

5.8.4 Government subsidies by phases

The government subsidies by phases is shown in the following table :

Table 5.8.7 Government subsidies by phases (m PLN)

Phase		Passenger subsi dy	Investment subsidy	Total
Phase 1 (1997-1998)	1997	571.5	400	971.5
	1998	571.5	800	1,371.5
Phase 2 (1999-2000)	1999	571.5	800	1,371.5
	2000	571.5	800	1,371.5
Phase 3 (2001-2002)	2001	571.5	800	1,371.5
	2002	571.5	800	1,371.5
Phase 4 (2003-2005)	2003	571.5	400	971.5
	2004	571.5	400	971.5
	2005	571.5	400	971.5
Phase 5 (2006 -)	2006	571.5	400	971.5

5.9 HUMAN RESOURCE DEVELOPMENT

PKP has indicated a pressing need to modify its human resource function while it goes through a painful transition from the old Communist influenced method of staffing under the quota production system to a market-based commercial sector organization embracing market driven solutions with professional style human resources management and development. The transition will not be easy and changes are expected to be slow, particularly as both older managers and many members of the trade unions have never known any other system.

The primary cultural shift, albeit painful for staff with many years of service, concerns the basic rules of employment tenure. Lifetime employment is a reward for high quality service to the organization rather than a right of all workers. This chapter has proposals to introduce professional, market-style personnel management at PKP after gleaning the inputs from numerous officials at PKP and the MTME including Trade Unions leaders themselves.

5.9.1 Training System

PKP has developed ongoing training programs for its personnel. Training consists of three essential levels:

- Trade/Vocational at the High School Level - courses given for signal/electrical, power engineering, train drivers, welding, machinists and the like. Ample railway training programs are located throughout the country.
- Professional - consultants have developed several basic business development and marketing courses for such anticipated commercial-sector activities as accounting, marketing, financial management and cost analysis. These course are administered with funds provided by the European Union PHARE program. Demand far exceeds supply such that average wait time to receive basic business training is over two years. The time should be shortened considerably.
- Specialized Courses - are given to certain managers who require it on an as needed basis. For example, a manager in the Productivity Assessment Department had received specialized training in industrial process control methods for a variety of ergonomic and logistics applications.

Education. As a function of inheriting many workers under the old system of full employment, current labor force education as well as PKP Strategy Department targets for the year 2005 are shown below:

Current / Planned education levels

Level	Current	Planned
Elementary / Occupational	60%	60%
High School	36%	30%
College	4%	10%

Aside from the mini-courses provided by outside consultants, PKP relies heavily on on-the-job training for tradesmen to be promoted from apprenticeship positions to fully qualified train drivers running fast trains, for example.

Recommended training improvements are outlined below:

- 1 Changing the culture from old methods and technology to new. This is a classic problem in railroading. The solution is obvious but elusive. As new technology and methods are introduced, workers will be forced to learn new methods on the job. The ratio of experienced to inexperienced personnel must be kept low by regionally and functionally rotating positions across PKP regions and posts. For example, the introduction of high

speed trains and automatic train control systems requires experienced operating, maintenance and engineering staff to ensure reliability over time. One way to stem the difficulties is to write training programs into the cost of acquiring new equipment such as locomotives and rolling stock, track-work, signal devices, and automation. Employees are generally willing to learn new methods if they are given the proper training.

- 2 **Functional Job Rotation** - typically a railway worker may spend his entire career in the Track Department or an Operating/Exploitation Department. Alternatively, many railways require their staff, especially middle and senior management, to internship at all core railway departments for a period of several months per department. When the manager returns to his/her department after this experience, they are better equipped to understand how to facilitate the smooth integration of seamless transportation from a systems perspective and may take advantage of job vacancies in another department in the future.
- 3 **Professional Development** - because of the pace planned for privatization and the realistic limits on available investment funds, the larger problem of training for the new PKP arguably lies in those responsible for understanding and implementing new methods of cost controls, sales, marketing, budgeting, logistics and engineering methods. It is recommended the following approaches be considered immediately. Have top and middle managers apprentice in foreign freight operating departments and Japanese passenger departments. In exchange, PKP can pay back through a variety of mechanisms including developing combined transport agreements with donor railways, agreeing to sole-source a percentage of new supply acquisitions or combined train service to those nations supplying the expertise. In addition, PKP should investigate the use of EU-PHARE, IBRD, JICA, and other funding sources to achieve this goal.

5.9.2 Personnel Management System

Top-Down Structural Reform Model - As the vertical model is fully implemented, the railway management structure should serve to give top and mid-level managers a high level of accountability. For example, we divide the freight sector into key commodity groups and assign a top-level manager to run that group. The Assistant General Director - Coal, is directly responsible for the fiscal well being of that product group and is compensated accordingly. His direct and indirect reports represent a sales team dispersed regionally throughout the country that answer to him. His base compensation package is tied to the

performance of the coal business with a highly variable bonus potential should he exceed his sales targets for the fiscal year. A system of this sort can only be implemented once an FMIS is in place and, ideally, a car scheduling and operations management system is also available to monitor results including real-time shipper requests to monitor the progress of a movement from any point along the mainline track network.

PKP is a long way from implementing a management structure of the type described above but can begin to emulate it based on the ability to track regional and ultimately line-level profit and loss through a timely FMIS. Steps have been taken to appoint sector-level managers to begin this process.

At one railway, top management recently completed its fourth generation management re-organization where job descriptions are written for the top posts by the President and the Board. The President personally interviews his five Vice Presidents including the incumbent in each position. The process is competitive and the most qualified and experienced man is selected from the applicant pool as his direct report. Once appointed, the next level of subordinates is recruited from both within and outside the railway after the Vice Presidents write their job descriptions. May the best man win the post. The process works all the way to the Line Supervisor's post at responsible for the actual work teams in the field. This system has caused pain at this railway because many incumbent managers have lost their positions to the competition. Yet in general, those who survive become integrated with those brought in from the outside and the railway management and supervision is strengthened through the process.

(1) Recruitment and Hiring

Existing system. A review of the existing hiring system has identified the following issues with the current system:

- Many new hires were inherited under the old system of full employment in the economy
- Military service personnel receive job preference to the extent that positions are held open for up to one and a half years while an individual serves compulsory service in the armed forces. In the interim, PKP is often forced to create a slot and hire a new individual to fill the labor gap created by such a long job absence.
- PKP has difficulty attracting new hires as a result of its low wages relative to the

private sector, especially for laborers in the field, where PKP is competing with the construction sector to attract workers.

- Qualifications-based hiring does exist but should be simplified. There is no system in-place at this time to review the performance of Union positions already in posts. Qualifications and experience exams are used to get a better job, especially in safety critical positions such as train drivers and train control. These individuals also receive additional medical benefits for eye exams and physicals.
- We could find no clearly written job descriptions to attract talented individuals to PKP except for top manager posts.

Recommendations. As part of its structural reform program, PKP should have a clearly delineated set of job descriptions for all sectors and posts in both core and non-core functions. To the best of our knowledge position responsibilities do not exist at PKP. Posts describe the expectations of the individual during the performance of their duties, the number of tasks assigned, the number and description of subordinates duties (as appropriate), the basis points for performance evaluation, the reporting structure for this post; and a set of minimum experience, qualifications and education required to fill the position. Points assigned to the position establish and dictate the level of base pay. A well written description of responsibilities avoids future conflicts and allows the individual and supervisor to judge performance objectively. In addition, the position should be updated twice a year along following the review of the individual by their direct supervisor.

Rating of posts establishes the base-pay and pay range in step level increments from lowest to highest step. Together with job posts, performance reviews shall be developed which include the job description, expectation of daily duties, a rating system for the individual's strengths and weaknesses, and areas for improvement in the future. In addition, the performance review system and job description together are used by the supervisor to determine minimum acceptable performance in the position. After three warnings for improvement, an individual may be terminated for inadequate performance. He/she may take the case to an independently appointed merit review board comprised of selected managers and union members selected for exemplary service to the organization. The decision of this board is legally binding and final.

(2) Performance-based pay to Achieve the high-performance Railroad

At present, PKP has approximately twenty-five (25) components built into its wage structure including night time and weekend work, dangerous work, overtime differentials, qualifications based differentials and many others. Negotiations are underway to simplify the number of wage categories into the following elements including; 1) basic work the individual is charged with; 2) difficulty of work, 3) responsibility level of work and ; 4) additional categories of work. A bonus fund would be awarded for at least fifteen (15%) of the budget available for wages and the employee would be evaluated by his/her direct supervisor. Bonus amounts would be given for additional tasks completed and accident prevention.

As part of each employees basic job, a regular performance review should be instituted for all posts. The main difficulties we have with the PKP merit-based pay initiative are laid out as follows:

- 1) PKP's current plan does directly link company performance/profitability with employee performance. Further, PKP wages now represent approximately 60 percent of total operating funds and are growing as shown:

PKP wages represent (60%) percent of total operating budget

- The proportion is increasing (45% in 1995)
- Investment in new equipment, maintenance & rehabilitation is severely constrained
- Japan's railway labor costs 34% of the operating budget (US 25% to 35%)
- Immediate labor cost control is necessary to attract investment

- 2) Wages remain indexed to inflation and not performance of either the company or the individual (at present the wage structure includes a clause such that employee base pay rises each year by two (2) percentage points above inflation.

To control wages, both the number of staff and the base wage has to be controlled. To attract high quality performance from its employees and new talent from outside PKP, the wage structure must allow for excellent wage earnings on a relative scale given the proviso that the company and individual performance are linked. This is the concept of most private-sector compensation plans.

To control wage costs, a 3 point program is proposed:

- Wages should be indexed to profitability not inflation
- Introduce profit-sharing where all staff can receive significant potential gains

- Productivity and quality drivers used to assess individual performance

3) PKP does not consider quality of work evaluation. Service quality is the essential element of modal competition, as the modal alternatives increase along with disposable income for the Polish people. Work quality consideration is entirely missing from PKP's current wage system or planned compensation proposals.

Alternatively, the implementation of a three tiered performance-based pay system is recommended, where:

Bonus Tier 1 - Company performance - twenty (20) percent of the total bonus potential is based on the performance of the company as a whole. We develop an index rather than an absolute number for this evaluation because we recognize that the company may not make profits in the early stages of privatization. Rather, an index of profitability can allow bonus points to be awarded even when the company as a whole is not profitable. Importantly, staff shall be rewarded for their efforts to improve company performance relative to the previous year and should not be held accountable for factors beyond their control because a performance-based pay system should always establish achievable targets on a moving basis as net profitability improves over time. Hence the system provides positive incentives rather than structuring a penalty-based program.

Bonus Tier 2 - Sector/Pillar Performance - the approach is similar to the first tier except the amount of the potential bonus to represent thirty (30) percent of total possible bonus. Hence performance of the team is valued fifty (50) percent higher than overall company performance. This establishes the basis for one sector to compete with another to achieve the best performance across sectors functionally and regionally. The most important element is the ongoing adjustment coefficients used to establish the basis of the award criteria for bonus between and amongst sectors in the Tier 2 category. We recommend the relative levels be set by an independently appointed assessment board and reviewed/adjusted quarterly.

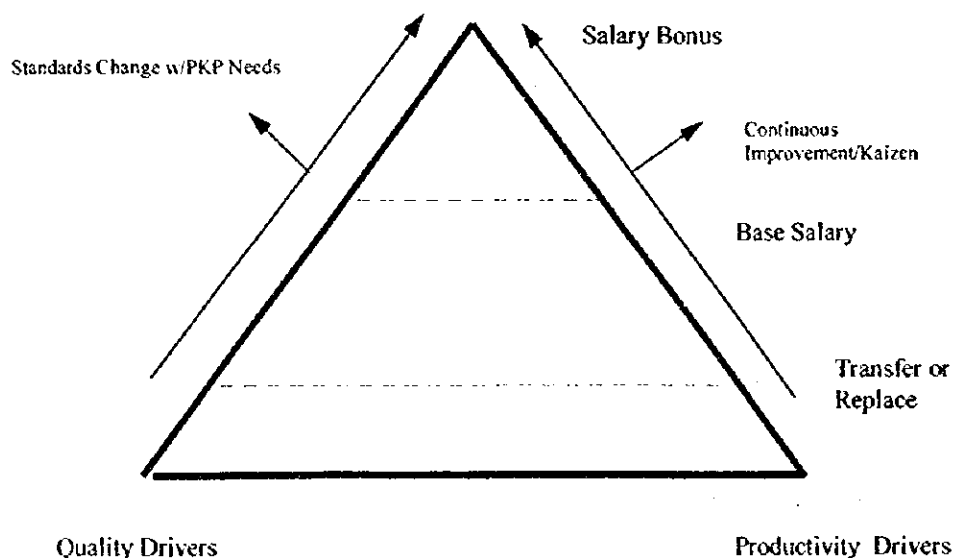
Bonus Tier 3 - Individual Performance - this element of the bonus pay system is perhaps most important. As a result, we set aside fifty (50) percent of the total achievable bonus pay for this category. Two overall drivers are created to base the individual's performance, as reviewed semi-annually by the direct supervisor:

Productivity Driver - for each class of post (functionally determined) a productivity driver is established and an index developed from 1 to 10 to evaluate productivity-based

performance. For example, PKP now uses a loose criteria for its ticket sales agents to determine whether a post shall remain: the agent must sell two times their annual wages in ticket value or the post is not economically justified. In non-revenue producing posts, the driver is a productivity value closely tied to the nature of their work. For example, a track-worker is judged by number of meters of new rail laid or inspected over a period of time depending on specific responsibilities.

Quality Driver - this driver is more difficult to develop but is essential to PKP improving its customer service orientation. For the traffic control dispatcher, the driver might be relative decreases in train conflicts or a measure describing on-time arrival for the train driver. The locomotive maintainer could be judged by the quality of his work using a combination of locomotive reliability and by evaluating the time to produce a given work unit meeting minimum quality standards. Alternatively, the time spent in a car bay might be used to describe a wagon maintainers quality again coupled with equipment reliability measured over time. These drivers are exceedingly difficult to establish because many factors go into reliability and on-time performance. Thus the quality driver must be carefully selected and its application reviewed regularly with continuous adjustments as appropriate. We believe it is possible to transform PKP into the High Performance Management System:

PKP and the High Performance Personnel Management System



The total amount of bonus available is set by the Vertical Sector Manager and distributed at bonus time and through a company profit sharing program.

Multi-craft bonus - In addition, a special bonus allocation is recommended and awarded for individual performance accepting tasks which are outside the individuals job description. We call this cross-functional flexibility and it is the best way to decrease the number of crafts which must be present on any given work team in the field. For example, fixing a broken rail in the field might require laborers, supervision, a welder, a burner and a grinder along with a signal maintainer. If the welder is willing to take the place of the welder and the burner, three functions have been consolidated into one and the direct labor savings can be passed along equally (50/50) between the company and worker as a bonus. Similarly, any equipment and material savings directly accruing from the worker accepting multiple on the job tasks above his/her job description is rewarded by the same split.

Mobility Bonus - the last bonus category concerns the willingness of an individual to take on a new assignment where the railroad most needs to assign him or her. The assignment could be temporary or permanent. The issues and proposed solutions are described in the following exhibits:

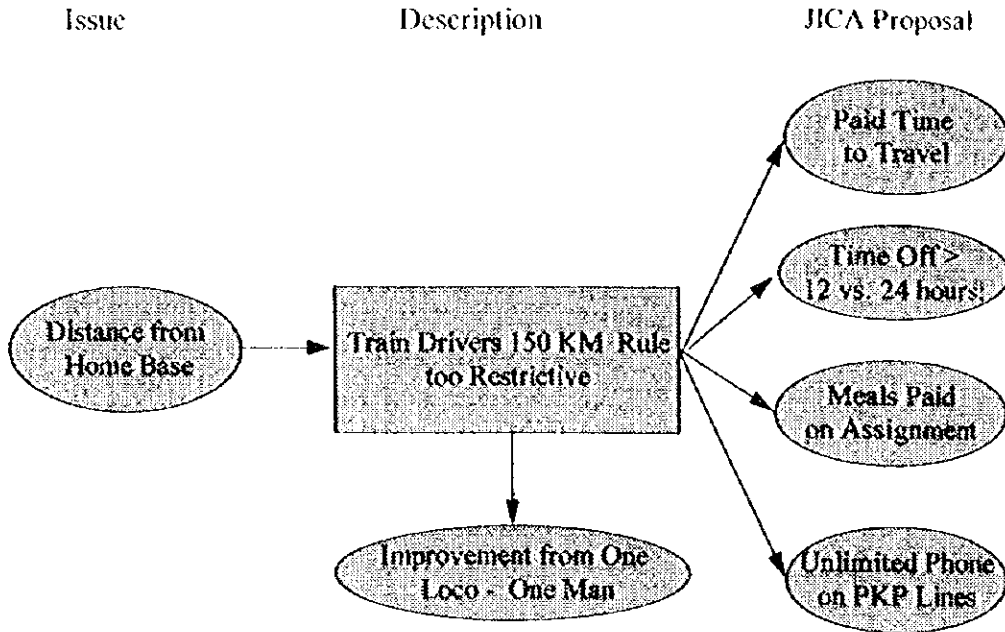
PKP must address the problem of labor force mobility :

Commitment to fill labor needs in regions where they are needed shall be rewarded :

- Functional skills in short supply shall be rewarded with housing , bonuses and/or promotion
- Management must have the right to send workers to regions of labor shortages due to high passenger or freight demand
- Labor agreements (such as the recently agreed 150km train drivers rule) are too restrictive and will result in on-going large overtime payments
- In exchange for work rule flexibility, wages shall be increased in concert with gross revenues with a 50% over base-pay ceiling

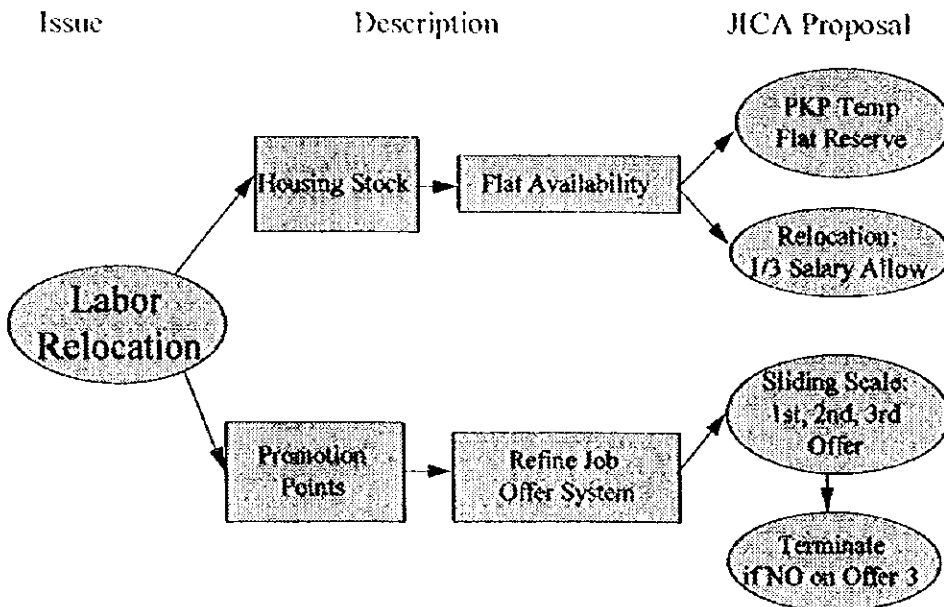
Mobility Issues & Solutions:

Temporary Assignment



Mobility Issues & Solutions:

Three year or longer assignment



In addition, an employee is credited with "career track" points if he/she accepts a position in a region where the railway most needs them on either a temporary or permanent assignment. Career track points are established also for military service, and outstanding regular on-the job performance and are considered as an advantage when an employee applies for a promotion within the railway. Career track points cannot be converted into cash but become a part of the employees permanent record in his/her personnel file.

Further, direct benefits for temporary assignment include the provision of a housing flat for the duration of the assignment, relocation costs associated with moving as well as free and unlimited telephone service over PKP's existing network.

Acceptance of a long-term position in an otherwise undesirable region where PKP needs the labor is good for a permanent flat for the employee and their family as well a PKP purchase of the employees flat at ten percent (10) below market value. If that rate is not acceptable to either PKP or the employee, the amount can be discussed and negotiated between the parties and binding arbitration used to close the deal within six months after the move. PKP is subject to reimburse the employee for costs associated with the vacant flat in the interim (as appropriate). In addition, the employee is subject to a relocation bonus up to one third their annual base salary for accepting the long-term assignment.

(3) Assessment and Modification of Work-Rules

Budget and assignment latitude for section manager currently provides for wide latitude in hiring and discharging or transferring an employee based on the budget and profitability of the section. We support this concept and suggest that PKP codify the degree of discretion allowed the section manager by establishing specific guidelines for the top manager and their subordinates to follow as outlined in Section 2 of this chapter. Otherwise, the system can quickly slide towards nepotism or closed to those who need to stand on their own merits. Corruption can be introduced easily in hiring, firing and bonus award. This principle behind any strong personnel management system always includes the same virtues; e.g. objectivity, equity, firm leadership and real rewards for solid achievement.

Pick System - is widely used throughout North American Class I railways and transit. This is a seniority- based system where the assignment is selected each year based on position and seniority. In general the best assignments are given to the highest ranked "pick". The most undesirable assignment goes to the most junior "pick". The system has strengths and weaknesses and we recommend the options above are laid out above

for PKP. We mention this system because once a pick is assigned to a Union member, that employee must accept the position for at least a year whether it involves moving across the country or night time work or face being discharged from the company. The life of a railroad worker is not easy at the onset of his/her career but becomes more tolerable over time and with seniority building.

4.95 Rule - this rule covers many operating and maintenance posts at PKP. In it, the Union has achieved a distribution of 4.95 employees to cover each twenty four hour (24) period of continuous operations. The additional labor implied by the 4.95 rule, given that it takes three men to staff an 8-hour post continuously or two men to man a 12-hour post over a 24 hour period, is provided for benefits including vacation time, sick time and the required time under the "12 on 12 off rule" or the "24 hour rule" discussed below.

The 4.95 rule offers very generous downtime benefits. By comparison, most railway workers salaries (in North America) are based on 1860 productive work hours in the year, a higher ratio than PKP.

More importantly, the 4.95 rule would not be so constraining if the actual number of posts which requiring staffing were eliminated or consolidated. There are numerous ways to accomplish this objective. For example, consolidating wagon load freight would allow for the closing of many traffic control "posts" system-wide. Another example is the closing or consolidation of ticket sales windows to realize consolidation of posts at underutilized stations or where automation can be introduced (automatic ticket vending machines, on-board fare collection on passenger trains). Introduction of automated rail-highway grade crossings rather than manual operations would allow for the elimination of posts. There are many more opportunities to realize the consolidation of posts which are currently manned 24 hours per day at PKP.

150 Kilometer Rule - this rule was recently enacted to allow train drivers (on of the top recipients of overtime hours in 1995) to travel no more than 150 kilometers from the base location of operation. This labor rule was heavily advocated by the Train Drivers Union but is too constricting for the PKP. It is an improvement from "one-man - one locomotive" operations previously where the driver was, in effect, married to his locomotive (a new loco and driver was used when he got outside his operating range causing huge run-time delays). We address the issue of labor mobility in Sections 2 above and believe that over time this rule is much too confining for the optimal allocation of train drivers to train scheduled and non-scheduled freight train

movements. It costs PKP large unnecessary expenditure in the form of overtime.

Dangerous and Nighttime Work - this category is discussed in the bonus pay section. Suffice it to say that many railroad posts, by definition, are dangerous. If the employee accepts the position and there is commensurate base pay associated with the job, we do not believe workers should be paid extra for these assignments (see Pick system and Bonus Pay Section).

Military Leave Policy - PKP is currently obliged to hold a position open for the entire duration of an individual's military leave. The railway cannot use this post to hire and while the military does pay the difference for the assignment to the worker between military wages and PKP labor, the slot remains open and forces PKP to hire during a time of labor downsizing. Last year, nearly 4,000 workers were hired, a number of whom to fill gap created by PKP's leave of absence policy. This is government mandated policy which will change when PKP is privatized. It will also give PKP much more discretion in hiring and firing decisions.

"12 on 12 off" rule and "24-off rules" - PKP is currently obligated to give employees 12 hours off duty for each 12 hour daytime shift worked and 24 hours off for each 12 hour nighttime shift. To optimize the duration of time on a shift and improve safety, PKP could move to an 8 hour day or night shift on a regular 40 hour basis. Positions, such as heavy track maintenance or construction gangs requiring a large amount of set-up and break-down time, could be exempt from this requirement and be paid a differential for working longer shifts as is done in US railroad Engineering and Maintenance Departments on the Class I railways.

PKP Benefits and Allowances

Medical Care

One of the most controversial aspects of PKP railway privatization is the question of whether the Railway Health Service is spun off to the government or privatized.

Free medical care to all PKP workers and their families is a topic of intense debate at PKP. Because the PKP was, in effect, a self-contained social system for its "family" under the old system, employees have grown accustomed to the set of benefits provided by their employer. This is to quite understandable.

The vision concerning spinning off railway health care is, by definition, disturbing to PKP workers accustomed to a system which treats them as special within the larger system of state-provided health care. The fear concerns whether there will be a deterioration in the level of service if there are changes made to the system.

Railway health care is an expensive luxury that PKP can no longer afford. Yet it must preserve and work to enhance the level of service benefits for those workers retained at PKP and its affiliates. We propose the following system:

Provide workers with health care options:

- 1) State Provided Health Care No cost to employee but possible longer queues for appointments and actual office visits.
- 2) Private Health Maintenance Organization (HMO). PKP pays matching component of cost to employee. Full services under HMO in-house, specialist available by referral. Office visit cost is nominal. Matching share for employee is 25 to 50 percent of total cost. Advantage of this system is nominal cost, high quality, complete services, low wait times. Disadvantage is inability to choose your own doctor.
- 3) Private Medical Plan. PKP offers a plan that allows private medical insurance to all employees. Employee can see any doctor they choose that will accept the insurance. Cost is the highest as is the service level. Reimbursable costs defined by schedule developed by insurer. PKP participation can help reduce the total cost of gaining group plan with insurance company. Disadvantage is that this is the least affordable option and may not be possible for most employees.

Other Benefits and Allowances

PKP staff receive a variety of benefits and allowances governed by their position and union association. In general, the following benefits and allowances are received by the majority of staff:

Benefit or Allowance

- Free unlimited railway travel for employee and their family plus one free railway vacation trip anywhere in Europe through PKP travel department.

Recommended Action

- In most European countries, the same policy of free unlimited railway travel is the rule. In Japan, employees pay for travel outside their immediate work duties. The US system is free courtesy travel as well.

It is recommended that the system be maintained as is because it does not have any direct cost to PKP and fosters the good will of employees but discounts can be slowly withdrawn.

One change to the system is recommended. First, paying passengers have priority over seating. If the train is full to capacity, employees may be asked to stand or wait for the next train. This system is already in place but is not enforced.

Benefit or Allowance

- Coal Allowance is given to all employees. In days past, coal was actually delivered to employees. Now they receive the cash equivalent value which is established each year based on the price of coal and transport. Employees can buy coal or any other items they might need.

Recommended Action

- It is difficult to take a way a benefit that an employee already receives. Rather, we suggest that the state pick up the cost of this benefit and make it a taxable source of earnings revenue. PKP should not be in the business, directly, of heating homes.

Benefit or Allowance

- Uniform Allowance includes the provision for free uniforms provided by PKP

Recommended Action

- It is recommended that PKP and the employee split the cost of uniforms and limit the amount of purchases with a cap on the expenditure and limit the number of new uniform purchases to a reasonable number. Uniform allowance should be made available only to those who must wear them such as passenger train conductors.

5.9.3 Human resource development by phases

The human resources development by phases is shown in the following table :

Table 5.9.1 Human resources development by phases

Phase	
Phase 1 (1997-1998)	- introduce functional job rotation - training in foreign countries
Phase 2 (1999-2000)	- make job descriptions - introduce performance-related pay
Phase 3 (2001-2002)	- reduce / eliminate PKP benefits and allowances
Phase 4 (2003-2005)	- introduce profit-related pay
Phase 5 (2006 -)	-

5.10 MANAGEMENT OF PASSENGER TRANSPORT

5.10.1 Basic Concept

(1) Criteria on Passenger Services

The inter-city transport division may be privatized in the future depending on the efforts for management improvement. Even though it has been privatized, however, it is important to maintain efficient and sound management to secure profit.

As automobiles, airplanes and other transport facilities are being improved, passengers can select transport means freely according to their needs. As the living standard improves, people demand higher levels of services to allow them to spend more comfortable time. Under the circumstances, it is required to set criteria on passenger services aiming at privatization (such as operating trains to connect major cities within three hours with a daily load factor of about 70%).

(2) Passenger Terminals in the Future

1) Improvement of Passenger Terminals

① Measures for Improvement

PKP has about 3,900 passenger stations as of the end of 1996, including about

2,700 manned stations. To encourage utilization of railway services, it is important that station functions sufficiently satisfy passenger needs. However, PKP's stations have been designed only as a place to get on or off trains. Facilities are superannuated and don't function satisfactorily, except at a limited number of stations. Irrespective of whether it is large or small, a railway station is a gateway to the region where it is located and a starting point of travel. Bearing in mind this specific feature of railway station, it is required to improve functions of railway station.

② Actual Measures for Improvement

(a) Railway stations must be reconstructed as a comprehensive terminal. They must be able to simultaneously provide all categories of information on travel and services required by people who use them. It is not enough for railway stations to remain as a place to get on or off trains. By transforming them as a place where people feel relaxed, can start a new life and conveniently satisfy their needs, railways must make a new departure as a transport system industry. To do this, base stations in major cities must be equipped with a function to provide people with widely-ranged services by incorporating hotels, shopping centers, restaurants and cultural amusement facilities.

(b) Railway stations must be improved as a junction (a place connected) to other transport facilities.

Railways, a one-dimensional transport means to connect points with lines, must deliberately be linked with two-dimensional transport facilities, or buses, trams, taxis, rental cars and private cars. In Poland, car ownership is rapidly progressing to make it essential to improve car parking lots. Facilities must be improved with new systems to facilitate inter-mode changes of travel.

To transform railway stations to terminals, they must have functions required by users and make passengers easily extend their travel through other transport facilities with the railway station as an inter-mode junction.

In the case of the central railway station of Warsaw, for example, a communicating passage must be constructed to connect it with the subway now under construction, and provide facilities to lead tram passengers directly to the subway. The exiting bus terminal must be remodelled to have destination-wise spots easily understandable by passengers.

2) Terminal Functions in the Future

① Basic Concept

To modernize railway stations and improve passenger services, railways must introduce mechanized and automated systems, shift from a labor-intensive industry to a modern system industry, and adopt a comprehensive system to quickly implement various categories of office work including revenue control. Railway stations must be felt familiar by people and accepted as a sort of common community asset, through intensified marketing and sales campaigns.

For this purpose, about 300 stations including base stations in major and local cities and intermediate stations in urban areas must be improved and reinforced on a preferential basis. Other stations must be simplified to improve operation efficiency.

② Policy-wise Classification of Railway Stations

We recommend to strengthen functions of PKP's railway stations based on the following classification.

(a) Base stations in major cities (to be reinforced)

- Stations located at the center of large city to play a central role in transport and marketing.
- These stations must be reinforced on a preferential basis as a basis of marketing in relevant areas.
- These stations must introduce automatic ticket vending machines, high-speed terminals to sell reservation tickets, and automatic public address and signposting systems. Automatic ticket vending machines will eliminate queues at ticket windows.
- Base stations will be assigned with a large territory to promote marketing activities in cooperation with other stations in its jurisdiction. As a forefront of marketing, a travel center (tentatively named) will be open at each base station to provide information on travel, implement consultations with passengers and extend other various services.
- Central stations of cities with a population of 300,000 or over will be nominated as base stations. They are Warsaw, Gdansk, Gdynia, Poznan, Szczecin, Krakow, Katowice, Wraclaw, Bialystk, Bydgoszcz, Lods and Lyblin railway stations.

(b) Base stations in local cities (to be reinforced)

- Stations in local cities located at bases of transport.
- These stations must introduce automatic ticket vending machines, terminals for selling reservation tickets and other automatic machines for modernization on a preferential basis.

- Central stations of cities with a population of 30,000 to 300,000 will be selected as base stations. There are about 140 railway stations of this category including those of Radom, Koszlin, Opole, Olsztyn and Rzeszow.

(c) Major stations in urban areas (to be reinforced)

- Medium-size stations in urban transport areas other than those nominated as base stations.
- These stations must introduce automatic vending machines as short-distance tickets sell well.
- There are about 150 stations that fall in this category in Warsaw, Gdynia, Poznan and Katowice zones.

(d) Small stations (to be simplified)

- Stations other than base stations and medium-size stations.
- Operation of small stations must be unmanned or contracted with external contractors. Those where only few users are expected must be closed.

In Japan, a new system to operate small railway stations by reflecting conditions specific to the areas where they are located has started with the initiative of local autonomous bodies. For example, some small stations are now operated by community people. In such cases, municipalities or agricultural cooperatives rent a station building from a JR company, where they open a supermarket or restaurants, while selling tickets in parallel. In station compounds, there are town halls and agricultural cooperative offices where station duties are performed.

5.10.2 Inter-city Transport Company

When the geographical conditions of Poland are taken into account, railways will become self-subsistent while enjoying a dominant position against automobiles and airplanes, if transport services and management efficiency are improved. However, track rental charges must be reduced.

As automobiles increase and information services develop further in Poland, people will demand increasing the value of time. The inter-city passenger transport business must be taken as a service business in the future, which must be addressed through the following two approaches.

- ① Railways must save time and provide passengers with chances to effectively spend time or raise train speeds to connect major cities within three hours.
- ② Railways must provide passengers with comfortable travel time or improve rolling stock and selling services. For this purpose, EX and higher class trains must be

composed of newly manufactured cars. Passengers must be able to purchase tickets in five minutes after arriving at a ticket window.

It makes a basis of passenger transport business to match time-related services to passenger needs in such a manner. This will increase the number of users and the revenue from railway operation.

(1) Improvement of High-speed Train Operation

What is required now for PKP who connects major cities in Poland with its railway network is to improve the train operation system or deploy high-speed train operation between major cities all over the country. Those train must embody rapidity, convenience and comfort.

1) High Speeds

① Concept of Time Saving

A key to sell time-related services is to raise train speeds. Airplanes fly between two airports approximately in 60 minutes. Passengers must spend 60 minutes more before departure in reaching the airport from a city center and in check-in procedures, and another 60 minutes after landing at the arrival airport to reach their destination. In total, it takes three hours for passengers to travel from a city to another by air.

To successfully compete with airplanes, therefore, railways must connect major cities in 400km zones in three hours, those now in three-hour zones in two hours, and those in 200km zones in one and a half or two hours.

Psychological effects must also be taken into account. There is only a difference of 10 minutes between scheduled operation time of two hours and 55 minutes and three hours and five minutes. However, passengers tend to take the former as trains running in a two-hour time zone and the latter in a three-hour time zone. A difference of 10 minutes in this case has an impact as a marketing strategy larger than cutting travel time by 30 minutes. In Japan, such strategies are tactically adopted in marketing to increase demands for transport and revenue of railway companies.

To cut travel time, following hardware and software means must be implemented.

- Hardware

Hardware means include raising curve negotiating speeds and switch passing speeds, reviewing speed control sections and track layout of terminals, and increasing the tractive effort of locomotive. In and around large cities, it is

essential to eliminate slowdown sections.

- Software

Software means include reviewing dwell time at station and the number of stations where trains stop. The dwell time must be three minutes or less at major stations and one minute or less at other stations, to raise scheduled speeds without totally relying on raising the maximum speed.

② Measures to Cut Operation Time between Major Stations

Table 5.10.1 compares operation frequencies, travel time and fares of trains, automobiles, airplanes and high-speed buses in seven sections between major stations or zones.

Based on the data in Table 5.10.1, we discuss actual measures to cut operation time between major stations.

Table 5.10.1 Comparison of data between different transport modes in seven cases (as of May, 1997)
(Frequencies, hours and minutes and PLN)

Case	Section	Transport mode	Frequency	Travel time	Fare
1.	Warsaw-Poznan (306 kilometers)	Railway	8	3-04	(EC)37.4
		Automobile	-	4-20	50.5
		Airplane	(Weekly 25 times) 3.6	(1-05)2-45	176.55
2.	Warsaw-Gdansk (329 kilometers)	Railway	10	3-21	(IC)38.8
		Automobile	-	4-40	54.3
		Airplane	(Weekly 32 times) 4.6	(1-00)2-20	176.55
		High-speed bus	1	5-50	22.5
3.	Warsaw-Krakow (287 kilometers)	Railway	12	2-35	(IC)37.4
		Automobile	-	4-00	47.4
		Airplane	(Weekly 23 times) 3.3	(0-55)2-20	176.55
		High-speed bus	2	8-10	21.0
4.	Warsaw-Katowice (293 kilometers)	Railway	10	2-35	(IC)37.4
		Automobile	-	4-10	48.3
		Airplane	(Weekly 8 times) 1.1	(0-45)2-45	176.55
		High-speed bus	2	6-40	21.0
5.	Warsaw-Lublin (175 kilometers)	Railway	8	2-06	(EX)27.2
		Automobile	-	2-20	29.0
		High-speed bus	7	3-00	15.5
6.	Warsaw-Lodz (133 kilometers)	Railway	8	1-40	(EX)14.4
		Automobile	-	1-50	21.9
		High-speed bus	7	2-30	11.5
7.	Warsaw-Wroclaw (405 kilometers)	Railway	5	4-35	(EX)37.8
		Automobile	-	6-00	66.8
		Airplane	(Weekly 25 times) 3.6	(1-05)2-45	176.55

Source: Time table of PKP 96/97, time table of LOT 96/97, Polski express 97

- (Note)
1. Calculation based on the following conditions. Price of gasoline for automobiles: 1.65PLN per litre Running distance per litre: 10 kilometers in cities and 14 kilometers in suburban areas
 2. Frequencies per day in each direction

3. The figure in () in the column for airplanes indicates flying time alone.

• **Case 1: Warsaw-Poznan**

In this section, railways are superior to other transport modes in terms of operation frequency and fare, and comparable with airplanes in terms of travel time. The maximum train speed is now 130km/h between Warsaw and Berlin. Construction work is now under way to raise the Maximum speed to 160km/h and cut the travel time by more than 30 minutes to two hours and 30 minutes. In the future, the travel time must be cut to less the two hours.

• **Case 2: Warsaw-Gdansk**

Railways are advantageous in this section as a whole. Airplane fares are high. Travel time is very long with high-speed buses and automobiles. If the maximum train speed of 120km/h is raised to 160km/h to cut the travel time by 30 minutes to two hours and 40 minutes, railways will become more competitive.

It is planned to operate trains of the "pendolino" type tilting cars that can negotiate curves at higher speeds in this section to cut travel time with a minimum level of investment in the infrastructure.

• **Case 3: Warsaw-Krakow**

Most of this section consists of the new central trunk line on which trains can run at the maximum speed of 160km/h. If high-performance trains that can run at the maximum speed of 200km/h are introduced, Warsaw and Krakow will be connected in two hours. Then, rail transport will be the most advantageous in every aspect among all available transport modes.

For this purpose, it is necessary to review speed control in slowdown sections in Warsaw, Krakow and other urban zones and raise curve and switch passing speeds, let alone raising the train speed on the central trunk line.

• **Case 4: Warsaw-Katowice**

Just like the Warsaw-Krakow section, most of this section takes the route of the central trunk line where trains can run at the maximum speed of 160km/h. As railways are advantageous in this section, measures must be taken to increase the volume of transport and the revenue therefrom.

• **Case 5: Warsaw-Lublin**

The route length is less than 200km with the travel time almost the same as that by automobiles. The fare and the cost of driving an automobile are almost the same.

When fares of two passengers are compared with the cost of driving an automobile with two persons on board, automobiles are more advantageous than travel by rail. Even if the current maximum speed of 120km/h is raised, the travel time will not be cut much.

Therefore, it is recommended to replace EX trains with express trains, but minimize investments for other purposes.

The travel time may be cut by 10 to 15 minutes, if the dwell time at station, stopping stations and slowdown sections are reduced.

• **Case 6: Warsaw-Lodz**

The route length is less than 200km and the maximum speed is 120km/h. The fare is lower than the cost of driving an automobile. When fares of two passengers are compared with the cost of driving an automobile with two persons on board, however, automobiles are more advantageous than travel by rail. The travel time is almost the same as that of automobile. Advantageous features of railway cannot be demonstrated on this section. It is advised to minimize investments and the travel time by 10 to 15 minutes by reducing dwell time at station, stopping stations and slowdown sections. Revenue must be maintained through the same measures as those for the case 5.

• **Case 7: Warsaw-Wroclaw**

Although fares of railway are lower than those of airplane, the travel time by rail is longer than four hours, as the section is 400km long with a number of curved sections. Three trains are now running via Lodz at the maximum speed of 120km/h and two trains via the central trunk line at the maximum speed of 160km/h in each direction. The distance of the central trunk line route is slightly longer.

The travel time may be cut by 30 minutes in the future, if all trains are run via the central trunk line and the construction work between Opole and Wroclaw for high-speed operation completes. To cut the travel time to be comparable with that of airplane, an enormous amount of investment will be required. Therefore, it is recommended to improve the section to cut the travel time to less than four hours as a second step, after confirming the effects of improvement in cases 1 to 4.

The Central Japan Railway Company in Japan introduced 300-series cars (Nozomi) into the Tokaido Shinkansen line in 1992 to raise the maximum speed to 270km/h and cut the travel time on the 515km section between Tokyo and Shin-Osaka by 20 minutes to two hours and 30 minutes. In the same year, the East Japan Railway Company started through-operation over a standard gauge section and a narrow gauge

section (with rails of the standard gauge attached) between Tokyo and Yamagata to cut the travel time by 40 minutes on an average. Since 1997, trains (Nozomi) composed of 500- series cars have been running at the maximum service speed of 300km/h on the San-yo Shinkansen line.

2) Convenience

① Concept to Improve the Train Operation Network EC, IC and EX trains are running only two to three times a day in each direction on most sections. There are sections where only one such train is running a day. This means that IC and EX trains are only symbolic with essential part of transport being born by other express trains. High-speed trains must be categorized into the following two types, each assigned with specific functions.

- Type 1: EC and IC trains (with a maximum speed of 160 to 200km/h)

These trains must be operated for medium and long distances of 200km or over between cities and between cities and sightseeing spots to compose a high-speed train operation network. EX trains must be replaced with IC trains for this purpose.

- Type 2: Express trains (with a maximum speed of 120 to 160km/h)

These trains must be operated for short distances of less than 200km to connect different regions.

As mentioned above, a high-speed train operation network will be composed mainly of EC and IC trains in the future, with EX trains ranked up to IC trains.

To improve the current inter-city train operation network, net diagrams (pattern diagrams) for train operation must be set, under which trains run at equal headways to cope with flows of business and sightseeing passengers. On major sections, trains must run exactly at intervals of one hour so that passengers can take trains without consulting a time table. This will dramatically improve the convenience of travel by rail.

Introduction of pattern diagrams increases chances of using trains. IC trains currently running with all seats reserved in principle must have some non-reservation seats to improve the convenience of passengers.

② Measures to Improve Train Operation on Major Sections

Table 5.10.2 shows frequencies of train operation on major sections.

Table 5.10.2 Present and future frequencies of train operation
(Frequency in each direction)

Case	Section	EC	IC	EX	Express	Total
1	Warsaw~Poznan	2 (4)	2 (10)	4 (-)	- (-)	8 (14)
2	Warsaw~Gdansk	- (-)	2 (14)	8 (-)	- (-)	10 (14)
3	Warsaw~Krakow	- (-)	3 (11)	6 (-)	3 (3)	12 (14)
4	Warsaw~Katowice	1 (1)	5 (11)	3 (-)	1 (1)	10 (13)
5	Warsaw~Lublin	- (-)	1 (6)	1 (-)	6 (4)	8 (10)
6	Warsaw~Lodz	- (-)	- (6)	- (-)	8 (4)	8 (10)
7	Warsaw~Wroclaw	- (-)	- (4)	3 (-)	2 (2)	5 (6)

Source: JICA study team

The figure in () indicates the frequency after the train operation diagram has been revised.

- **Case 1: Warsaw-Poznan**

Trains will start at Warsaw and Poznan at 30 minutes every hour from 6:30 to 19:30. The frequency of train operation will be increased by six to 14 in each direction. Four EX trains will be replaced with IC trains to increase the frequency of IC train operation to ten by aiming at increasing revenue.

After the construction work for high-speed operation has completed, EC trains between Warsaw and Berlin can run at higher speeds to cut travel time. Trains now running at night must be operated in the daytime. The frequency of train operation will be increased to four to invite more passengers.

- **Case 2: Warsaw-Gdansk**

Trains will start at Warsaw and Gdansk just at every hour from 6:00 to 19:00. Four trains more will be operated to increase the frequency of train operation to 14. Eight EX trains will be replaced with IC trains composed of new cars. The travel time will be cut to invite more passengers.

- **Case 3: Warsaw-Krakow**

Trains will start at Warsaw and Krakow just at every hour from 6:00 to 19:00. The frequency of train operation will be 14. EX trains will be replaced with IC trains composed of new cars. By raising train speeds, the travel time will be cut to increase the capacity of transport.

- **Case 4: Warsaw-Katowice**

Trains will start at Warsaw and Krakow at 10 minutes every hour from 6:00 to 19:00. The frequency of train operation will be 14. EX trains will be replaced with IC trains composed of new cars. By raising train speeds, the travel time will be cut to aim at increasing the volume of transport.

- **Case 5: Warsaw-Lublin**

This section will be covered mostly by IC trains. Some express trains and all EX trains will be replaced with IC trains to increase the frequency of IC train operation. Ten trains will be operated in each direction everyday. Express trains will remain to connect different regions..

A train will leave Warsaw at 6:30, and at intervals of one to two hours thereafter, i.e., at 8:30, 9:30, 10:30, 12:30, 14:30, 16:30, 17:30, 18:30 and 20:30.

A train will leave Lublin at 5:30, and at intervals of one to two hours thereafter, i.e., at 7:30, 8:30, 9:30, 10:30, 12:30, 14:30, 16:30, 17:30, 18:30 and 20:30.

- **Case 6: Warsaw-Lodz**

Some express trains will be ranked up to IC trains to compose a train operation network mainly composed of IC trains (10 trains in each direction). Express trains will remain to connect different regions.

A train will leave Warsaw at 5:15, and at intervals of one to two hours thereafter, i.e., at 7:15, 8:15, 9:15, 11:15, 13:15, 15:15, 17:15, 19:15 and 21:15.

A train will leave Lodz at 6:00, and at intervals of one to two hours thereafter, i.e., at 7:00, 9:00, 11:00, 13:00, 15:00, 17:00, 18:00, 19:00 and 21:00.

- **Case 7: Warsaw-Wroclaw**

EX trains will be replaced with IC trains to increase the frequency of train operation. Passenger cars will be renewed and the travel time will be cut. Six IC trains will be operated everyday in each direction.

A train will leave Warsaw at 6:50, and at intervals of two hours thereafter, i.e., at 8:50, 10:50, 12:50, 14:50 and 16:50.

A train will leave Wroclaw at 5:30, and at intervals of two to three hours thereafter, i.e., at 7:30, 9:30, 11:30, 14:30 and 17:30.

JR companies in Japan newly introduced 478 Shinkansen and inter-city trains, or an increase of 28%, in nine years after they were set up as private companies. During the busiest hours, 11 trains are running every hour on Shinkansen lines. On narrow-gauge lines, one or two trains are running every hour to connect major cities. Such high-frequency train operation has improved convenience of passengers.

3) Comfort

① Concept of Providing Comfortable Cars

High-speed trains in the future must be composed of comfortable cars. For inter-city trains, it is planned to introduce cars that run at the maximum speed of 200km/h or over. On such trains, functional services are required, particularly for business passengers. Therefore, railways must provide passengers with services that take advantage of the rapidity of railway transport.

For sightseeing passengers, on the other hand, a new category of service may be necessary to make passengers enjoy travel itself on relaxed and comfortable cars.

Railways must offer rolling stock to meet these two requirements and stage attractive travels. Cars for business passengers must be the non-compartment type with reclining seats and those for sightseeing passengers must be the compartment type.

②②Improvement of Quality of Accommodations

Improving the quality of accommodations is one of the most important elements to attract passengers to railway transport. The traditional compartment type in Europe is very important to protect privacy. Therefore, passenger cars of the compartment type are widely used in Poland. In other European countries, however, cars of the non-compartment type are rapidly increasing in international and domestic transport.

• EC and IC Train Cars

Although cars of the compartment type must still be used in the future, those of the non-compartment type must also be introduced for business passengers. The first and second class cars of IC and EC trains are mostly the type of six-person compartment. There are virtually no difference of accommodations between the first and the second class cars. Therefore, seats of the first class cars must be innovated. To keep pace with the improving living standard, all cars must be equipped with air conditioners. Dining cars must be remodelled to effect gorgeousness with menu items increased. The passenger room selling service must also be improved. Laboratory facilities must effect cleanliness. Complaints about failure of tap water supply must be eliminated. It is important to improve basic car accommodations including doors, seats and illuminations to compete with other transport facilities. Pay phones must be installed on passenger cars.

The efficiency of transport must be improved to target a load factor of 70% on an average.

• Express Train Cars

We recommend to remodel existing express train cars and appropriate them to IC trains. Second class passenger cars must be the common passenger room type.

One of the toilets now installed on both ends must be eliminated to use the space for additional seats. This will increase the seat capacity, reduce the car weight and cut operation costs. Load factors must be 65 to 75%. Most of express trains are now running at night, each for an operation time of seven to eight hours. They are composed of sleeping cars, simplified sleeping cars and ordinary seating cars. These trains must be composed of high-quality sleeping cars and simplified sleeping cars, comfortable, safe and roomy, to allow passengers lie flat to sleep.

As a result of technological development in recent years, JR companies in Japan are introducing lightweight rolling stock to save energy. Large-size side windows are installed in passenger cars. Seat pitches have become longer to make seats more spacious. Gorgeous privacy-oriented sleeping cars, dining cars and salon cars are now running, on which passengers can enjoy travel.

Due to these increased rapidity, convenience and comfort, the volume of transport has increased by 33% in inter-city transport including that by Shinkansen in eight years after JR companies were set up.

(2) Sales Campaign System

1) Improvement of Marketing

To exploit new demands for transport, PKP must reinforce its marketing system, while simultaneously improving high-speed train operation networks and station facilities to make railway transport easier to use. In other words, railway transport must be commercialized to most effectively provide services. PKP has concentrated its marketing efforts in selling tickets at stations alone. However, passengers don't require taking trains alone, but they also want to use other transport facilities, stay overnight at their destination, and receive other services related to travel.

To sell railway transport in the future as a service, PKP must offer services related to travel in package and have a comprehensive system to encompass various functions from seat reservation to providing travel information to passengers. Tickets must be sold in cities, not at railway stations alone.

PKP's passenger information windows are mostly the open counter type. Similarly, the existing ticket windows of the closed counter type must desirably be remodelled as those of the open counter type. This may be possible, if cashes are placed under strict control. A ticket window is the first point where passengers contact a railway to start a travel. Whether passengers have good impressions of the ticket window may determine whether they use the railway again.

Time tables must be sold at book stores to make railways familiar among people. In

Japan, a number of railway enthusiasts purchase a time table to make it a hidden best seller.

2) Improvement of Sales Promotion System

Long-stay type leisure spots scatter in Poland, including the mountainous Zakopane area in the south and the Baltic sea coastal areas around the Hel peninsular. Medieval streets and structures are preserved in Warsaw, Krakow, Poznan, Lublin and other cities. The house where Chopin was born, the huge castle in Malbork and remains of rock salt excavation sites in Wieliczka are popular among sightseers. Steam locomotives are operated in the suburbs of Poznan and Warsaw.

Although these sightseeing spots are known to some extent among Polish people, they are not known so widely in Japan or other countries, as the sightseeing industry in the country is still premature.

As a representative of the transport industry in Poland, PKP must play a leading role in developing a sightseeing industry and attract more railway passengers. To do this, PKP must publish a sightseeing guide book referring to the convenience of railway transport and publicize sightseeing spots in the country among people in foreign countries. PKP must emphasize the attractiveness of sightseeing spots and transport services by taking advantage of its completed inter-city railway network, cultivate demands for sightseeing, have PKP trains used by more passengers and make good features of Poland widely known in other countries.

For this purpose, it is required to arouse demands for sightseeing by PKP trains. To expedite utilization of inter-city trains, PKP must promote a variety of sightseeing campaigns in each season, focused on the old castle in Krakow in spring, resort areas of the Hel peninsula facing the Baltic sea in summer, streets of Lubin in golden leaves in autumn and skiing in the Zakopane resort area in winter. PKP must promote its campaign through mass media including television broadcasting and newspapers, at railway stations, through passenger room advertisement, by holding events with local autonomous bodies, and by tying up with travel agents to expedite sales of travel.

3) Strengthening Ticket Inspection

One of the simplest and most effective means to increase revenue is to strengthen the ticket inspection system. A large number of passengers seem to be travelling without tickets. The present ticket inspection by conductors is not effective. Conductors cannot efficiently cope with ticket-less passengers who are travelling for short distances. It is an important subject for PKP how to recover such draining fares.

To increase revenue, PKP must extend the ticket selling time and implement blanket

ticket inspections. To rationalize the ticket inspecting method, conductors must record seat numbers and travel sections of ticket holders they have checked, to avoid a repeated inspection of passengers who have once been checked.

(3) Improvement of Management Efficiency

1) Basic Concept

One of the most important subjects for passenger transport divisions is to cut the personnel cost that constitutes a lion's share in expenditure. Therefore, PKP must reduce work loads and the number of employees to a minimum level.

To modernize and rationalize station duties in Japan, automatic ticket vending machines have been used since the age of Japanese National Railways. Passenger can purchase tickets without making queues in front of ticket windows. Large size ticket vending machines are also used to sell tickets for passengers who travel for short distances of less than 100km and surcharge tickets for reserved or non-reserved seats plus ordinary tickets for passengers of limited express trains. User-operated reserved-seat ticket vending machines (ATV) have also been put in use, to allow passengers to set particulars of travel by themselves by simply touching LCD panels and purchase tickets for express trains that will depart within two hours.

IN PKP, about 6,800 employees are now selling tickets at ticket windows all over the country. To modernize and rationalize management and improve passenger services, it is one of the most important subjects for PKP to cut the number of ticket selling employees.

PKP must introduce automatic ticket vending machines first to sell tickets for inter-city trains with non-reserved seats (mostly express trains) to cut the number of ticket selling employees. Introduction of automatic ticket vending machines for reserved seats may be discussed after confirming the effects of those for non-reserved seats.

To improve the efficiency of management, simple jobs such as selling tickets must be performed by machines, and employees must be appropriated to jobs that require dialogue with passengers or judgements based on knowledge and experience. This will cut the number of employees by 30% or over.

2) Case Study on the Warsaw Central Station

We performed a case study on the Warsaw central station, which represents station duties in the inter-city transport.

(Present status)

- Number of employees: 4.95 persons per window (calculated by PKP on the condition that windows are open for 24 hours a day and employees are entitled to

- take a long vacation according to the existing rule).
- Number of daytime shift employees: 26 persons, on duty for 12 hours and off duty for 12 hours (from 6:00 to 18:00)
 - Number of nighttime shift employees: 21 persons, on duty for 12 hours and off duty for 48 hours (from 18:00 to 6:00)
 - Number of ticket selling employees: 115 persons
 - During the time zones 8:00 to 9:30, 12:30 to 15:00 and 21:00 to 23:00, ticket selling employees take a rest in turn at different times. During these time zones, therefore, only 10 to 15 windows out of 26 are open.

(Actions)

Of the 115 inter-city, express and higher class trains that arrive and depart the Warsaw central station in each direction, 46 trains (40%) have non-reserved seats. Therefore, 40% of ticket windows can be replaced with automatic ticket vending machines (for selling tickets for ordinary and express trains). As there are some special tickets such as those discounted, however, we recommend to replace 30% of ticket windows with automatic ticket vending machines.

Of the 20 windows for domestic travel, 14 windows may be assigned with employees to sell tickets discounted and for reserved seats. Six windows may be remodelled as information windows. As windows for international travel are selling tickets for reserved seats and international passengers will increase in the future, they will be left as they are. Twelve automatic ticket vending machines will be installed at the entrance/exit to and from the platform staircase. This will cut the number of ticket selling windows by 30%.

When the daytime and nighttime shifts are composed of 18 and 14 employees respectively, the average number of attendant employees per day is $(18 + 14)/2 = 16$, to make the total number of ticket selling employees $16 \times 4.95 = 80$, or a decrease of 36 persons ($\Delta 31\%$).

This is only a theoretical result, which must be deliberately reviewed by taking into account other conditions.

In rush hours, 20 to 30 passengers are in line in front of ticket windows, each awaiting for about 20 minutes on an average to get a ticket, though actual ticket purchase time is only one minutes. When automatic ticket vending machines are introduced, most passengers who purchase non-reserved tickets will shift to these machines. This will cut the ticket purchase time for passengers who have to purchase their tickets from a ticket selling window.

5.10.3 Urban Transport Company

Passenger transport by railways in urban areas will become increasingly important, as increased automobile poses problems of traffic congestion, shortage of parking lots and environmental pollution due to exhaust gas. As the business is in the red, however, PKP must make efforts to stabilize management by improving the convenience of railway transport to increase demands and contracting the operation of local lines with autonomous bodies. Therefore, PKP is advised to take the following measures.

(1) Improvement of Train Operation Diagram

1) Basic Concept

In urban areas in Poland except the Gdansk metropolis zone, trains are operated in most sections at intervals of 30 minutes in the morning to transport commuters and at intervals of 60 minutes during the daytime. To induce people to use railway transport more, trains must be operated at headways of 10 minutes during morning and evening rush hours and at headways of 20 minutes during the daytime. People will utilize trains more, if high-frequency and equal-headway train operation diagrams are offered to cut waiting time by reflecting the population along the routes and other local conditions.

Trains must be separated into rapid service trains and accommodation service trains, to provide a high-quality and high-speed urban transport service. Rapid service trains will improve the convenience of rail travel and lead to new demands by connecting major cities and sending long-distance commuters to their offices faster.

2) Improvement of Train Operation in Major Urban Areas

In urban areas where PKP is operating trains, it is important to increase the convenience of passengers by connecting railways, trams, buses and subways so that passengers can use these different transport modes in package. The following are actual measures to be taken for different city zones.

①Gdynia City Zone (Route Length: about 80km)

In the Gdansk-Gdynia section, trains are running under an easy-to-understand complete pattern diagram at headways of 10 minutes in the morning and evening and at headways of 15 minutes during the daytime. Rapid service trains are also running during morning and evening rush hours, which are very convenient for passengers. In this zone, it is possible to improve the passenger service only by replacing rolling stock.

② Warsaw City Zone (Route Length: about 450km)

Seven lines stretch radially from Warsaw. An area of 40 to 50km in radius is a commuting zone. In some sections, trains are running at headways of 10 minutes during morning and evening rush hours. In other sections, only a train is operated in about 40 minutes. To improve the convenience of users, the headway must be reduced at least to 15 minutes. For long-distance travellers, rapid service trains must be introduced to compete with automobiles. In most sections, trains are running at headways of 60 minutes during the daytime. These intervals must be shortened to 30 minutes by alternately operating a rapid service train and an accommodation train so that passengers can reach their destination faster.

③ Katowice City Zone (Route Length: about 190km)

Cities with a population of 100,000 to 200,000 scatter around the Katowice city to form a high population density zone. Trains are running at headways of 10 minutes during rush hours in the morning and at headways of one hour during the daytime. The headways must be reduced to 15 minutes during rush hours and to 30 minutes in other time zones. Daytime trains must alternately provide rapid service.

④ Poznan City Zone (Route Length: about 380 km)

Seven lines radially stretch from Poznan. The volume of transport, which is currently the smallest among four city zones, is expected to increase in the future. To prepare for the future, therefore, the train operation diagrams must be brushed up to meet passenger needs.

⑤ Improvement of Rolling Stock Accommodations

EMUs running in urban areas have superannuated, with deteriorated toilet rooms, doors and seats and insufficient lighting equipment. To effect an image change, at least EMUs running in urban zones of Warsaw, Gdansk and Katowice must be replaced. The conventional box type seats must be replaced with those of the long seat type to smoothen passenger movement to get on and off. This will increase the transport capacity per car, allow reducing the number of cars in a train composition and cut energy costs. An average load factor of 70% must be aimed at.

(2) Sales Campaign System

To expedite utilization of railway transport, it is advised to sell coupon tickets and

discount tickets for shopping, round trips and other purposes to meet the needs of communities. It is important to appeal the punctuality, safety and convenience of urban railway transport through TV broadcasting, newspapers and other mass media. In urban areas where trams, buses and subways are playing a vital role in public transport, a system must be established to sell through-tickets over different transport modes. This will expedite convenience of travel, attract more passengers and increase revenue.

In urban transport, JR groups increased the frequency of rapid service operation at higher speeds with new type cars. In nine years after JR companies were established, the frequency of train operation increased by 11% to accelerate convenience of commuters, students and shoppers. As a result, the volume of transport has increased by 25% in the three largest urban areas of Tokyo, Osaka and Nagoya in eight years after JNR's privatization.

(3) Improvement of Business Efficiency

Record of ticket sale at PKP stations indicates that 74% of tickets for accommodation trains are sold for short distances of 100 kilometers or less. Accordingly, we recommend to introduce automatic ticket vending machines for short-distance tickets (for 100km or less) at major stations as a means of modernization of urban transport. This will cut the number of employees by more than 30%.

We tentatively calculated the effects of automatic ticket vending machines in the case of the Sordimiescic station in Warsaw.

Number of employees at the ticket office: 40 persons, 8 persons for the daytime shift and 6 persons for the nighttime shift.

As most passengers purchase tickets for distances of 100 kilometers or shorter at this station, the ticket selling service must be rationalized by introducing automatic ticket vending machines. To do this, 10 ticket vending machines must be installed at the entrance/exit to and from up-train and down-train platforms to sell amount-wise categorized tickets. As the staff for selling tickets in case one or more ticket vending machines have failed and for fare adjustment and passenger information services, five employees during the daytime and four at night must be assigned. This makes the average number of attendant employees $(5 + 4)/2 = 4.5$ persons. The total number of employees required is $4.5 \times 4.95 = 23$. Therefore, the number of employees can be reduced by 17 (a decrease of 42%).

As this is an theoretical figure, actual rationalization must be deliberately discussed with this result as a reference.

5.10.4 Local Transport Company

Local lines can hardly demonstrate advantageous features of railway. PKP must consult with local autonomous bodies, therefore, on whether to abolish transport on these lines or maintain it at higher efficiency. For local lines to be maintained, the efficiency of operation must be improved and measures to increase revenue must be promoted. To stabilize the management of PKP, the operation of local lines must be contracted with autonomous bodies. Therefore, PKP is advised to take the following measures.

(1) Policies to Secure Revenue

Local lines are used by people living in the catchment area to go to their work places or schools or for shopping. As the population decreases and automobiles increase, however, railway users inevitably decrease. To vitalize local lines and secure revenue in the future, therefore, it is required to invite more sightseers from outside the areas where railways are located.

To do this, railways must hold sightseeing events in conjunction with autonomous bodies along the route, operate event trains, invite sightseeing passengers in cooperation with local communities, make efforts to increase revenue and vitalize sightseeing businesses in local areas.

In the business of regional transport centering on core cities, on the other hand, decreases in the volume of transport can be stopped, if train operation systems are improved to some extent, though the volume of transport is not so large as in urban areas. It is important, therefore, to set train operation diagrams deliberately planned to meet passenger needs in each region. To induce demands for transport, sales campaigns must be promoted to sell shopping tickets, daytime discount tickets, special holiday tickets and event tickets that are closely related to communities.

JR companies in Japan are making efforts to secure income by the following measures. On local lines, superannuated passenger cars have been replaced with those of high-speed and high-performance one-man cars. Dwell times at stations have been cut to raise scheduled speeds. To cope with demands of communities, JR companies have set deliberately designed train diagrams for event trains and commuter and student transport services. As a result, there are a number of sections where advantageous characteristics of railway have been reviewed to stop the declining tendency of revenue and transport volume.

(2) Improvement of Business Efficiency

Railway stations in charge of passenger service and train operating divisions are normally separated in the organization of railway companies. In the field of local transport, however, it is important to integrate small divisions of passenger service and train operation as far as possible to efficiently utilize the currently employed workers. Although rail buses have been introduced in some sections, diesel locomotives are still hauling passenger cars on most local lines. Passenger car trains must be replaced with rail buses of short composition. Passenger cars must be the type of long seat to save costs. An average daily load factor of about 70% must be aimed at. Inter-disciplinary division of duties is required in that conductors perform station duties and drivers inspect rolling stock. This will help employees to understand jobs of each other, the reality of local lines that are in financially adverse circumstances, acquire consciousness that they are supporting the section they are working for and inspire morale of field workers.

After Japanese National Railways was split, the newly organized JR companies have made efforts to construct efficient and dynamic business promoting entities closely linked with local communities and restructured a 5,600km-long railway network. They set up railway operation divisions and marketing units in different regions to vitalize regional railway networks, promote personnel affairs management specific to each zone, establish transport plans closed in each area, and execute management and maintenance of rolling stock and railway facilities in their assigned regions. JR companies assign office workers and track maintenance staff to wicket offices in rush hours, manage unmanned stations, and perform one-man train operation. They reviewed business promotion systems, simplified the hierarchy of staff composition and integrated different divisions.

As a result, JR companies can now quickly respond to passenger needs and information in each territory, and provide deliberately contrived services to passengers. They are positively participating in community activities to obtain understanding and cooperation of people along railway routes and become increasingly intimate with customers. Integration of different divisions has brewed a feeling of lateral oneness among employees hitherto belonged to different classes.

5.10.5 Schedule of Passenger Transport Improvement Measures

The Table below summarizes the schedule of the above passenger transport improvement measures.

Table 5.10.3 Schedule of passenger transport improvement measures

Period	Passenger transport sector		
1997 - 1998	<ul style="list-style-type: none"> • Introduction of new passenger cars and improvement of accommodations of rolling stock. • Introduction of automatic vending machines into stations in urban areas. • Extension of ticket selling time and elimination of ticket-less passengers by blanket ticket inspections. • Introduction of non-reservation seats on inter-city superior trains. • Introduction of common tickets valid for railways, trams, buses and subways in urban areas. • Introduction of discounted event tickets, such as daytime shopping tickets, coupon tickets and discounted round trip tickets for urban and local lines. • Promotion of subcontracting duties or unmanned operation of small local stations. • Introduction of rail buses into local lines. 		
1999 - 2000	(In addition to the above, the following measures must be promoted.) <ul style="list-style-type: none"> • Automatic public address and signposting systems into major stations in urban areas. • Remodelling closed ticket counters to open ticket counters. • Improvement of station plazas to facilitate transfer to trams and buses in major cities. 		
	Inter-city transport company	Urban transport company	Local transport company
	(In addition to the above, the following measures must be promoted.)		
2001 - 2002	<ul style="list-style-type: none"> • Increasing the frequency of equal-headway train operation between major cities. • Increasing sightseeing demands by publishing sightseeing brochures on the spots along railway lines, and advertising through TV broadcast and tying-up with travel agents. • Cutting scheduled speeds to less than three hours between major cities in 400km zones through hardware and software means 	<ul style="list-style-type: none"> • Introduction of rapid service trains to cut the travelling time of long-distance commuters. • Increasing the frequency of train operation and operating trains at headways of 10 to 15 minutes in the morning and evening, and at headways of 20 minutes during the daytime. 	<ul style="list-style-type: none"> • Operation of sightseeing event trains in conjunction with autonomous bodies along railway lines to invite more passengers to railways. • Improvement of operation efficiency by training employees on multiple functions for different jobs including duties of conductor.
2003 - 2005			

5.11 MANAGEMENT OF FREIGHT TRANSPORT

5.11.1 Basic Concept

In the future, PKP must undertake self-subsistent management as a privatized company, and compete with domestic and foreign business promoters while a policy of open access is implemented. To play its assigned role under such circumstances, PKP is required to make efforts for management and improvement in regard to the following.

First, provisions must be made before privatization so that the newly born freight transport company will not be subject to heavy financial burdens.

- ① Replacement and modernization of facilities and rolling stock that have deteriorated

or superannuated due to insufficient investment.

- ② Removal or layout change of facilities that have deteriorated or become excessive or inefficient in freight and shunting yards as a result of decreases in the volume of transport. This will recover soundness of facilities, help optimize the allocation of employees and cut maintenance costs.
- ③ Scrapping excess freight cars, which must desirably be performed prior to privatization.

Second, it is important to implement measures to improve the transport system before and after privatization to make a new departure toward a reborn transport organization, since the current marketing and transport systems of PKP still preserve an air of the age when railways monopolized transport businesses as pointed out above.

Third, it is required to drastically rationalize the employment structure to attain a low-cost transport system, in order to strengthen the competitiveness of the railway as a process (system) industry.

Fourth, PKP must establish a system to smoothly perform door-to-door transport so that it can survive a new age of severe competition and make a new departure from the existing marketing system that is limited to on-rail transport alone. To do this, PKP must improve transport and marketing systems as a comprehensive physical distribution promoter, by positively addressing the operation and management of off-rail transport and cargo handling at terminals that make a joint between on- and off-rail transport by itself or through affiliated companies.

Fifth, fares must elastically be set after privatization in consideration of profitability to retain and increase customers under severe competition with other transport facilities.

Finally, it is required to strengthen the function of each division, clarify rights and responsibilities, expedite decision-making, introduce a group system, dynamically rotate employees and simplify the organization of railway companies.

The following are actual measures to be taken by newly born railway companies.

5.11.2 Freight Transport Railway Company

The privatized Freight Transport Railway Company must have functions of transport company in a new age and offer services to correspond to customer requirements. For this purpose, the company must constitute a management system and take measures to improve transport to satisfy customer needs, as explained below.

(1) Organization and Management as a Private Company

One of the largest differences between state-owned and private companies is whether they have cost consciousness. The government-owned PKP who was predominant in the market has brewed cost consciousness among employees only in the past ten years when the volume of transport rolled down. To maintain self-subsistent management in the future as a private company, however, it is essential that PKP promote businesses with the management responsibility clarified through the following measures. First, the management organization of each division must be strengthened, with due rights and responsibilities assigned. Second, the hierarchical organizational must be flattened to expedite decision-making. Third, a group system must be introduced into the organization for dynamic rotation of employees. Fourth, the head office must concentrate itself into policy-making with rights and responsibilities largely assigned to the top management in each region.

(2) Scope of Business

Although its business scope is not restricted at present, PKP is actually performing transport business alone. After it has been privatized, PKP must determine articles of incorporation as the fundamental rule of a privatized company, based on which businesses must be promoted.

Articles of incorporation will stipulate the freight transport business, businesses to develop railway transport and related businesses. In the ever-changing business circumstances, however, currently promising businesses may decline in the future. To cope with such changes, companies must not rest in peace in the existing businesses, but are required to always invest human and material resources in potentially promising business fields. As the stability and development of companies are maintained only by such diversified business promotion, articles of incorporation normally cover a wide range of purposes and related business categories.

For reference, the articles of incorporation of Japan Freight Railway Company are as follows. Articles of incorporation

Article 2: Japan Freight Railway Company carries on following businesses.

- ① Railway freight transport
- ② Petroleum pipelines
- ③ Travel agent business
- ④ Warehouses
- ⑤ Car parking
- ⑥ Advertising
- ⑦ Information processing and information providing services
- ⑧ Non-life insurance agent business and brokerage and agent business for other insurance businesses

- ⑨ Automobile inspection and service business
- ⑩ Retail business of traveller's articles, food and drink, daily necessities and sundries
- ⑪ Hotel and restaurant businesses
- ⑫ Designing, brokerage and management of general civil structures and architectures
- ⑬ Installation work of facilities and equipment*
- ⑭ Dealing, lease, brokerage and management of immovables.*
- ⑮ Manufacture of transport machines and tools*
- ⑯ Manufacture of precision and industrial machines and tools
- ⑰ Management of recreation grounds, gymnasiums and cultural facilities
- ⑱ All other businesses ancillary or related to the above and businesses necessary to attain the purposes of the above.

(3) Concentrated Freight Marketing and Transport System

The widely-spread transport network and distribution of stations at present don't suit a physical distribution system in an age when competitors have mushroomed. Sections and freight handling stations that have lost importance must be abolished or rationalized as far as possible. Unprofitable lines must be shut down. As a first step, it is appropriate to scrap sections with low transport density, about 7,000km in length, which have been judged as unprofitable by IBRD, as the volume of transport within these sections is as small as 600 million tons.

Among the existing 1,800 stations, there are a number of freight handling stations with small loads. Those handling only 30,000 tons per year, or a volume to barely fill a freight car a day, must be abolished. The volume handled by these stations is only 2% of the total transport volume of PKP.

Table 5.11.1 Volume of cargos in the central railway operating division.

Volume of cargos	Number of stations	Departure tonnage	Arrival tonnage	Total
One million tons or over	6	8,669 thousand tons	7,013 thousand tons	15,682 thousand tons
100,000 to 990,000 tons	56	3,488	13,091	16,579
30,000 to 90,000 tons	51	575	2,347	2,922
Less than 30,000 tons	61	163	520	683
Total	174	12,895	22,971	35,866

Source: PKP

Abolition of these sections and freight handling stations can be compensated for by improving base stations for the physical distribution in each region and off-rail transport systems.

(4) Improvement of Transport System

About 80% of the total volume of transport of PKP are commodities for which railways can fulfil its inherent characteristics, and 75% involve yard-to-yard transport to make distribution of freight yards indispensable.

Freight yards require a large number of employees and consume much time in relaying freight cars. While abolishing unprofitable lines and freight handling stations in the future, PKP must abolish freight yards or reduce their size and switch the conventional transport style to a direct transport system as far as possible, in order to ensure rapidity and cut transport costs.

In implementing direct transport, however, it is not necessarily easy to collect fully-loaded freight cars to compose a train for one destination. In such a case, it will be necessary to compose a train with cars for two to three destinations for semi-direct operation. It makes another subject for discussions how to effectively utilize lands produced by abolishing freight yards or reducing their size for the purpose of performing express freight train operation.

(5) Improvement of Terminals and Other Facilities

To develop direct train operation, it is required to improve terminals in a wide range and supporting off-rail transport systems. Arrival terminals must be improved for bulk cargos. Except in the case of point-to-point shuttle operation, bulk cargos normally start from one consignor at a departure terminal and are distributed among different consignees at different arrival terminals. When an arrival base is allocated to each region, however, cargos can directly be transported to arrival bases from the departure terminal. This system, which has been applied to coal, petroleum and cement, must be expanded to cover fertilizers, agricultural products and other commodities that can be collected in quantities in each region. These arrival bases will also have multiple functions for goods distribution and storage to expedite utilization of customers.

Container transport is ideal for general cargos. As containers are used for miscellaneous items and industrial products, they can be transported directly between terminals, if terminals have been improved. This must be promoted by the complex freight transport company. For other commodities that don't suit this system, terminals must be set at the center of regional physical distribution to improve the efficiency of transport.

In the process of transformation to a market economy, problems due to delayed off-rail transport systems are already surfacing. To correspond to the abolition of medium-

and small-scale freight handling stations and unprofitable lines, truckers must be assigned at major stations, as an internal division or as an affiliated company of the new freight transport company, to integrate transport by rail and road.

At other stations, cooperation with existing truck transport companies must be strengthened..

(6) Elastic Application of Fare System

To promote business as a private company in severe competition with other transport facilities, it is important to elastically implement the following measures, in order to stabilize and increase customers.

- Fares contracted on long-term bases
- Fares for regular and repeated mass transport
- Round trip fares
- Fares for door-to-door transport
- Incentive fares to compete with other transport facilities

To shift customers to the direct base-to-base transport by improving base stations for physical distribution referred to above, while abolishing unprofitable lines or integrating small and low-density stations, it is effective to implement discounted "base-to-base fares."

In implementing such a system, PKP should check the profitability by a train-wise cost calculating system.

(7) Promotion of Rationalization Measures

As a market economy develops and competition with other transport facilities intensifies, it is important like two wheels of a wheel-set for business promoters to ensure revenue by maintaining the volume of transport and cut expenditure.

Measures to rationalize freight transport include abolition of lines, freight yards and shunting bases, integration of freight handling stations, and cutting the number of shunting locomotives, among which the most effective measure is to abolish or reduce work loads of freight yards that have a large number of employees.

Some of 12 freight yards and 212 shunting bases currently distributed over the entire railway network must be abolished or their work loads must be cut by keeping pace with abolition and rationalization of local unprofitable lines and the shift to direct transport. The layout of these yards and bases must also be changed or scaled down. The present interlocking system must be replaced with a relay interlocking system to modernize train operation and shunting work in freight yards.

(8) Promotion of Affiliated Businesses

Promoting affiliated businesses and setting-up of off-rail transport companies to strengthen terminal functions will play a vital role in the future to back up the operation of railway business.

Businesses related to freight transport include the following.

- ① Operation of railway in highly-industrialized zone ...Constructing and operating regional railway lines for concentrated companies and perform freight transport and freight car shunting of these companies on contract to smoothen freight transport and improve its efficiency. ...(Regional railway companies, freight car shunting companies, etc.)
- ② Facilities and operation of freight terminals ... Strengthening the terminal function to store and handle cargos, in order to smoothen rail transport, acquire stable customers and expedite their use of railway. ... (Railway warehouse companies, commodity-wise terminals, etc.)
- ③Off-rail transport service ... Transport between stations and consignors to smoothen off-rail transport and related businesses. ... (Forwarding agencies, etc.)
- ④Other businesses ... Car parking business, other businesses operated by the railway company, land leasing to affiliated companies)

Among the above, the most important measures are strengthening terminal functions and businesses related to off-rail transport with respect to marketing, and setting-up of freight shunting companies with respect to rationalization of employment.

These measures involve investment. Except when railway companies have sufficient funds to promote these businesses by themselves, it is normally the case that they are promoted as affiliated businesses with common investment by customers and related industries, in order to increase and stabilize the use of railway transport. It should also be considered to make investment in kind It should also be considered to make investment in kind or offer lands in possession. Such affiliated businesses also effectively absorb excess employees who are discharged as a result of above-mentioned rationalization measures.

In the case of Japan Freight Railway Company, for reference, the revenue from affiliated businesses accounts for 35% of the total. About 30% of the employees of

these companies are those retired or dispatched from the Company.

5.11.3 Complex Freight Transport Company

The complex freight transport company is required to implement a transport system far more advanced than the existing system to allow exploring and inviting new miscellaneous cargos to railway, in addition to those related to the existing transport system.

Miscellaneous cargos best suit the direct transport from origin to destination, by containers, trailers on flat cars or a dual mode system, among which containers are most convenient in terms of transport costs and universality between domestic and international transport.

The volume of miscellaneous cargo transport of PKP is estimated to be 34 million tons, or 15% of the total. At present PKP is transporting only two million tons of these cargos, or only 1%, by containers. Therefore, PKP will be in severe competition with other transport facilities in the future. It is required for PKP to maintain and expand the volume of container transport by taking drastic measures. Although container ships are now seen at Gdynia and Szczecin ports, they are mostly small RORO ships to accommodate only 500 containers. In 1995, a system successfully started to dispatch containers in the evening from Gdynia port and deliver them in the next morning to consignees in 10 major cities in the country. As a result, it is said, the share of marine container transport increased from 10% to about 30% at Gdynia port.

Containers are also flowing into the country from Hamburg port in Germany and Rotterdam port in the Netherlands, and Brest in Belarus and Ostrava in Czech through on-land routes. As a market economy develops, demands for container transport will increase.

As complex transport is also developing in neighboring countries, recording 10.7 billion tons or 22% in France and 12.1 billion tons in Germany or 18%, this is a promising business in the future.

To implement complex transport, the following measures must be taken, in addition to those for the freight railway transport company referred to above.

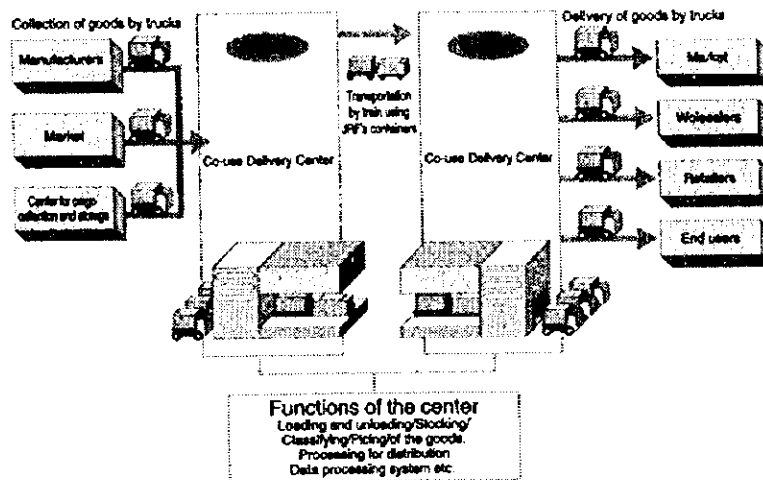
(1) Improvement of Container Terminals

Candidate stations for container handling among major stations in the country and improvement measures may be discussed based on the physical distribution in the future. Anyway, the Warszawa central station is the most promising station for this purpose.

This station, which is located about three kilometers to the west of Warszawa city center, is now handling containers (transport to and from Gdynia by SPEDCONT

company) and bulk freights. Although the loading/unloading sites (except that for containers) are devastated, they are large enough. As the station is located at an ideal place in the international city of Warszawa, it will contribute to qualitative and quantitative improvement of freight transport and physical distribution in the Warszawa zone, if functions for handling, distributing and storing international containers are improved to deserve an international railway physical distribution center, in parallel with implementation of rapid international and domestic transport services.

(Conceptual drawing) Railway physical distribution center with multiple functions



If PKP continues to improve the railway physical distribution centers at Lodz, Katowice, Krakow, Poznan and other districts where cargos are handled in quantities, it will effectively improve the railway transport. To develop container transport for door-to-door direct transport, it is essential to improve on-rail and off-rail transport systems simultaneously. Therefore, off-rail transport must be promoted directly by the complex freight transport company or its affiliated company.

(2) Improvement of Inter-city Rapid Freight Transport Network

For miscellaneous cargos transported by containers, the arrival date and time must be clarified. To maintain a dominant share in the domestic market in particular, cargos between major cities in the country must be collected in the evening and delivered in the next morning. To do this, a rapid transport service comparable with that for passenger transport must be started between cargo handling bases.

(3) Improvement of Rolling Stock for Rapid Transport

To implement above services, PKP must improve freight cars to serve the purpose and

high-speed locomotives for freight trains. Details including the number of cars and locomotives may be determined based on surveys of physical distribution in the future.

(4) Improvement of Marketing and Transport Information Network

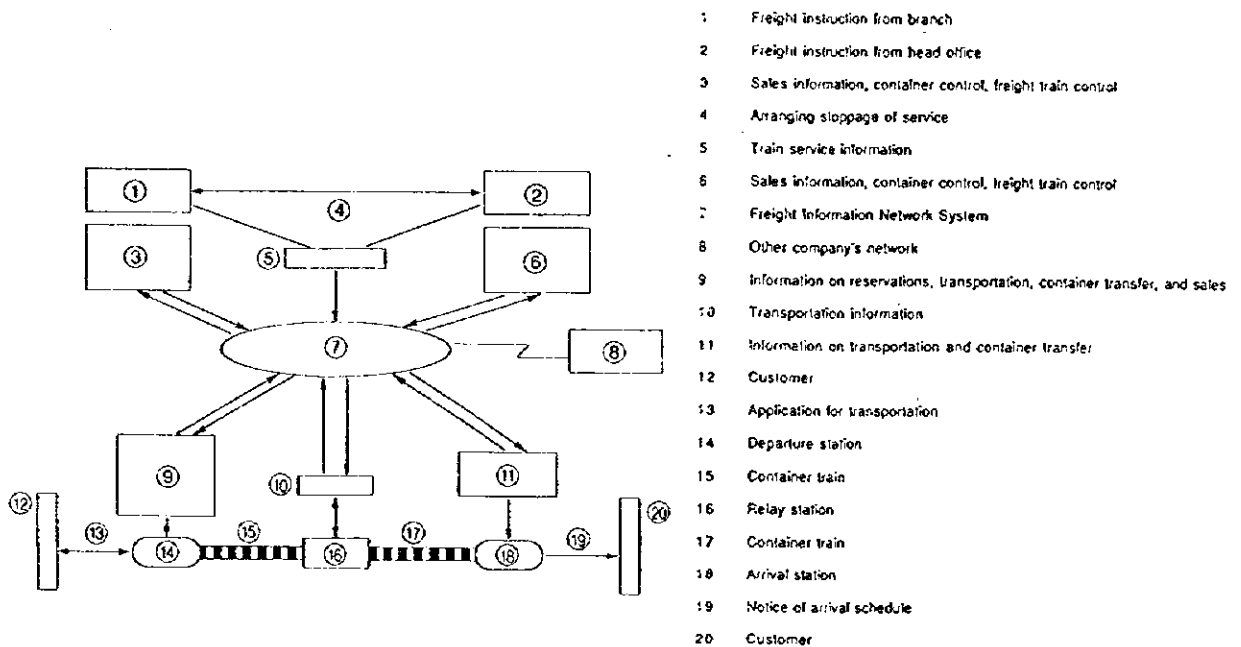
To cultivate demands for transport of high value added commodities including miscellaneous cargos, rapidity, reliable transport and information services are indispensable. PKP, who is now marketing container transport and providing information on transport though telephone, must improve the system to offer information to customers for booking, marketing, transport and prediction of arrival date and time, in order to satisfy the needs of customers.

(Reference)

Outline of the container information system

To offer reliable transport and precise information, the container information system controls container transport over the nationwide railway network. This system must have the functions to:

- (1) Book container cargo transport.
- (2) Prepare containers to transport booked cargos.
- (3) Control the location of containers including those existing at off-rail sites.



5.11.4 Schedule of Freight Transport Improvement Measures

Table 5.11.4 summarizes the schedule of the above freight transport improvement measures.

Table 5.11.4 Schedule of freight transport improvement measures.

Period	Freight transport Divisions	
1997	1. Modernization and replacement of superannuated facilities and rolling stock.	
-	2. Optimization of facilities by reducing the layouts of low-efficiency freight yards and shunting bases.	
-	3. Scrapping excess rolling stock.	
1998	4. Promotion of transport improvement measures ... Polarization of distributed freight handling stations, and improvement of the transport system and freight terminals.	
-	5. Promotion of modernization measures ... Review of working systems at freight yards and shunting bases, and introduction of a relay interlocking system into station compounds.	
-	6. Discussion of railway-related business categories and business contents to be promoted.	
1999	In addition to the above items 1 to 5, promote the following.	
-	11. Improvement of freight terminals and abolition or scale-down of freight yards and shunting bases to keep pace with the abolition of low-density lines.	
-	12. Integration of nationwide power and maintenance divisions to freight transport divisions.	
2000	13. Improvement of complex facilities of the Warsaw freight terminal for promotion of related businesses and incorporation of off-rail transport companies.	
	Freight railway transport company	Complex freight transport company
2001	In addition to the above items 1, 2, 4 and 5, promote the following.	In addition to the above items 1, 4, and 13, and items 21, 22 and 23 in the left column, promote the following.
-	21. As a privatized company:	31. Setting up railway physical distribution centers at freight handling stations in major cities.
-	• Scope of business ... Articles of incorporation → Determination of business	32. Establishing rapid service freight transport networks to connect physical distribution centers for international and domestic railway transport.
2002	• Management organization ... Roles and authorities of the head office, branch offices and field units.	33. Introduction of high-speed locomotives, container cars and containers to cope with expanded complex transport.
2003	• Management philosophy and policies ... Playing the role of a comprehensive distribution promoter to satisfy customer needs by keeping abreast of the movement of physical distribution.	34. Improvement of selling and transport information network.
-	• Assets possessed ... Determining assets and improving the efficiency of control and operation.	
2005	22. Adoption of management policies	
-	• Elastic application of fare systems	
-	• Establishing a method of assessing revenue and expenditure by introducing a train-wise cost calculating system.	
-	23. Positive promotion of related businesses	
-	Strengthening functions of major freight terminals(improvement of complex facilities)	
-	Improvement of the off-rail business system at major freight terminals (incorporation of companies)	

6. COMPREHENSIVE PROPOSAL

Railways have been playing an important role in Poland, to transport passengers and affluent underground resources by utilizing the network spread to every corner of the country. As motorization has progressed in a stagnated economy in recent years, however, railway businesses are now suffering from decreases in the volume of transport in adverse circumstances. To develop as an attractive railway with self-subsistence in the future, PKP must undergo drastic management innovation.

The issue of restructuring PKP has been addressed by PKP itself and a survey was also conducted with the funds of World Bank. Nevertheless, there are a number of structural problems in the nationalized organization. To recover normalcy of PKP's finance, it is inevitable to discuss the possibility of privatization.

Based on the experience in privatizing Japanese National Railways, we aim at supporting the privatization of PKP in this study and analyzed the issue of privatization in Chapters 3, 4 and 5 in this report.

We offer below a comprehensive proposal for the privatization of PKP.

6.1 PROPOSAL FOR THE PLAN OF PRIVATIZATION

Subjects to be discussed, implementation plans and proposals for the privatization of PKP are summarized as follows.

(1) Management Form

We recommend to divide PKP into the following privatized companies.

- ① PKP must be divided into two entities, i.e., an infrastructure sector company and a transport sector company, with excess assets held by the former.
- ② The transport sector will be divided into the passenger transport, freight transport and related business divisions, all of which will be controlled by a holding company, transferred from PKP.
- ③ Passenger and freight sectors will further be divided step by step into different companies for inter-city transport, urban passenger transport, local line passenger transport, freight transport and complex freight transport.

- ④As the management form, a special nationalized company will control these companies in the transit phase, which will eventually become a stock company.
- ⑤Finally, PKP will become a holding company (stock company) consisting of an infrastructure company and eight other companies (three passenger companies, two freight companies, a related business company, an information telecommunication company and a data processing company).

(2) Plans toward Privatization

- ①We recommend to take the following measures toward privatization.

1) Preservation of Railway Transport

For public transport services including bus services, the Law on Local Autonomous Bodies was enacted in 1990 to clarify the responsibility of local autonomous bodies. To preserve local lines, the government, local autonomous bodies and railway enterprises are required to negotiate the operation of these lines based on contracts between railway enterprises and local autonomous bodies. To offer transport services that meet the needs of communities, it is also necessary to discuss a system to entrust the responsibility of inter-city transport service to local autonomous bodies or local Self-governing organizations.

2) Environmental Preservation

Railways are an environment-friendly transport system. Railways must be utilized more, therefore, to prevent environmental deterioration due to increasing automobiles. Railways must educate employees on the importance of environmental preservation, increase specialists in environment divisions and expand the existing environment monitoring system. Energy-saving must further be promoted. Hazardous materials must not be used in investment projects. Contractors must be trained on environmental preservation. Measures for the aged or handicapped must be improved. Railways must continue sustainable development, while taking into consideration environmental preservation measures in neighboring countries.

3) Fares

To improve the financial situation and prepare for privatization, PKP must increase revenue by raising fares. As the inter-city passenger transport is elastic in regard to operation time and services, fares may be raised by offering better services including higher scheduled speeds. As urban transport is less elastic against values, whether fares may be raised must be discussed as a policy on transport. In freight transport, charges for coal, which are suppressed at low levels, must be raised. Systems of discount fares and complimentary tickets must be abolished or scaled down.

4) Separation of Assets

The infrastructure sector must be separated as a new nationalized company. Field units of maintenance divisions must be privatized, self-subsistent ones first, to compose a system to lease them to employees or strategic investors. Excess rolling stock must be scrapped. Lands and buildings must be disposed of on a long-term basis by qualified experts of management and development.

5) Treatment of Low-density Lines

In this study, we set a criterion on the abolition of lines in terms of passenger transport density and freight transport density, and determined that it is desirable to abolish 153 lines with a total length of 5,000km. To do this, understanding and cooperation of communities are essential. It is recommended, therefore, to set up an organization to consult and agree with local autonomous bodies, determine procedures for abolition and discuss complementary transport means based on the proposal in this study.

6) Treatment of Excess Employees

The number of employees required for the infrastructure, transport and related business divisions in 2005 is estimated to be 160,000. This means that 71,000 employees out of the present 231,000 employees will become excessive. For these excess employees, an early retirement system must be offered, while transferring some to related business companies simultaneously. Conditions for early retirement must desirably be offered step by step with different programs. To staff each division with an appropriate number of employees, those in marketing in passenger divisions must be transferred to freight marketing divisions or to complex transport divisions.

7) Related Businesses

Related businesses, which will further develop in the future, must be promoted by an independent organization with the business of immovable property as a core. With the cooperation of external experts, businesses that seem viable must be separated first. Start business first in the vicinity of railway stations and then evolve it to city centers. Advertising and other businesses in station compounds are preferential, as they are highly profitable, but don't require initial costs much. Invest capitals not only in new businesses but also in companies related to PKP. Success depends on human resources. Send employees to specialist companies to make them acquire expert knowledge.

8) Investment

Given the present status of superannuated rolling stock and ground facilities of PKP, funds must be invested more than ever before PKP is privatized. Locomotives and EMUs must be renewed and automatic ticket vending machines must be introduced for passenger transport. Locomotives must be renewed and container cars must be increased for freight transport. Funds must be invested in the infrastructure to improve tracks, introduce a CTC system and modernize signal and telecommunication facilities on a preferential basis. We propose to the government to additionally invest two billion PLN (400 million PLN per year) into infrastructure divisions before PKP is privatized.

9) Subsidies by the Government

Subsidies by the government must be determined in consideration of the finance of the government, necessity to assist PKP and compatibility with EU directives. The balance between revenue and expenditure of PKP and its estimates in the future suggest that subsidies by the government are still required for passenger transport and investment in the infrastructure in the future. It is desirable that the investment in the infrastructure be assisted with a sum of two billion PKP in five years. The effects of subsidies must be analyzed on a regular basis

10) Upbringing Human Resources

PKP must prepare training programs for newly introduced technologies.

Employees must be rotated between different work places. PKP must attach importance to the development of expert knowledge. Overseas training programs must also be considered. For the personnel affairs management system, job rules and a capability-base salary system must be adopted. Extra pays must reflect the business achievement of the organization and be linked with merits of individual employees. PKP must discuss introduction of extra pay systems for multi-function and transfer to different work places.

11) Management of Passenger Transport

It is required to improve inter-city train operation to effect rapidity, convenience and comfort and strengthen selling and marketing systems, in order to promote positive business management. For urban transport, a high-frequency, equal-headway and fixed-composition train operation system must be established in conjunction with other transport facilities in urban areas. It is important to improve the efficiency of local lines by efficiently rotating employees and introducing rail buses.

12) Management of Freight Transport

For ordinary freight transport, PKP must abolish or reduce the scale of low-density stations and freight yards to switch cargos to direct transport, improve terminals and strengthen the link with road transport agencies, review the distribution of yards and shunting bases to cut the number of employees, and apply fare systems elastically. For complex freight transport, PKP must improve container bases at Warsaw and other major stations, organize affiliated companies to smoothen off-rail transport, clarify arrival date and time and increase container cars.

② Institute reforms for privatization in phases, as shown below:

Proposal for privatization plan

	First stage (1997 to 1998)	Second stage (1999 to 2000)	Third stage (2001 to 2002)	Fourth stage (2003 to 2005)	Fifth stage (after 2006)
Promote privatization Divide the organization and assets	<ul style="list-style-type: none"> Divide the PKP organization into an infrastructure sector, passenger transport sector, freight transport sector, power and maintenance sector, and other business sector. Change the name of real estate business to related business. Excess assets held by PKP will be transferred to the infrastructure sector. Organize an employee investment fund (SIF) and grant stock options to employees. Organize a Committee for Privatization of PKP within the Ministry of Transport. Reinforce the organization of the Railway Bureau, Ministry of Transport. Organize a Privatization Promotion Project Team within PKP. 	<ul style="list-style-type: none"> Separate the infrastructure sector from PKP and integrate the power and maintenance sector into the passenger transport and freight transport sector. Organize the Public Service Contract Fund (PSC). Transfer a portion of the rail access charge to the fund and allocate it to the passenger transport sector as assistance. The accounts of maintenance work in infrastructure, passenger transport and freight transport sectors will be managed by each sector in preparation for a shift to a self-supporting accounting system and an independent company. The principle sectors of related business will be concentrated into related business, telecommunication and data processing sectors by integration, transfer and abolition. 	<ul style="list-style-type: none"> Reorganize PKP as a special nationalized company in which the government holds all stocks, and divide the passenger transport and the freight transport sectors into three passenger transport sectors and two freight transport sectors. Allocate 15% of the stocks of PKP after it has been reorganized as a joint-stock company to the SIF. Divide the maintenance work in the infrastructure, passenger transport, and freight transport sectors into independent businesses, starting with a business that is able to adopt a self-supporting accounting system. 	<ul style="list-style-type: none"> Change the special nationalized company that was formerly PKP to a holding company, and set up three companies in the passenger transport sectors, two in the freight sectors, and three in related business as independent companies. The holding company sells stock of each of the eight independent companies to strategic investors and releases stocks by listing on the Stock Exchange. 	<ul style="list-style-type: none"> Change the infrastructure company to a special nationalized company, then promote privatization by listing stocks on the stock market. When the infrastructure company is sold, the charge for selling it will be transferred to the PSC fund. The PSC will utilize the working capital as a financial resource. Release stocks of the holding company itself to the stock market. SIF allocates stocks to employees (including retired employees) in exchange for stock options.
Scrap low-density lines	<ul style="list-style-type: none"> Select lines to be scrapped in the first stage, and set up a supporting legal framework. Create preferential tax and subsidy systems for the lines to be scrapped. Reach agreement with local governments on supplementary modes of transport. In the first stage, the aim is to scrap a total length of approximately 1,600 km of line. 	<ul style="list-style-type: none"> Select lines to be scrapped in the second stage and reach agreement with local governments on lines to be scrapped. Examine the income and expenses of supplementary modes of transport for lines scrapped in the first and second stages and review the subsidy system. In the second stage, the aim is to scrap a total length of approximately 3,400 km of line. 	<ul style="list-style-type: none"> Examine the income and expenses of supplementary modes of transport for lines scrapped in the first and second stages and review the subsidy system. In the second stage, the aim is to scrap a total length of approximately 3,400 km of line. 	<ul style="list-style-type: none"> Examine the income and expenses of supplementary modes of transport and review the subsidy system. 	
Treatment of Excess Employees	<ul style="list-style-type: none"> Introduce an early retirement system for three years from 1999. Expand the business of related business, telecommunication business and data processing business, and accept excess employees. Transfer personnel to adjust for the imbalance in the volume of business between regions and industries. 		<ul style="list-style-type: none"> Develop measures for excess employees to be instituted continuously through the first and the second stages, aiming at total employment of 160,000 by the end of 2005. 		
Develop related business	<ul style="list-style-type: none"> Prepare a plan for inviting and training talented personnel, and rotating personnel. Promote marketing in stations and advertisement business. 	<ul style="list-style-type: none"> Develop business using subsidiaries and create a system to dispatch all employees on loan to subsidiaries for about three years in principle. Foster core companies for each industry and promote direct privatization, such as lease and sales companies, to employees and strategic investors. 		<ul style="list-style-type: none"> Enlarge and reorganize operations through M&A activities with specialist external companies and by setting up joint ventures. Develop hotel management and shopping center businesses by taking advantage of stations in prime locations. 	
Facility investment	<ul style="list-style-type: none"> Invest in modernizing infrastructure and greater speed. Invest in automation and save labor to reduce the number of personnel required. Improve accommodation of rolling stock for passenger transport, upgrade freight cars. Purchase rail buses. 	<ul style="list-style-type: none"> Investment in modernizing rolling stock plant. Scrap depreciated rolling stocks and purchase new rolling stocks and rail buses. 	<ul style="list-style-type: none"> Purchase rapid transit passenger trains, rapid locomotives for compound transport, container cars and containers. 	<ul style="list-style-type: none"> Invest in remodeling main stations for passengers and freight terminals. Continue investment such as upgrading rolling stock. 	<ul style="list-style-type: none"> Plan and promote facility investment based on the original measures of the infrastructure company, three passenger transport companies and two freight transport companies.
Government subsidies	<ul style="list-style-type: none"> Continue with subsidies that the government currently assigns to PKP (passenger transport subsidy: 571.5 million PLN; investment subsidy: 400 million PLM) Accept additional investment from the government for the infrastructure sector for five years from 1998 (400 million PLM per annum, for a total of 2,000 million PLM). 				
Developing human resources	<ul style="list-style-type: none"> Further expand PKP's system of personnel training. Introduce new equipment, prepare new training programs that can respond to the new technology, and enable employees to acquire experience in operations in principle sectors through rotation, and training to acquire expert knowledge in marketing and other areas. Introduce an overseas training system for executives. Prepare business regulation for each occupational category to enable an objective evaluation of operating results. Review the bonus system for each occupation and examine the introduction of a merit-based salary system. 		<ul style="list-style-type: none"> Introduce a bonus system and salary system determined based on the results of companies, occupational category, departments, and individuals as an independent company. Introduce an allowance for mobile businesses and transfers to remote locations. 		
Management of passenger transport	<ul style="list-style-type: none"> Introduce automatic ticket vending machines at city stations. Increase the hours of operation of the ticket office. For small stations in provinces, promote subcontracting for stations and increase the number of unmanned stations. Sell discount tickets, such as tickets for shopping, ticket books and round-trip tickets. Introduce a system for automatic broadcasting and guides at principal stations. Upgrade the ticket office from a closed counter to an open counter. Secure income by rethinking the discount fare system from 1998. 		<ul style="list-style-type: none"> Inter-city transport companies increase the number of trains and create schedules with regular intervals and take both infrastructure- and service-related measures to shorten time. Expand tourist demand. Urban transport companies increase the number of trains and create schedules with regular interval. Have both rapid trains and local trains to shorten the time spent on long-distance commuting. Provincial transport companies improve business efficiency by giving employees multiple abilities and allowing them to play multiple roles concurrently. Remake main stations as comprehensive terminals that incorporate hotels, shopping centers and other facilities. 		
Management of Freight Transport	<ul style="list-style-type: none"> Eliminate inefficient freight yard and shunting bases and promote appropriate use of PKP equipment. Allocate freight stations selectively and set up a freight terminal Promote rationalization by reconsidering the operating system at freight yards and shunting bases. Set up multipurpose equipment at freight terminals in Warsaw and establish a company for off-rail transport. Ensure income based on abolishing the policy of fare regulation from 1998. 		<ul style="list-style-type: none"> The freight railroad transport company introduces a fare system, such as a fare for long-term contracts, and operate the fare system with flexibility. Prepare a freight terminal and off-rail transport system. The compound freight transport company prepares a basis deal with containers, rapid freight transport network and an information network for sales and transport. Service the Warsaw central freight station as a railroad physical distribution center and use it as the primary base for handling containers. 		

6.2 ORGANIZATION TO PROMOTE PRIVATIZATION

To implement the privatization plan referred to in the previous section, it is essential to obtain cooperation and understanding of labor and management, assistance by the government and cooperation of those concerned. It is also important to ensure transparency of privatization processes and establish a consensus among people for privatization. To positively and steadily promote the privatization of PKP, we propose to set up or strengthen the following organizations in the government and PKP.

(1) Committee on the Privatization of PKP

In the Ministry of Transport, organize a Committee on the Privatization of PKP (Privatization Committee) composed of members from related Ministries and other governmental organizations, representatives of companies who have experienced privatization, specialists on privatization who have expert knowledge and executive members of PKP, to discuss basic policies on privatization and prepare basic plans.

Under the Privatization Committee, organize three Sub-committees on assets, excess employees and local lines.

The Sub-committee on assets will identify assets possessed by PKP, separate excess assets and those for railway businesses, discuss methods of selling excess assets, plan distributing assets between newly born railway companies.

The Sub-committee on excess employees will plan and coordinate smooth re-employment of excess employees.

The Sub-committee on local lines will plan abolishing low-density lines, transferring transport business to bus or other transport facilities, and shifting management to local autonomous bodies.

(2) Reinforcing the Railway Bureau, Ministry of Transport

The Railway Bureau, Ministry of Transport, who is the actual secretariat organization for privatization of PKP, have 13 members including a director. As new jobs have already arisen after the Railway Transport Law was enacted, the Bureau must be reinforced to deal with jobs related to the privatization of PKP in the future.

(3) Privatization Promotion Project Team

Organize a privatization promotion project team directly under President, with managers and staff of Strategy Restructuring Bureau and other divisions, to support the

Privatization Committee and prepare detailed implementation plans for privatization.

6.3 RESPONSIBILITY OF THE GOVERNMENT

To develop the economy of the country, it is essential to improve the basis of transport. As railways are an environment-friendly transport means with high energy efficiency, free from exhaust gas or other contaminants, it is an important policy of the government how to vitalize railways. The privatization plan summarized in this study requires efforts of PKP and assistance by the government. In this regard, we propose the following to the government.

(1) Financial Assistance

One of the purposes of the privatization of PKP is to cut subsidies by the government. As seen in other countries, however, there are few privatized railways that are operating without requiring financial assistance by respective governments. Railway management should be vitalized based on appropriate financial means including subsidies for passenger transport and additional investment into the infrastructure.

(2) Excess Employees

It is an important subject for the government how to deal with excess employees in the process of PKP's reform. As this a socially important issue involving problems that cannot be solved by PKP alone, the government must extend support to measures taken by PKP including the early retirement system and re-employment in other industries.

(3) Low-density Lines

To abolish low-density lines, it is important to obtain understanding and cooperation of community people who tend to oppose abolition of railway lines. In this study, we have proposed to abolish lines to a total length of 5,000km by the end of 2005. To implement this proposal, the government must intervene in coordination between PKP and local autonomous bodies, and consult with local autonomous bodies on the funds required to abolish lines or operate preserved lines.

(4) Regulations to Protect Public Interests

An age when railways monopolize transport businesses has gone with their responsibility to protect public interests diminished. Therefore, regulations on fares for public interests must be minimized. When the government imposes economic burdens on railways as a public service, the costs involved must be compensated for by the government.

6.4 RESPONSIBILITY OF PKP

To overcome severe competition in transport markets and vitalize railway management, drastic measures must be taken including changing the management form.

PKP must acquire the constitution of private companies to demonstrate vitality and efficiency, and is expected to address the privatization plan proposed in this study with all members from the top to the rank and file. We also propose to take the following measures toward privatization.

(1) Cooperation with Privatization Committee

PKP's positive cooperation is expected with the Privatization Committee that will be set up in the government, by submitting data required for discussions in the Committee, for example.

(2) Cooperation between Labor and Management

To attain successful privatization, it is essential to obtain cooperation of labor unions. Labor and management must exchange opinions, establish a fiduciary relation and cooperate with each other for the development of their organization, or a target they share in common.

(3) Reform of Consciousness

In nationalized railway organizations, both labor and management tend to lose consciousness of the financial status of the organization, morale to improve productivity and consciousness of operation costs. Before it is privatized, therefore, PKP must make employees have the consciousness seen with workers of private companies, and a morale to increase revenue, cut expenditure and develop themselves. Spirit of devotion must also be introduced. To do this, PKP must improve training systems, have lectures on management by external instructors, make employees

experience working for private companies, encourage tool box improvement activities, participation in workplace opinion forums and contribution to workshops on field study results, and introduce a capability-based personnel management system.

(4) Improvement of Corporate Constitution

As a merit of privatization, the newly born railway organization will be able to attain self-subsistent operation through free and positive business promotion under clarified responsibility for management. The private railway company must drastically bias itself to a profitable management and business fields where the advantageous features inherent to railway transport are unsparingly demonstrated. This requires new conception, such as introduction of talented human resources from outside, selection and preferential treatment of capable and development-oriented employees, decentralization of authorities for personnel affairs and financial management and establishment of an organization with duties and responsibilities clarified.

(5) Modernization of Railways

A purpose of privatization is to improve productivity by using modern facilities and equipment and performing efficient management. To do this, the new railway organization must take measures for modernization, such as appropriate investment, mechanization, systematization and utilization of external capabilities, promote marketing to offer attractive products and services, implement minutely designed policies to reflect local conditions, develop diversified businesses and pursue modernized management incorporating information systems.

6.5 CORRESPONDENCE TO EU POLICIES

(1) EU Policies on Railways

As the Polish government intends to become an EU member, the management of railways must take into account EU's universal policies on railways, whose basic principles are ① autonomous management, ② sound finance, ③ competitiveness of railways, ④ separation of infrastructure sector and transport sector, ⑤ opening railway networks to third parties, and ⑥ contracted local line services. In addition, EU wants to improve high-speed railway networks in Europe, plans to open a cross-European railway freight freeway, intends to raise the standard on railway

infrastructure, and requires to open the infrastructure to third party countries.

(2) Responsibility of the Government

In 1997 July, the Polish government enacted the Railway Transport Law to separate infrastructure sector and transport sector. The Law also clarifies the investment by the government into lines that are important for the nation. The government's policy that is now providing subsidies to PKP with compulsory public services assigned must be changed to one that reforms PKP as a competitive self-subsistent organization. The government is also required to take the initiative in promoting measures for local lines in different regions, raising the standard on railways and investing funds in modernization projects.

(3) Responsibility of PKP

As a result of integration of the markets in EU, railways in Europe are becoming internationalized, border-less and liberalized. In Poland, an age when PKP monopolized and operated railway networks is now a thing in the past. A free access system will be introduced in the railways in Poland, in which railway promoters in other countries will make their debut. In an age of competition, PKP must reform its corporate constitution and transform itself into a privatized and vitalized organization to demonstrate corporate features specific to private companies. Improvement of railway networks in Europe, on the other hand, will accelerate international transport and trigger transport demands for PKP. Therefore, PKP must improve the infrastructure and rolling stock for international transport, strengthen cooperation with neighboring countries for through-operation and raise the passenger service level.

6.6 CONTINUATION OF SURVEY AND IMPLEMENTATION OF TECHNICAL COOPERATION

In this study, we surveyed methods of privatizing PKP and major issues related thereto, based on the experience in privatizing Japanese National Railways. To pursue actual measures for privatization in detail, it will be effective to further survey the following, and introduce technical cooperation from other countries.

(1) Continued Survey Items

1) Comprehensive survey to develop railway-related businesses

Surveying business chances including determination of their order of implementation, and methods of planning businesses, marketing, management and control, personnel affairs management, development, and raising funds for different business categories including operation of station buildings.

2) Survey of detailed implementation items for privatization of PKP

Surveying procedures to establish new companies, enactment and revision of related laws, and the status of assets including methods of disposal, planning assignment of employees, and calculating the amount of capital and the stock price to prepare for privatization.

(2) Technical Cooperation

PKP is recommended to request dispatching experts for technology transfer from Japan or other countries who have experienced privatizing nationalized railway organizations.

1) Inviting experts

Receive experts in related businesses, personnel affairs management, raising funds, stocks and management and control.

2) Sending employees for training

Send employees in charge of related businesses and so on to other countries to acquire expert knowledge and technologies.

3) Development surveys

Request development surveys by experienced countries in related businesses and other special fields.

4) Introducing technologies from privatized railway companies

Obtain information on management know-how after privatization form Japan Railway

Companies (JR group) or other privatized railway organizations on a commercial basis.

JICA