecessarily long hours to the final destinations.

One exclusive container train is operated daily in both directions between Malszewicze (Russian border) and Rzepin (German border), and forms a part of the Siberian Land Bridge. The average container load amounts to 120 TEU in both directions. An exclusive piggy back train with 10 trailers of 38 ton load is operated on a weekly basis between Gdynia and Wien via Zebrydowice (Czechoslovakian border). These container and piggy back trains are just operated for transit cargoes across the Polish territory. A container terminal is now operated at Gdynia Port which is connected with a railway line. SPEDPOL has developed several container terminals connected with railway lines at major cities. At the moment, however, domestic and international container transport by railway is still minimal.

PKP has been working on development of a combined transport system under World Bank support. As a first step, an international forwarding company, "POLCOMBI", was established as a joint stock company. However, due to the uncertainty of development prospects of combined transport, any projects which incur large investment have currently been held back.

3) Train Operation

(1) Train Speed

Table 4.1.10 shows the average train speed in 1990. The average commercial speed of passenger trains was 44.9 km/h while that of freight trains was 23.9 km/h. The average commercial train speed of passenger trains was 82.4% of the average running train speed for the total of passenger trains while that of freight trains was 57.3% of the total of freight trains. This fact infers that inefficient shunting works are involved for freight trains.

(2) Train Delays

Table 4.1.11 summarizes train delays in recent years. The percentage share of delayed trains of the total number of passenger trains was lowered from 5.7% in 1988 to 3.3% in 1990 although average delay per delayed train remained at a level of 22-24 minutes. The percentage share of delayed trains of the total of freight trains was also lowered from 18.7% in 1988 to 9.3% in 1990. The average delay per delayed train in 1990 was significantly improved, compared with that of 1988 and 1989.

(3) Energy Consumption

Table 4.1.12 summarizes energy consumption for railway traction. In passenger transport, electric traction accounted for 85% and diesel traction for the remaining 15% in 1990. The average energy consumed per 1,000 passenger kilometer was:

$$\begin{aligned} \text{Electricity} &= 30.2 \times 0.85 = 25.7 \text{ WH; and} \\ \text{Diesel Fuel} &= 15.2 \times 0.15 = 2.28 \text{ liter.} \end{aligned}$$

In freight transport, electric traction accounted for 86% and diesel traction for the remaining 14% of the energy consumption in 1990. The average energy consumed per 1,000 freight ton kilometer was:

$$\begin{aligned} \text{Electricity} &= 46.4 \times 0.861 = 40.0 \text{ WH; and} \\ \text{Diesel Fuel} &= 23.3 \times 0.14 = 3.26 \text{ liter.} \end{aligned}$$

(4) Railway Accidents and Casualties

Table 4.1.13 shows an international comparison of railway accidents and casualties. PKP has a relatively low rate of railway accidents and casualties because of the lower rate of accidents at crossings at the moment. It is likely that the accident rate would be worsened parallel with the increasing vehicle traffic in the future.

Table 4.1.10 Average Train Speed in 1990

	(1) Running km/h	(2) Commercial km/h	(3) = (2)/(1) %
Total Trains	48.8	33.8	69.3
Passenger Trains	54.5	44.9	82.4
Express Trains	84.5	76.7	90.8
Fast Trains	68.4	59.6	87.1
Long Distance Trains	56.5	46.4	82.1
Local Trains	49.4	39.9	80.8
Freight Trains	41.7	23.9	57.3
Express Trains	49.1	33.3	67.8
Fast Trains	46.2	30.6	66.2
Long Distance Trains	43.3	26.0	59.9
Sectional Trains	37.4	20.3	54.3
Collective Trains	33.0	13.6	41.2
Transfer Trains	36.9	18.5	50.1

Source: PKP Statistic Year Book 1990

Note: "Running" stands for average running speed, "commercial" stands for average commercial speed.

Table 4.1.11 Train Delays

	1988	1989	1990
Passenger Trains			
1) Total Trains	2,840,370	2,674,087	2,774,393
2) Delayed Trains	160,993	124,332	91,447
3) =2)/1) in %	5.7	4.6	3.3
4) Total Delays in hours	58,727	49,882	37,192
5) Average Delay per Train in minutes	1.2	1.1	0.8
6) Average Delay per Delayed Train in minutes	21.9	24.1	24.4
Freight Trains			
1) Total Trains	1,550,622	1,392,877	1,004,024
2) Delayed Trains	289,683	225,782	93,316
3) =2)/1) in %	18.7	16.2	9.3
4) Total Delays in hours	1,195,032	1,652,645	309,275
5) Average Delay per Train in minutes	46.2	71.2	26.0
6) Average Delay per Delayed Train in minutes	247.5	439.2	198.9

Source: PKP Statistical Year Book of 1990

Table 4.1.12 Energy Consumption for Railway Traction

	1988	1989	1990
Electric Consumption in MWH	5,290,115	5,185,033	4,660,745
Fuel Consumption in kl	507,343	467,265	382,031
Electric Consumption Rate			
per 1,000 gross ton-km in kwh	20.7	20.9	22.3
per 1,000 passenger km in kwh	27.0	25.6	30.2
per 1,000 net freight ton-km in kwh	41.5	43.1	46.4
Diesel Fuel Consumption Rate			
per 1,000 gross ton-km in liter	8.9	9.4	11.2
per 1,000 passenger km in liter	11.6	11.6	15.2
per 1,000 net freight ton-km in liter	17.8	19.5	23.3

Source: PKP Statistical Year Book 1988 - 1990

Table 4.1.13 Railway Accidents and Casualties

	Poland			DB	SNCF	BR	JR
	1988	1989	1990	1988	1988	1988	1988
Collisions	111	101	99	839	297	415	682
Derailments	106	92	65	253	64	134	101
Total	217	193	164	1,092	361	549	783
per million train-km	0.53	0.48	0.44	1.87	0.72	1.42	1.22
Fatal Casualties							
Passengers	23	5	21	53	38	32	0
Railway Employees	4	4	3	35	22	22	0
Others	73	86	89	146	164	8	140
Total	100	95	113	234	224	62	140
per million train-km	0.24	0.22	0.30	0.25	0.33	0.02	0.22

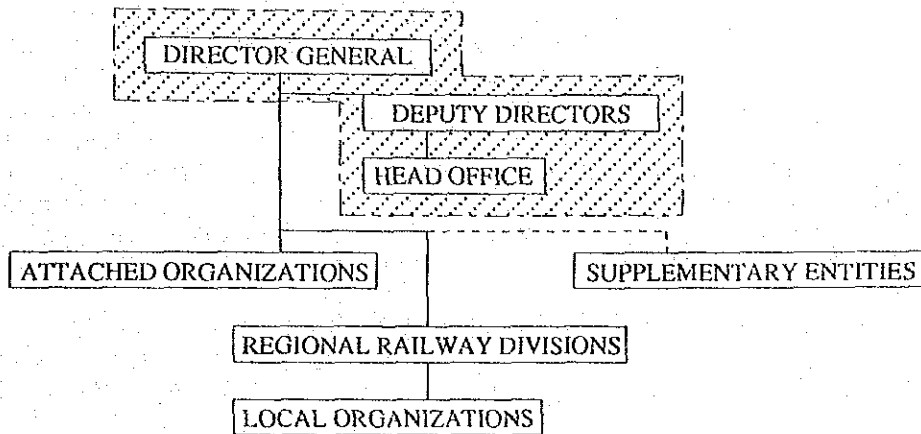
Source: PKP Statistical Year Book 1988 - 1990
UIC Railway Statistics 1988

4.1.6 Polish Railway Company (PKP)

1) Organization of PKP

PKP is a state enterprise. The General Director is appointed by the government, and the deputy general directors and chief accountant are appointed by the General Director with the approval of the Minister of Transport and Maritime Economy.

Fig. 4.1.2 shows the organization of PKP. Under the Head Office, there are eight (8) Regional Railway Divisions, twenty-seven (27) departments/bureaus attached to the Head office and sixty-three (63) supplementary entities. The number of employees in 1990 amounted to 332,628 persons for transport including head office, attached organizations and Regional Railway Divisions and 69,310 persons for supplementary entities.



ORGANIZATION OF HEAD OFFICE

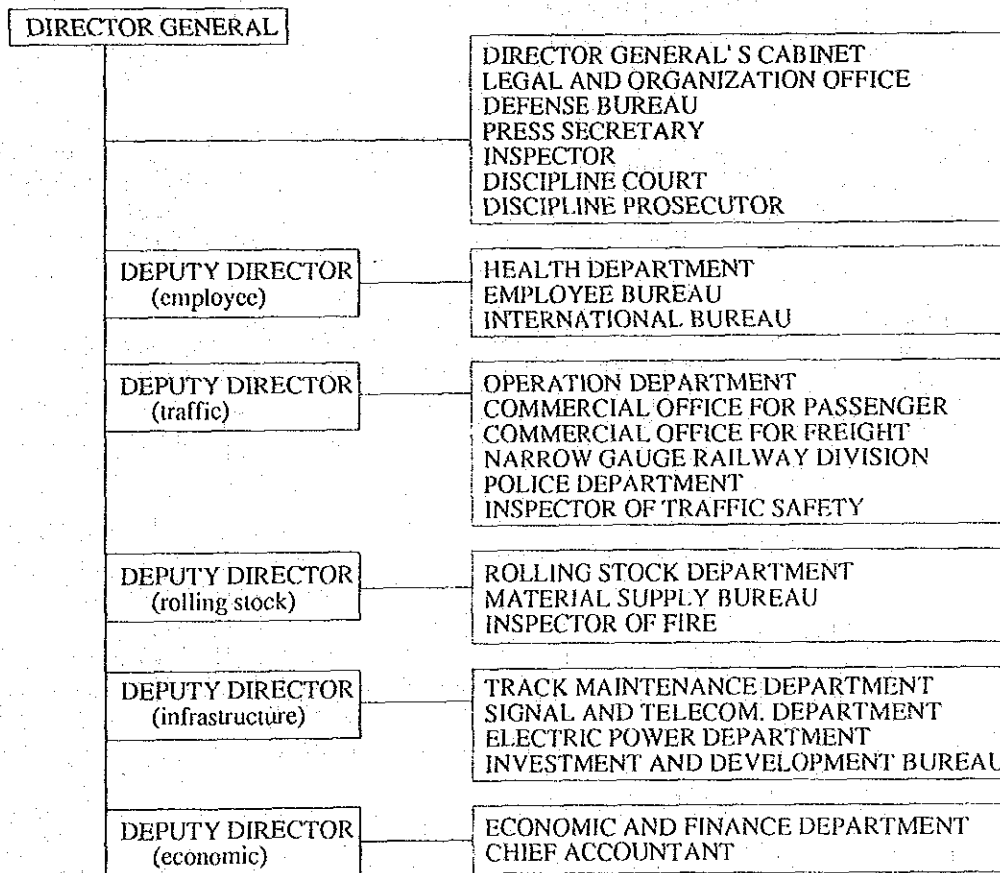


Fig. 4.1.2 Organization of PKP

The organization of PKP is now being restructured to reduce the excessive number of employees by the end of 1991 and to separate supplementary entities from PKP. At the end of 1991, PKP employment reached 309,164 persons, a reduction of 23,464 persons compared with the previous year. The reduction of employment was achieved mostly through regular and special retirement schemes.

PKP affiliates were separated from PKP and they are now under the supervision of MTME. They are expected to be financially independent from MTME by cultivating new customers other than PKP.

For the purpose of developing a comprehensive policy to gear the PKP to a free market orientation, PKP established a strategy planning unit at its head office in the beginning of 1992. The existing PKP organization should be further restructured by taking the following issues into account:

- (1) To establish a policy planning group to gear the PKP to a free market orientation in terms of marketing, operations, cost accounting, information systems and human resource development. PKP established a strategic planning unit in April 1992 to this end;
- (2) To establish a technology innovation group to make the PKP railway system more efficient and effective in terms of customer services as well as cost reduction;
- (3) To decentralize the decision making power from top management to middle and lower management as much as possible with support of an improved communication system; and
- (4) to develop a management training program to help management staff change their way of thinking from that of the centrally controlled system to that of a market economy.

2) Financial Situation of PKP

Table 4.1.14 shows the Profit and Loss Statement of PKP for the years of 1988, 1989 and 1990. Sales Profit achieved in 1988, 1989 and 1990 was always in deficit, -120, -317 and -2,028 billion zloty in respective years. The financial imbalance of PKP was covered by subsidies from the state: 210 billion zloty (25.1% of total revenue) in 1988, 650 billion zloty (27.5%) in 1989 and 3,535 billion zloty (20.9%) in 1990.

In passenger traffic, the revenue was always in deficit: -200 billion zloty in 1988; -676 billion zloty in 1989; and -5,603 billion zloty in 1990. Revenue per passenger kilometer was calculated at 2.03 zloty in 1988, 4.35 zloty in 1989 and 34.04 zloty in 1990 while expenditure per passenger kilometer was calculated at 5.87 zloty (expenditure/revenue ratio of 2.89), 16.46 zloty (3.78) and 145.43 zloty (4.27) in respective years. This was largely due to the governments policy and public conception to keep the passenger fares as low as possible on one hand and the rules of allocating common costs to passenger and freight transport on the other.

In freight traffic, the revenue was always sufficient to cover the expenditure with a surplus of 92 billion zloty in 1988, 339 billion zloty in 1989, and 3,391 billion zloty in 1990. Revenue per freight ton kilometer was calculated at 5.79 zloty in 1988, 18.64 zloty in 1989 and 177.68 zloty in 1990 while expenditure per freight ton kilometer was 5.04 zloty (expenditure/revenue ratio of 0.87), 15.59 zloty (0.84) and 137.12 zloty (0.77) in respective years. Profitability of passenger and freight transport services is largely dependent on the allocation method of the costs common to respective transport services.

Table 4.1.15 shows the composition of cost items of PKP. The biggest cost item was personnel cost including wages amounting to 38.6% of the total cost in 1988, 45.4% in 1989, and 31.8% (second biggest) in 1990, followed by repair cost of 32.0%, 30.5% and 34.7% (biggest) in respective years.

In financial analysis of railway management, it is critically important to have detailed information on revenue and expenditure by railway lines to identify the reasons of generating profit and loss. The identification is indispensable to find solutions to restructure the railway services, for example, by closing the most unprofitable lines as well as improving service levels to attract more passengers on profitable lines. Under the present accounting system of PKP, however, accounting information is not classified by railway services and lines, thus making it almost impossible to take appropriate measures for improvement. A new accounting system is now being prepared to comply with these requirements in the future.

Table 4.1.14 Profit and Loss Statement of PKP

	unit: billion zl.			
	1988	1989	1990	1991
Revenue:				
Passenger Traffic	106	243	1,712	
Freight Traffic	708	2,073	14,854	
Other Revenue	22	51	340	
Sub Total	836	2,367	16,906	23,209
Expenditure:				
Passenger Traffic	306	919	7,315	
Freight Traffic	616	1,734	11,463	
Other Costs	34	31	156	
Sub Total	956	2,684	18,934	31,085
Sales Profit	-120	-317	-2,028	-7,876
Subsidies				
for Passenger Transport	210	650	1,535	
for Freight Transport	0	0	0	
for Maintenance/Repair	0	0	2,000	
Sub Total	210	650	3,535	3,735
Gross Profit	90	333	1,507	-4,141

Source: Paper prepared by Economic and Finance Department PKP, July 1990, and Paper Prepared by Central Statistical Office, PKP July 1992

Table 4.1.15 Composition of PKP Cost Items

	1988		1989		1990		1991	
	bl.zł	%	bl.zł	%	bl.zł	%	bl.zł	%
Depreciation	103	10.8	109	4.1	1,784	9.4	6,423	21.8
Wages	228	23.9	758	28.2	3,665	19.3	6,539	22.2
Personnel Cost	141	14.7	461	17.2	2,362	12.5	1,287	4.4
Fuel and Energy	129	13.5	350	13.0	2,782	14.7)		
Repair Cost	306	32.0	818	30.5	6,567	34.7)	15,150	51.5
Other Cost	49	5.1	188	7.0	1,774	9.4)		
Total Cost	956	100.0	2,684	100.0	18,934	100.0	29,399	100.0

Source: PKP Statistical Year Book and Central Statistical Office PKP, July 1992

3) Investment Financing of PKP

Table 4.1.16 shows investment financing of PKP. The percentage share of investment for construction increased from 40.1% in 1988 to 59.5% in 1990 while investment for purchases decreased from 44.3% in 1988 to 31.1% in 1990. In terms of sources of finance, percentage share of self finance maintained at a level of 54 to 63%, most of which resulted from depreciation while the total of budget and bank credit increased from 12.6% in 1988 to 26.5% in 1990.

Table 4.1.16 Investment Financing of PKP

	1988		1989		1990	
	bl.zł	%	bl.zł	%	bl.zł	%
Expenditure:						
Investment - construction	93.4	40.1	204.5	41.8	1,694.9	59.5
- purchase	103.1	44.3	169.9	34.7	885.8	31.1
- others	2.7	1.2	5.5	1.1	35.4	1.2
Sub Total	199.2	85.6	379.9	77.6	2,616.1	91.9
Shares Transferred	5.7	2.4	6.1	1.2	65.1	2.3
Repayment of Credit	8.9	3.8	44.7	9.1	56.5	2.0
Debt at the beginning	18.9	8.1	58.8	12.0	109.6	3.8
Total Expenditure	232.7	100.0	489.5	100.0	2,847.3	100.0
Source of Finance:						
Debt at the end	59.1	25.4	109.8	22.4	285.2	10.0
Self Finance - depreciation	103.3	44.4	108.7	22.2	1,784.4	62.7
- others	38.8	16.7	156.9	32.1	0.0	0.0
Sub Total	142.1	61.1	265.6	54.3	1,784.4	62.7
Budget	16.8	7.2	37.8	7.7	716.4	25.2
Bank Credit	12.6	5.4	71.4	14.6	36.8	1.3
Shares Received	1.3	0.6	3.1	0.6	9.6	0.3
Others	0.8	0.3	1.8	0.4	14.7	0.5
Total Finance	232.7	100.0	489.5	100.0	2,847.3	100.0

Source: Paper prepared by Economic and Finance Department PKP, July 1991

Note: "bl.zł" stands for billion zloty.

Investments for construction works and purchases during the period of 1981 - 1990 are shown below:

(1) Track	
Rail Replacement	21,000 km
Sleepers	34,369,000 pcs.
Crushed Stone	18,243,000 m ³
Turnouts	37,540 sets
(2) Electrification	4,519 km
(3) Rolling Stock	
Electric Locomotives	1,014 cars
Diesel Locomotives	551 cars
EMUs	494 sets
Passenger Cars	3,533 cars
Freight Wagons	62,246 cars

The above investments are deemed excessive in consideration of the existing commercial route length of 26,228 km and the number of rolling stocks not in operation now. This exemplifies the fact that investment decision making in the centrally planned system did not pay enough attention to economic and financial returns that the investments would produce.

Unit prices of the investment items are far lower than the international prices, being one-fourth or one-fifth. In the coming years, however, it would not be possible for PKP to invest as arbitrarily as in the past because of the government evaluation on PKP infrastructure investments as well as on the rising unit costs. The PKP investment plan for the period from 1991 to 1995 would be forced to be revised because of the shortage of financing and cost push factors.

4.1.7 Integration with the EC Railway Systems

There seem to be several issues for further integration of the Polish railway system into the EC railway system:

- (1) Adjustment and improvement of PKP's main railway lines to European standards

This is especially true for the AGC lines, and particularly for the Berlin - Warsaw line.

- (2) Improvement of rolling stock to meet the European standards

Standards of domestically manufactured passenger coaches are incompatible with those adopted in the EC countries. PKP needs either to purchase foreign made coaches which have cleared the standards or to modify the existing fleet of coaches.