

CHAPTER 6 FINANCIAL ANALYSIS

6.1 FINANCIAL REPORTING SYSTEM

There are 146 financial reporting units in BDZ which are obliged to submit monthly and quarterly results to be combined into one account in order to construct a consolidated BDZ financial account. This number includes railway operating units, infrastructure units and railway industry units. Each railway reporting unit is obliged to send financial reports to the regional headquarters each month and quarter in the hand written form. The three regional headquarters in Sofia, Plovdiv and Gorna Oryahovitza then send their consolidated reports to the headquarters.

The monthly report is rather simple as the reporting units are only required to submit monthly balance sheets and profit/loss accounts together with receivables, payables and salaries. Quarterly reports should include more detailed information. In addition to the monthly requirements, each unit has to compile such information as the contents of fixed and current assets, cash flow situation, debt situation, transaction with government such as taxes, insurance and subsidies.

Railway reporting units also include some supporting departments and centres such as general administration, revenue control centre, main information and computer centre etc. The same format of reporting applies to railway industry units, but they directly report to the headquarters. Railway industry reporting units include workshops of locomotive repairs, wagon repairs, coach repairs, sleeper plants etc. in various places of the railway regions.

6.1.1 Revenue Control

Revenue itself is retained by each unit which has its own bank account. However they are obliged to report daily and monthly either to the regional headquarters or the headquarters in Sofia.

Every day at 6pm each unit reports the daily income to the regional headquarters on the telephone, which then is aggregated into the total regional daily income. On the other hand, monthly aggregated income is directly sent in the hand written form by 6th of every month to the Revenue Control Centre in Sofia, which is then processed by the Main Information and Computer Centre. The income data is thus processed in the computer centre and then, after being checked, reported to the management team and the financial department in the headquarters.

The Revenue Control Centre has another important task of dealing with international income arising from export, import and transit international revenue. The department is obliged to prepare documentation to be settled in the foreign currencies mostly in Swiss Franc.

6.1.2 Procurement Procedure

Procurement of major commodities and spare parts are proceeded by the Procurement Department in Sofia. There is a list of commodities of currently 62 groups to be solely dealt with by this department which was approved by the management of the company. The department is obliged to a direct reporting to the deputy director general in charge of the rolling stock industry.

By the end of October each year, each operational unit submits a procurement plan for the coming year based upon the operational plan. The list then is aggregated in the headquarters and is sent to the Procurement Department by 20th. December. The total is finally sent to the headquarters management level for approval. The department also manages stocks in the regional warehouses, and is obliged to rearrange inter-regional procurement in order to optimize the annual procurement plan. By the end of each month, the department submits the procurement plan for the next month in accordance with the annual procurement plan.

For the safety reason, each commodity to be procured by the department has to receive some internal authorization. For instance, a plant for permanentway supplies has to have a certificate from the Railway Research Institute.

6.2 FINANCIAL ANALYSIS

6.2.1 Overview

The financial situation of the company sharply deteriorated in the beginning of the 1990s due to the rapid decrease in the transport demand because of the nose-diving economic activity and the lagged restructuring of the company. Also the necessary adjustment of the transport prices (passenger fare and freight tariff) were very difficult because of the general opposition and the government regulations. Consequently the state railway entity became virtually impossible to run the railway transport by its own financial resources. The state government eventually started to grant subsidies to the railway business in 1992 in view of the fatal financial situation of the company.

The published profit/loss accounts showed sharp deterioration in the earning capabilities of the company in 1995 and 1996. Final loss increased substantially from 553 million Leva in 1994 to 2,703 million Leva and 8,412 million Leva in 1995 and 1996 respectively. In the first half of 1997, however, the company managed to record profits both at operating and pre-tax levels, while final loss decreased.

Table 6.2.1-1 Profit and Loss Account (million Leva)

	1993	1994	1995	1996	1997 1H
Net Income	8,491.4	10,122.6	14,999.8	27,450.0	112,801.2
Revenue	10,708.5	12,465.0	16,974.9	31,130.7	120,795.4
Material Cost	2,279.2	3,020.7	4,525.8	11,482.5	39,690.8
Hired Service	1,767.5	1,933.2	1,380.7	1,840.3	3,551.6
Labour Cost	4,765.8	6,167.0	8,736.2	15,946.7	62,903.3
Depreciation	222.1	237.8	2,041.1	2,138.1	1,126.4
O. Profit	-612.1	327.6	-1,337.0	-1,571.0	501.3
Net Financial	-731.2	-902.9	-950.3	-1,143.0	958.7
PT Profit	-1,343.3	-575.3	-2,287.3	-2,714.0	1,460.0
Net Extra.	427.1	22.2	-402.0	-5,697.9	-4,198.4
Final Profit	-916.2	-553.1	-2,703.5	-8,412.0	-2,738.4

Source) BDZ

Note) O. Profit = Operating Profit

PT Profit = Pre-Tax Profit

Net Extra = Net Extraordinary Cost

However, these fluctuations do not represent the trend of actual profitability of the company, as the 1995 deterioration was almost solely attributable to the change in accounting method. In 1995, depreciation was started to be charged against the fixed tangible asset valued at 1992 repurchased market prices compared with the historical cost basis which had been employed until 1994. This change resulted in an increase of around 1,800 million Leva in this particular cost item in 1995. Without this special factor, the final result must have been almost in line with the previous years. Also, the sharp increase in the final loss in 1996 is mostly attributable to the extraordinary factors as the operating and pre tax losses increased only marginally.

The basic earning capabilities of the railway business may have improved slightly during the period, as the operating and recurring losses managed to increase only slightly, which may suggest a better profitability under the very severe inflationary pressure prevailing in the economy. In this sense, the more realistic tariff/fare policies, restructuring the business lines including the staff reduction efforts, though lagging behind the recommended schedule, have definitely contributed to the financial improvement.

Table 6.2.1-2 Profit Margin (%)

	1993	1994	1995	1996	1997 1H
O. Profit	-5.7	2.6	-7.9	-5.0	0.4
PT Profit	-12.5	-4.6	-13.5	-8.7	1.2
Final Profit	-8.6	-4.4	-15.9	-27.0	-2.3

Source) BDZ

O. Profit = Operating Profit

PT Profit = Pre Tax Profit

In fact, the profit margin (Pre-Tax Profit/Total Revenue) trend well illustrates the improving profitability of the company. Although the ratio before adjustment substantially worsened in 1995, after adjustment figures by the asset re-evaluation factor were -2.9% both for 1995 and 1996. The level was a substantial improvement from 1993 and still some improvement from 1994, suggesting a better profitability in real terms.

The profit and loss account represented another improvement in the first half of 1997, with positive results achieved both at operating and pre-tax levels. The relatively huge extraordinary loss lead to a final loss which, however still was the smallest in terms of the profit margin during the period under review. The analysis is able to lead us to conclude that the company's efforts to restore financial viability have been paid. The efforts have included price adjustments, reduction in excess resources such as staff and rolling stock, severe investment policies, etc.

However, it is also true that there still exist many problems to be tackled and that it is still too early to conclude that financial viability has been already fully restored. Particular attention has to be paid to the result of 1997 first half. The semester improvement of the profit margin of around 10% almost solely owes to the corresponding reduction in the depreciation/revenue ratio from a year ago.

The hyper inflation enabled the company to raise tariff/fare rates substantially during the period, while depreciation was only charged on a historical purchased value which though was adjusted to the 1992 market prices. The improvement on the book does not deserve appreciation because the hyper inflation requires the corresponding increase of the prices in various assets while the low level of depreciation makes it difficult to replace obsolete assets.

If the company is satisfied with the result achieved in the first half of 1997 and no further efforts are paid to raise profitability, the past pattern of business difficulties will be repeated. The prevailing level of depreciation is not sufficient enough to maintain the quality of assets as the asset replacement at the current market price is impossible. On the other hand, it also should be noted that during the period of the financial constraint much less maintenance and repairing activities have been conducted. The situation is still continuing now. This will create another factor for the company to deteriorate the quality of railway transport. Thus continued efforts to restore financial viability is necessary in order to satisfy the customer needs and even strengthen the railway competitiveness.

6.2.2 Revenue Analysis

(I) Revenue Structure

Table 6.2.2-1 Revenue by Business Activities (million Leva)

	1993	1994	1995	1996
Freight	6,395.0	6,959.2	11,228.4	20,174.6
Passenger	768.6	1,363.1	1,927.2	3,982.5
Other Railway	123.5	172.1	235.4	440.1
Railway Ind.	1,022.3	1,394.1	1,424.0	2,242.9
Science	39.7	50.6	13.8	2.0
Trade	17.3	26.5	165.9	602.1
Construction	125.0	157.0	5.1	5.8
Net Sales	8,491.4	10,122.6	14,999.8	27,450.0
Subsidies	1,800.2	1,000.0	1,729.3	3,213.9
Other Revenue	416.9	1,342.4	245.8	466.8
Operating Rev.	10,708.5	12,465.0	16,974.9	31,130.7

source) BDZ

The company provides the clients with railway transport and related services, of which freight transport takes the lion's share. The composition of the freight transport amounts to 70% of the net sales and 61% of the total operating revenue in 1996. On the other hand, the passenger revenue only contributed to 13.5% of the net sales and 11.9 % of the total revenue in the same year. Government grant to the passenger compensation and infrastructure maintenance is another major source of the revenue, which has been stable in terms of the ratio against total revenue at around 10 %.

Table 6.2.2-2 Revenue by Business Activities in 1997 (million Leva)

	1997, 1Q	2Q	First Half
Freight	31,940.1	51,042.2	82,982.3
Passenger	4,495.1	11,756.8	16,251.9
Other Railway	522.4	812.9	1,335.3
Railway Ind.	2,820.7	5,659.2	8,479.9
Science	0.8	3.0	3.8
Trade	2,165.2	1,582.9	3,748.1
Construction	0	0	0
Net Sales	41,944.2	70,857.1	112,801.3
Subsidies	1,402.7	4,780.3	6,183.0
Other Revenue	936.9	874.2	1,811.1
Operating Rev.	44,283.8	76,511.6	120,795.4

source) BDZ

Table 6.2.2-3 Factor Analysis of Revenue Increase (Gross)

	1993	1994	1995	1996	1997 1H
Freight					
Volume	-0.7%	0.9%	10.6%	-12.2%	-0.8%
Unit Price	57.4%	55.3%	48.3%	107.7%	1,199.1%
Total	56.2%	56.8%	64.0%	82.4%	1,188.7%
Passenger					
Volume	8.2%	-13.3%	-7.2%	7.9%	27.6%
Unit Price	25.9%	110.1%	55.1%	81.6%	977.7%
Total	36.4%	77.4%	41.4%	96.0	1,275.1%

Source) BDZ

Note) Volume is based on ton/Km for freight and person/Km for passenger.

(2) Railway Transport

Transport volume has kept stable since 1992, though with some yearly fluctuations. The only exception is the first half of 1997 when the passenger volume increased as much as 27.6% from a year ago. However, this rapid increase is mostly attributable to the skyrocketing fuel price and some shortage of fuel which was prevailing during the first quarter of the year and should not be regarded as a new trend has set in. In fact, the volume increase lost momentum as time passes by, from 45.8% in the first quarter to 11.3% in the second quarter and mere 2.4 % in July.

Thus sales increase has been almost totally attributable to price increases in the long run. Between 1992 and 1996, freight sales increased by 6.3 times of which 6.5 times is contributed by a series of price increases and a slight negative contribution by transport volume. The same analysis reveals that 5.7 times passenger sales increase is contributed by 6.5 times by price increase and negatively by transport volume. Virtually the same pattern applied to the first half of 1997.

The aforementioned price and sales increases have been a result of the recommendations of various consultants. However, two important factors have to attract attention here. First one is that the tariff/fare increases have almost always lagged behind the general trend of price rise. As most of the cost items of the company fluctuates almost in line with the general price movements, the lag in the price adjustment process has continuously resulted in creating factors offsetting the restructuring efforts.

Another recommendation which the Bulgarian railways has failed to completely achieve is the exclusive sales increase and resulted financial improvement in the passenger business through more intensive fare rises. Actually most of the recommendations raised by various management consultants have pointed to the necessity of real, rather than nominal, price rises in order to raise the share of passenger revenue and to improve profitability of the passenger business. However, the fact is that the cumulative price rise since 1992 has been almost the same between the two transport sectors, and the freight sales increase has been still, though marginally, higher than the passenger side.

The above inflexibility in railway price setting arose from various factors including opposition from the customers, consideration toward competition with the other modes etc. Particularly the passenger operation is supposed to have suffered from the restrictions on the passenger fare rises. The team believes that the situation will improve in the future as such restrictions have been lifted by the new state government. Now it is the company 's own discretion and a deliberate pricing policy has to be established.

Another factor to be mentioned is the agreement among the IMF, the government and the company on the profitability of the passenger business. The agreement set a financial target of the business in terms of the cost/revenue ratio of 1 to 2. The revenue shortfall is to be compensated by the state or the municipal governments.

(3) Non Railway Transport

There are some supporting functions of BDZ other than the normal railway transport business.

These include loading/unloading, shipping, sleeping car and some other services. Also railway industry consists of mainly maintenance and repairing services. These industries as a whole have contributed to maintain railway quality and safety. However, as the volume to be repaired and maintained in these workshops has decreased quite sharply these years, Railway Rehabilitation Plan (RRP) has suggested to streamline these railway industry units. The company plans to achieve this by transforming some of them into joint ventures and joint stock companies by the end of 1998.

Railway industries have contributed to a small part of outstanding revenue (services provided to non BDZ clients). However, the outstanding revenue has been too small and the businesses as a whole have been loss making, the proposed streamlining is expected to play some positive role for the company's financial rehabilitation. After the restructuring of the railway industries is finished, only core workshops are planned to remain inside BDZ.

The company appears not particularly keen to develop non transport related businesses other than these ones. Although such efforts have been paid these years such as renting out some station spaces to retailers and book shops, the development of such businesses has not been quite successful yet.

(4) Compensation and Subsidy by the Government

As the financial situation of BDZ deteriorated substantially, the government started to grant compensation and subsidy to the company in 1992. Since then the state government has granted passenger compensation and subsidy for infrastructure. To be more precise, the national government has granted funds to the railway company under these categories; passenger compensation, infra-structure maintenance, road network fund, emergency financial aid and investment subsidy. Of these items, the passenger compensation and infra-structure maintenance have been granted continuously. Aside from the investment fund, all the items are included in the revenue in the profit and loss account. For the past couple of years, the ratio of the compensations and subsidies have been around 10% of the total operating revenue except in the years 1992 and 1993.

Table 6.2.2-4 Compensation and Subsidy by the Government (million Leva)

	Total	Passenger	Infra Mainte.	Road Net Fund	Emergenc y Aid	Current Total	Capital Invest.
1990	87.0	85.0	0.0	0.0	0.0	85.0	2.0
1991	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1992	701.0	0.0	701.0	0.0	0.0	701.0	0.0
1993	2,097.7	612.1	288.1	0.0	900.0	1,800.2	297.5
1994	1,571.0	680.0	320.0	0.0	0.0	1,000.0	571.0
1995	2,429.1	1,160.0	550.0	0.0	0.0	1,710.0	719.1
1996	3,931.8	1,500.0	900.0	769.8	0.0	3,169.8	762.0
1997 ©	41,000.0 (59,000)	25,000.0	10,000.0 (28,000)	0.0	0.0	35,000.0 (53,000)	6,000.0

Source) BDZ

Note) 1997 figures are those offered by the state government.

Figures in the parenthesis are the requested amounts by BDZ.

Infra Mainte = Infra Structure Maintenance Subsidy

Road Net Fund = Road Network Fund

Capital Invest. = Capital Investment Subsidy

The subsidy procedure and amount are determined in both the BDZ Law and the Contract Plan. The system is that the company submits requests to the government for the required amount as compensation and subsidy. However, the required amount is rarely agreed between the two parties, and it appears that the prevailing fiscal conditions affect the government's decisions. Eventually the government decides the amount and includes it in the budget law for the coming year. The Contract Plan is revised to include each year's agreed amount and signed by the both parties (BDZ and the government).

For the fiscal year of 1997, the company initially required the government to allocate some 45 billion Leva of compensation and subsidy in view of the hyper inflation. However the government only agreed to grant 25 billion Leva as the total sum of compensation and subsidy. The company then made another counter request to be given additional 28 billion Leva, and the contract for 1997 has not been signed yet between the 2 parties, although the government has agreed to add another 10 billion Leva.

The team believes that both parties have to try harder to develop and modernize the compensation/subsidy system. First of all, both parties have to agree with the more precise criteria which and to which extent the government will grant compensation/subsidy. In order to

meet this demand, it is the company's task to build more thorough and precise management accounting system on the lines and segments, and raise requests on these subjective accounting background. Without these basis agreed between the parties, the existing problems on the subject will hardly be solved.

The team believes that a commercial company providing public services with the customers should receive some compensation and subsidy from the government as long as benefits are granted to the customers. Actually, almost all the railway businesses have received some form of state government compensation and subsidies, and the shares of compensation and subsidy in operating revenue are much higher in other European countries. Even in case of Poland, whose railway company only receives the lowest share of operating revenue among most of the European railway companies, the actual share at 16 % is much higher than that for Bulgaria. (The FRP Report compared.) It might be difficult for the government to increase the grant substantially due to the budget constraint for some years to come. However, a national transport planning policy will have to be built and upon which the aforementioned railway policy has to be concretely established.

6.2.3 Cost Analysis

The major cost categories of the company include material cost (including material, fuel, electricity, and heating), hired service from external organizations, and labour cost. Depreciation charge also has become one of the major cost item since 1995 because of the change in accounting method. Of these cost items, material and labour costs have higher coefficient with the general price rises, while depreciation has almost nothing to do with inflation under the adopted method at least in the short run.

Table 6.2.3-1 Major Cost Items (Million Leva)

	1993	1994	1995	1996	1997 1H
Material Cost	2,279.2	3,020.7	4,525.8	11,482.5	43,242.4
Material	1,027.3	1,387.4	2,315.8	3,156.4	9,546.1
Fuel	628.7	869.3	1,031.1	2,632.3	12,064.2
Electricity	623.2	763.9	1,178.8	3,640.1	17,328.9
Other	0	0	0	213.7	751.6
Hired Service	1,767.5	1,933.2	1,380.7	1,840.3	3,551.6
Maintenance	1,056.4	958.2	833.7	951.4	1,355.4
Other	711.1	975.0	547.0	888.9	2,196.2
Labour Cost	4,675.8	6,167.0	8,736.2	15,946.7	62,903.3
Wages	3,279.5	4,331.6	6,155.9	11,092.9	43,957.1
Social Security	1,396.3	1,835.5	2,580.3	4853.8	18,946.2
Depreciation	222.1	237.8	2,041.1	2,138.1	1,126.4
Other Cost	493.4	733.7	1,403.5	2,503.6	8,901.0

Source) BDZ

Table 6.2.3-2 Ratio of Major Cost Items against Total Revenue (%)

	1993	1994	1995	1996	1997 1H
Material Cost	21.3	24.2	26.7	36.9	32.9
Hired Service	16.5	15.5	8.1	5.9	2.9
Labour Cost	44.5	49.5	51.5	51.2	52.1
Depreciation	2.1	1.9	12.0	6.9	0.9

Source) BDZ

Despite the hyper inflation during the period covered, almost all the major cost items have decreased the ratios against net sales. This is partly due to the company's own successful efforts to restore financial viability by raising tariffs and fares. Also the cost cutting measures have contributed to the improvement to some extent. This trend may be considered to represent the successful implementation of the restructuring measures at least in some activities, but has to be analyzed more carefully. However the cost ratios against total revenue reveals different picture.

As the tables suggest, the labour cost is the most important cost category. Consequently either the drastic staff reduction, or freezing the pay rises, or a combination of both measures are vital in order to restore financial viability. However, neither of them have been quite effective until now as the rising ratio between the cost and total revenue represents.

(1) Material Cost

Material cost is further divided into 4 categories, namely material, fuel, electricity and heating. Material cost is incurred by various business activities, including locomotive, wagon, permanent way, electrification, catenary and electro-technical (signaling and telecommunication). In 1996, nearly half of the material cost was devoted to the permanent way activity alone, mostly for railway maintenance and repairing. The other two major economic activities generating this type of cost are locomotive and wagon economies.

As electrification of the railway company proceeds, the cost of electricity has risen, while the cost of diesel fuel has lagged behind in terms of growth rate. In 1996, electricity cost accounted for some 55% of the total of electricity and diesel fuel costs, and the ratio even rose in the first half of 1997 to 59%. This trend is expected to continue into the future, as further electrification projects are expected to be put into place and some restructuring in the non-electrified branch line train movement is also expected.

(2) Hired Service

This cost category comprises of various services provided to the company by the external organizations ranging from property, various taxes, telegraph, water, repairing made by the other organizations, etc. The bulk of the category is devoted to the capital repairs by the other organizations comprising nearly 80% of the total, and again bulk of it is attributable to permanent way economy.

(3) Labour Cost

This is the cost category which takes the lion's share of the total cost structure of BDZ. Because of the semi-indexation type of wage settlement agreement between the company and the unions, the increase in the labour cost has been quite rapid almost in line with the consumer inflation. Although continuous efforts have been paid by the company in order to reduce the number of employees mostly by restructuring some business lines, the reduction has been achieved only marginally, and the total wage cost has increased quite rapidly over the years due to the sharp wage rises.

Table 6.2.3-3 Labour Cost Indices (1994=100)

	1994	1995	1996	1997 1H
Staff Number	100.0	96.1	93.9	93.0
Unit Cost	100.0	162.5	303.6	2,418.5
Total Cost (A)	100.0	156.2	285.1	2,249.2
(A)/Net Sales	74.4%	66.7%	58.1%	55.8%
(A)/Revenue	49.5%	51.5%	51.2%	52.0%

source) BDZ

The above table reveals that the total labour cost has grown quite rapidly as the rises of unit labour cost has far exceeded the pace of staff reductions. This is particularly notable during the first half of 1997. However, the ratio between the labour cost and net sales has fallen since 1995, and the ratio against the total revenue has kept rather stable for these years. Here appears one effect that the recommendations and proposals of the RRP have been followed by the company and have become effective, though not to the extent recommended by the Rehabilitation Plan, in restoring some profitability of the company.

However, the relative stability is not necessarily warranted as long as the semi-indexation continues. Whenever hyper inflation hits the country again, labour cost may cause another financial crisis. The wage settlement system, if taken permanently, has to be coupled with another built in price adjustment mechanism of the railway operation. Another factor to be mentioned in this respect is the expected over staffing even beyond the full achievement of RRP recommendation. A couple of technical reports have pointed out that a substantial inefficiencies are observed throughout the railway activities. These estimates reveal that still sufficient room is left to reduce the level of staff number even after the company fully complies with the RRP recommendation.

This labour cost category includes every expenditure categories for the payments to the employees of BDZ, including salaries, wages, retirement benefits and social security contributions. All these charges are booked as the cost item in the P/L account, but not paid fully and payables are accumulated accordingly. As at the end of 1996, social security and other payables amount to 4.3billion Leva, and to 5.6 billion Leva if including interest payables.

Of course this increase in the payables can have positive effect on cash flow situation of the company, such unhealthy arrangement should not be followed indefinitely.

(4) Depreciation

Depreciation had only formed a very minor cost item when the company had used the historical cost basis with around 200 million Leva annually. However, this particular cost item gained importance when the company introduced the repurchase cost method for fixed tangible asset valuation in 1995. The new accounting method was introduced in order to enable the company to purchase replacing goods at the prevailing market prices. In 1995, depreciation cost increased sharply to more than 2 billion Leva almost solely due to this accounting method change.

Among the fixed tangible assets to be depreciated, permanent way is the largest single item, followed by station tracks, other equipment, automatics and telemechanics, locomotives and wagons.

Although the depreciation charge increased substantially in 1995 due to the change in accounting method, there must have not been any increase in this cost item in real terms. Rather the team may even be able to say the depreciation charge has been reduced substantially if inflation since 1992 is taken into account. This under depreciation makes the company difficult to replace important assets to be purchased at the prevailing market price, and leads to further deterioration in asset quality in the future. The situation became so serious in the first half of 1997 as the then prevailing hyper inflation created an enormous gap between the historical (1992) asset valuation and the market prices.

There are a couple of factors to increase the depreciation charge in the immediate future. First is the starting investment financed by the international financial institutions such as World Bank, EBRD and so forth. The total amount of this RRP (Railway Rehabilitation Project) investment is scheduled to amount to some 400 billion Leva if taking into consideration the local portion contributed by both the state government and the company itself. The amount will exceed the annual revenue and definitely will create pressure to substantially increase the depreciation, though the implementation construction appears lagging behind the initial schedule.

Second factor is the recent government regulation ordering the domestic corporations to re-evaluate the value of depreciated assets. The order was made because of the substantial under depreciation has become more accurate because of the hyper inflation since the middle of 1996.

A simple calculation utilizing the Producer's Price Index has suggested the inflator will amount to some 50 times between 1992 and the latest price level. Although the simple calculation might necessitate the company to inflate the asset value by 50 times, and the same multiplier might

apply to the depreciation, accounting techniques may quite substantially affect the multiplier to be announced later this year. The company has expressed that it is almost impossible to estimate the exact figure of the multiplier at this moment as the government has not decided the precise method of the asset re-evaluation. The company has said that the multiplier varies from 10 to 59 times.

6.2.4 Cash Flow Analysis

Although the company has incurred losses at least at the final level continuously for these years, it has managed to limit the external financing. In the year 1996 also, they managed to gain cash in hand increases despite the financial deficit on the book.

However, if careful examination is made on the books, the scenario is not that rosy. In the operational level, most of the factors contributing to the cash flow surplus is the receivable and payable balance. The payable account to the social security has been accumulated year by year, and now amount to as much as 4 billion Leva.

The sharp increase in both investment and capital is almost solely attributable to the change in the valuation of fixed assets from historical cost to 1992 repurchased cost basis. There was quite minimal actual outflow and inflow of cash in the year.

Table 6.2.4-1 Cash Flow Analysis (million Leva)

	1995	1996, 3Q
Operating Profit/Loss	-1,337	+269
Depreciation	+2,041	+1,600
Operating Total	+704	+1,869
Net Financial	-950	-365
Net Extraordinary	-402	-479
Final Total	-648	+1,025
Adjustment		
(Receivable/Payable)	+1,921	+602
Investment	-50,064	-614
Capital	+49,980	-4
Borrowing	-128	+293
Investment Finance	+716	+542
Net Investment	+672	+217
Total	+24	+1,242
Others	-382	-841
Cash Increase/Decrease	-358	+401

source) BDZ

In general, relatively favorable cash flow situation in the investment balance for these years may have been resulted from the restrictive financial policy. The severe financial constraint may have caused the company to limit maintenance and repairing activities. If this is the case, the cash flow situation is, probably, worse than it appears.

Another worry over this point is that the investment till 1999 financed by the international financial organizations may cause a substantial increase in the interest and principle services afterward. Particularly if the ongoing depreciation of the Leva continues into the future, the debt services are expected to much more than the initial servicing schedule. Even in the medium term future, the debt services may create cash constraint of the company.

6.2.5 Investment Analysis

Table 6.2.5-1 Asset Analysis (million Leva)

	Beginning	Addition	Disposal	depreciation	Year-End
1995					
Land, Building	6,928	433	295	43	7,023
Machinery, Equipment	30,339	515	140	1,162	29,552
Rolling Stock, etc.	15,906	676	620	826	15,136
Others	1,861	780	287	1	2,353
Total	55,034	2,404	1,342	2,032	54,064
1996, 3Q					
Land, Building	7,065	133	4	83	7,112
Machinery, Equipment	30,722	288	103	2,058	28,848
Rolling Stock, etc.	15,957	323	437	1,459	14,384
Others	2,352	988	152	2	3,186
Total	56,096	1,732	696	3,602	53,530

source) BDZ

In the above table, others include newly acquired asset value, which were 777 million Leva for 1995 and 986 million Leva for 1996 (3Q). Thus the total fixed asset acquisition during the period 2,401 million Leva and 1,730 million Leva in 1995 and 1996 (3Q) respectively.

The main investment items are, second class coaches, wagons and electric locomotives for 1995. On the other hand, wagon disposal was also large, suggesting that replacement has been going on in this asset item. During the first three quarters of 1996, investment into first class coaches was the major item. Again here, investment and disposal nearly matches, suggesting intensified replacement activity is going on in this field.

The overall investment amount is quite comparable with the depreciation charges for each period. Both for the period of 1995 and 1996 (3Q), asset addition only exceeds marginally the depreciation charges. This is in one part probably due to a deliberate policy of not increasing borrowings from external financial sources. However, it has to be born in mind that

depreciation is based on the 1992 price rather than the latest market price. The hyper inflation since then may have been adversely affected the real amount of depreciation, and new investment may not match the equal amount as that in 1992. It is necessary particularly under the hyper inflation period that the company should substantially increase the amount of investment in order to meet the asset life and safety requirements.

6.2.6 Break Even Point Analysis

A rather primitive break even point analysis was conducted on the company as a whole. The analysis uses the operating profit as the profit indicator in order to avoid unnecessary noises. The improving profitability is illustrated both by the profit/loss against revenue from -7.9% and -5.0% in 1995 and 1996 respectively to a positive 0.4% in the first half of 1997, and by the rising trend of break even point ratio (revenue against the break even point) from 87.6% and 91.3% to the latest 100.8%.

Table 6.2.6-1 Break Even Point (million Leva)

	1995	1996	1997 1H
Total Revenue	16,975	31,131	120,705
Fixed Cost	10,777	18,085	64,029
Variable Cost	7,535	14,617	56,175
Profit/Loss	-1,337	-1,571	501
Break Even Point	19,385	34,090	119,770
Revenue/BEP	87.6%	91.3%	100.8%

Source) BDZ

However it appears too early to conclude that the company's efforts to restore profitability by raising tariff/fare and restructuring the business lines have been paid. The cost analysis reveals that the fixed cost comprising the labour cost and depreciation has kept stable with only recording 1,085% increase between 1995 and the first half of 1997 (annualized level) compared with the 1,399% for variable cost and 1,320% for total revenue. As the same observation is repeated several times in this chapter, the relatively low increase in the fixed cost is mostly attributable to the under depreciation of railway assets due to the historical cost method of depreciation. If the profitability is to be restored actually, particularly in the period of hyper inflation, some form of inflation accounting is necessary. As a matter of fact, the planned RRP investment only will definitely create a huge cost increase in depreciation and several other cost items soon.

This simple financial analysis has another problem to reveal the real or potential profitability of

the company as it only deals with the operating rather than pre tax profits. Once the net financial cost is taken into consideration, the profitability will become different from this simple analysis. Although the net financial balance turned to become positive in the first half of 1997, this is mostly attributable to the balance in the foreign exchange profit and loss and interest balance stands still negative. Furthermore it should be noted that the interest balance is expected to grow in the immediate future as the payment will start on the loans to finance the RRP investment. Thus the financial simulation and analysis has to be conducted taking into account these cost increasing factors. The company is thus advised to build a financial plan on the basis of these cost increases.

6.2.7 Management Accounting (Activity Based Costing)

One of the basic problems of the company in the financial aspect was that the management accounting system was not well established. It is particularly important for the company and the government as well to establish a concrete divisional information system, as EU set a minimum requirement of separating the financial account between the infra structure and operation. Another external factor is the agreement between the government and IMF to raise the revenue/cost ratio of 1 to 2 for the passenger business.

However, the importance of this management accounting system does not only arise from these external requirements, but also arises from other internal and more strategically important aspects. Without developing the system, the company is not able to accurately reveal the segment and line financial capability. This system must serve to enable the company to establish a basis of infra-structure charge, passenger compensation and infra-structure subsidy by the state government and also to form a basis to determine line network strategy. All these have to be established in the way easily and more accurately persuasive to the government.

The management team of the company has well recognized the importance of developing such a system, and formed a task force for this purpose. Already the performance has been shown in the form of section financial analysis, and the method is going to be better developed in order to include the section financial analysis. The basic analytical tool is established in a way conducive of the latest development in the accounting theory, namely Activity Based Costing.

Table 6.2.7-1 Divisional Financial Analysis (Mil. Leva)

1996								
	Total	Rail	Op.				Infra	Other
				Pass	Freight	Loading		
Sales	34,661	24,597	24,597	3,982	20,175	440	0	10,064
Subsidy	3,170	3,170	1,500	1,500	0	0	1,670	0
Rev.	39,560	28,860	27,190	5,963	20,787	440	1,670	10,700
Material	10,003	7,893	6,855	2,930	3,833	92	1,130	2,110
Labour	15,947	13,894	10,323	4,831	5,186	307	3,570	2,053
Hired	1,840	1,537	713	369	329	15	824	304
Dep.	2,138	2,021	939	428	484	27	1,083	117
Operate	-1,571	-1,460	4,082	-4,645	8,738	-11	-5,543	-111
Recur	-2,714	-2,888	2,655	-5,280	7,946	-11	-5,543	174
Final	-8,412	-12,446	-6,904	-9,508	2,615	-11	-5,543	4,034
97 1H								
Sales	141,444	100,570	100,570	16,252	82,982	1,335	0	40,875
Subsidy	6,183	6,183	3,964	3,964	0	0	2,219	0
Rev.	152,134	109,176	106,958	21,281	84,341	1,335	2,219	42,958
Material	41,166	32,654	30,550	12,839	17,439	272	2,570	8,318
Labour	62,903	54,886	41,118	19,355	20,553	1,210	13,768	8,017
Hired	3,552	2,845	1,539	796	710	32	1,306	707
Dep.	1,126	1,057	502	229	260	14	555	69
Operate	501	-1,108	17,010	-19,723	36,951	-217	-18,118	1,609
Recur	1,460	-2,426	15,691	-20,315	36,224	-217	-18,118	3,886
Final	-2,738	-6,779	11,358	-22,232	33,788	-217	-18,118	4,041

Source) BDZ

Rail = Railway Total

Pass = Passenger

Infra = Infra Structure

The divisional financial accounting system looks still incomplete as the grand total does not match the official and audited accounting figure. Although the total profit levels are consistent

with the official figures, revenue and cost figures are different each other. This may suggest the possibility that adjustment for consolidation is incomplete in case of the management accounting system. The team believes the company should pay more intensive efforts to improve the divisional accounting system as the system will definitely provide the company and the authorities with an important tool to make grand designs of the transport strategy for Bulgaria.

The divisional financial analysis reveals that several business and accounting problems still survive in the company's culture. The most serious problem among them, we believe, is that the passenger business still incurs sizable losses even after taking into consideration the passenger compensation. The annual loss in 1996 was 9.5 billion Leva and the first half of 1997 amounted to 22.2 billion Leva both at the final level.

The company and the state government have agreed with the international financial institutions to achieve the revenue/cost ratio of 1 to 2 for the passenger service. The ratio has substantially improved recently due to the recent price hikes, with 0.375 for 1996 and 0.306 for 1997 1Q to 0.446 for the second quarter of 1997. The second quarter improvement appears to owe much to the round of fare rises in the first half of 1997, though lagging somewhat from the freight sector's tariff adjustment.

However, the cost does not include the attributed cost of infra-structure, and definitely under estimate the real cost of the passenger service. Another information provided by the Railway Research Institute revealed that the ratio stood at 0.29 for the second quarter 1997, significantly lower than the company's figure. Another consideration has to be paid to the fact that the idea of setting the ratio a 1 to 2 ratio is to let the state or other levels of the public bodies to compensate for the losses of the passenger business, as the division serves at least to some extent the state and local government by providing services with substantial losses. In this case, the company is urged to run the business for the public consideration and the government is supposed to be the purchaser of the service. However the budget constraint resulted from the still continuing economic recession has caused the government to stick to tight budget policy, and the passenger compensation has not been enough to cover the losses of the passenger activity.

On the other hand, the table reveals that the freight business is quite profitable, although the sector does not receive any financial assistance from the government. The sector is not only financially self independent but also is able to cross subsidize the loss making activities of the company under the existing framework. The sector's profit is great enough to compensate for the losses incurred by the passenger sector and almost two thirds of the net cost of the infra

structure activities. Such a financial structure must have been created in order to facilitate the PSO service for the passengers with the cost burden shouldered by the freight customers under the centrally planned economic regime. However now when the potential competition within the railway operation and from road transport is threatening even the freight business, such a financial structure has to be corrected as early as possible.

Another important challenge facing the company in terms of accounting is that an accurate financial method has not been established to reveal the real financial picture of the infra-structure sector. In most of the countries, who have already pursued institutional separation, the operators have been obliged to pay some kind of charges to the infra-structure managers. We believe the same would become the norm for Bulgaria in the future. If separation materializes here, the infra-structure company is supposed to be providing the customers with service through renting permanent way to the operators. Then it is a commercial principle that the infra-structure organization receives some revenue in return to the service. A principle has to be built on this important charging system, of course not in a way differentiating the rail and road transport. An option could be built on the basis that the passenger and the freight charges could be determined on the different principles.

6.2.8 Break Even Point Analysis by Sector

The break even point analysis has been conducted for the railway activities for the first half of 1997 based upon the divisional financial information provided by the company. Although the company's divisional financial information divides the railway activities into three, namely infra structure, passenger and freight operations, current accounting system does not provide any revenue aside from the government's infra structure subsidy. Thus the nature of the activity of infra structure does not fit the break even point analysis, the team deals with the two operation activities only for the analysis.

Table 6.2.8-1 Break Even Point by Sector (1997 2Q, million Leva)

	Passenger	Freight
Revenue	15,620	52,835
Fixed Cost	12,933	14,427
Variable Cost	13,405	16,538
Operational Profit/Loss	-10,718	21,870
Break Even Point	91,077	21,000
Break Even Point Ratio (%)	17.2	251.6

Source) BDZ

The cost structure between the two operational sectors do not differ substantially. Also the

total amount of costs are almost the same compared with the huge difference in the respective revenues. The result is striking that the break even point is substantially lower for the freight sector which has much higher revenue. The freight sector retains high profitability while the passenger sector still incurs a huge loss though improved somewhat from the previous quarter. In the first quarter the passenger revenue was too small to cover even the variable cost, and it was impossible to estimate the sector's break even point.

The table reveals the necessity for the passenger sector to rely more on the pricing policy and /or the government's compensation policy. According to the divisional break even point analysis, the passenger sector will have to increase the capacity utilization be more than 5.8 times, which is much higher the forecast level of railway passenger demand in the year 2020. Thus the passenger activity has to take every possible measure

Still the second quarter result is even better than the first quarter for the passenger activity as the full effect of fare rises have been reflected on the account while the negative effects of general inflation prevailed in the first quarter.

If the company will have to become financially viable solely by fare policy, they will have to raise the passenger fare by as much as 91%, a level which is not able to be reached without substantially affecting demand. On the other hand such a magnitude of government's compensation increase will hardly be attainable in the near future. Furthermore the analysis only assumes the latest cost structure and does not take into account the future increases in some the cost items. Thus A combination of fare and compensation policies, together with a continued restructuring efforts, will be definitely necessary in order to become financially viable.

6.3 PLANS TO DEVELOP FINANCIAL SYSTEM

At this moment, world bank financed MIS Project is going on. The project consists of three (3) components; Freight Operation System (FOS), Passenger Information System (PIS) and Financial Management System (FMS). The aim of introducing the system is to reorganize the financial and accounting system to the one required for more commercialized entity.

Currently the financial statements of the company only comply with the statutory requirements, and does not serve the management decisions on the commercial basis. In order to achieve the management accounting to assist the management decisions, very detailed sector/line information has to be obtained instantly. To this end, computer assisted management accounting system has to be constructed. Also the FMS is expected to serve more strongly the investment decisions which have not been quite systematized until now.

4.6 FINANCIAL FORECAST

The company can not clearly survive if the cost increase factors in the near future are taken into consideration. The RRP investment project alone is expected to form cost increase pressure by around 44 billion Leva for depreciation, and more than 10 billion Leva for interest charge. Also some other cost items will have to increase due to the investment and construction activities.

On the other hand, the company's annual turnover will stand at around 300 billion Leva, and only the possible result is that the deficit will grow at a rapid pace if nothing is done. More importantly, the company will have to suffer from cash shortage in the near future when the planned repayment of the past debt to the National Insurance Institute (for suspended social security contribution) and loans extended by the international financial institutions. The result will be the further accumulation of external debts if possible, and eventually the shareholder's account will fall into deficit, a situation which will make the company virtually impossible to receive fresh loans from financial institutions.

Thus the team has conducted a financial forecast taking into account the financial improvement measures. The team assumes a flat rate of 1700 Leva /Dollar in foreign exchange, and the forecast result is presented in constant Leva. The RRP investment is assumed to complete as planned, and the repayment schedule will proceed with the financial plan established by the company. The base interest rate is assumed at 5.7% annually, and penalized rate is assumed to be base rate plus 10%.

Price forecast is presented by the team's expert, who proposed an immediate sharp increase in the freight tariff and gradual annual increases thereafter both in real terms. On the passenger fare side, it was proposed that the fare policy will be built on the cautious basis for some years to come, with only a few percent of annual increase. When the timing is ripe, however, rather aggressive fare policy will become possible. The team advises annual fare increase of 10% for consecutive 3 years between 2003 and 2005. Again gradual increases are proposed in order not to erode competitiveness substantially. The demand forecast was also contributed by the team's expert taking into account the economic environment and price proposals. The demand forecast also took into consideration the keener competition beyond the year 2015.

The agreement with the government is assumed to be made that the passenger compensation will fluctuate according with the real economic growth rate, while the government financial commitment will be determined by the maintenance cost and investment before the institutional separation, and full cost (full cost less access charge) and investment.

Upon these price proposals and demand forecast, and also the tentative financial forecast, the team's human resource expert created a personnel and payment plan. The proposal comprises two major elements, a continued reduction in staff number throughout the planned period, and a pay scheme that a part of productivity gain will be reflected in the pay level.

Also it was assumed that the infra structure and other asset maintenance and replacement will be conducted as proposed by the team's experts. In the third phase of the improvement plan, fresh investment projects are taken into consideration.

6.4.1 Short and Medium Term Forecast

Under the aforementioned frameworks, the unified railway company may be able to reach around break even point in as early as 2001 at the operational level. However, because of the sharp increase in the interest payment, the improvement at pre tax level will become only possible around 2004. The continued restructuring measures, coupled with the tariff/fare adjustments, particularly the immediate freight tariff rise and passenger fare rises between 2003 and 2005, are expected to contribute the financial improvement.

However, in the short run, the profitability will hardly be restored because of the rapid cost increase caused by the RRP investment projects. Aside from the continued effort of business restructuring, the company should carefully plan the cash flow situation during the period.

Another important factor appears the financial viability of the passenger sector. A vital factor for the unified company in terms of financial strength is the restoration of financial health of the passenger sector. The team's proposal of rather aggressive passenger fare policy is reflected in the overall financial situation after the year 2003. Thus as long as the company takes the form of a one unified company, financial improvement of the passenger sector plays an important role.

Although the development of combined seamless transport system is proposed around the year 2003, the development project is assumed to be implemented jointly with foreign interests in the form of BOT (Build, Operate and Transfer) and no substantial cost increase is forecast from the implementation of the project.

Another important factor appears the financial viability of the passenger sector. A vital factor for the unified company in terms of financial strength is the restoration of financial health of the passenger sector. The team's proposal of rather aggressive passenger fare policy is reflected in the overall financial situation after the year 2003. Thus as long as the company takes the form of a one unified company, financial improvement of the passenger sector plays an important role.

The open access and access charging system are assumed to start from 2003. During the initial stage before institutional separation takes place, the system will virtually function as internal transfer. Here, the charge is assumed to be based upon SRAC of infra structure cost, and flat rates of 25 billion Leva for freight and 5 billion Leva for passenger are applied.

6.4.2 Long Term Forecast

In the long run, however, the company may find it difficult to survive in the very competitive environment if the existing institutional framework continues. The financial forecast illustrates that another turnaround will be resulted in the profitability from the keener competition and increasing interest burden. This is also the case even if the restructuring measures have become effective. It may be possible in theory that maintenance and fresh investment projects will be suspended in order to restore financial viability, but these tightening measures appear dangerous as they may weaken the railway's competitiveness.

Thus the financial forecast suggests the necessity that institutional separation is implemented and rights and obligations of each business unit and the government are clearly established. Of particular importance in this regard is to establish the principle of full financial commitment to the infra structure by the government for maintenance and development. It is proposed that the government will bear all the maintenance cost, investment and fresh development investment of railway infra structure. If the agreement is reached, the freight company will be able to maintain profitability, and passenger company is expected to restore profitability in the year 2016 at the operational level.

If such a situation emerges, the freight company will be able to utilize the cash flow for its business development, such as further business development projects like combined seamless transport and Freight Information System. The passenger company may still suffer from negative results at the final level. In this case, it is advisable to reduce the financial burden before the institutional separation by arranging repayment of the past debt other than the social security contribution.

6.4.3 Government Commitment

The heavy commitment by the government has to be pursued in order to compensate for the much less commitment in the past. The prevailing under maintenance situation is of course attributable to the financial constraint of the railway business, but is to some extent a result of the under commitment by the government.

It has to be stressed that the most important railway strategy in the immediate future should be the maintenance activity which has far lagged behind during the past couple of years. The table shows the required amount of maintenance cost and investment. Intensive maintenance and replacement activities are advised by the team's experts right after the RRP investment project. This will enable the substantial decrease in investment after the year 2011. On the other hand, the increased maintenance cost beyond 2011 is a result of the strategic investment starting from the beginning of the final stage.

Table6.4.3-1 Railway Infra Structure Maintenance

(Annual Average, Million Leva)

	2001-2005	2006-2010	2011-2015	2016-2020
Cost	18,020.0	12,920.0	35,190.0	35,190.0
Deficit Finance	0.0	56,300.0	71,100.0	73,100.0
Investment	39,551.7	39,551.7	9,121.7	9,121.7
Total	57,571.7	108,771.7	115,411.7	117,411.7

Table6.4.3-2 Railway Infra Structure Development Project

(Annual Average, Million Leva)

	2005	2006	2007	2008	2009	2010	2011
Double track	72,420	72,420	72,420	72,420	72,420	72,420	72,420
Elevated crossing(Line-1)							3,060
Safety and others							
Elevated crossing						7,650	7,650
Electrification							
Total	72,420	72,420	72,420	72,420	72,420	80,070	83,130

	2012	2013	2014	2015	2016	2017	2018
Double track							
Elevated crossing(Line-1)	3,060	3,060					
Safety and others	1,700	1,700	1,700	1,700	1,700		
Elevated crossing	7,650	7,650	7,650	7,650	7,650	7,650	7,650
Electrification	8,500	10,200	14,110	14,110	14,110		
Total	20,910	22,410	23,460	23,460	23,460	7,650	7,650

	2019	2020					
Double track							
Elevated crossing(Line-1)							
Safety and others							
Elevated crossing	7,650	8160					
Electrification							
Total	7,650	8,160					

In addition to the maintenance cost, the government will be obliged to commit to the development finance of the railway infra structure. The team believes that still much has to be done in this regard to improve the quality of railway transport service. The more frequent

railway traffic in the future will necessitate the railway transport to be carried out more efficiently, particularly along the main lines. Thus the relatively cheaper ways of achieving this target are advised, including the double track, the conversion of level crossings to elevated crossings and electrification of some sections of strategic lines.

In the initial stage until 2004, the intensive maintenance activity will require the government to commit more heavily than in 1990s. The maintenance cost in this period is estimated at some 57 billion Leva, compared with the total of infra structure maintenance subsidy and capital investment at 16 billion in 1997. Although the economy is expected to recover from the existing recession and some increase in tax revenue will become possible in this stage, the increased government affordability may not be enough to cover all the financial burden to maintain the asset quality of the railway infra structure. This is why the introduction of railway access charge is required to be implemented in the earlier stage.

The financial arrangement is also made in order to allocate a part of the newly introduced road user charge to the railway infra structure maintenance and development to compensate for the possible shortfall of the government financial commitment.

As has been mentioned earlier, the company receives passenger compensation and infra structure maintenance subsidy from the state government. The team believes that the government and the passenger company should agree on the existing PSO services, whether or not the services will have to be continued in the future. If it has to be continued into the future, again the both parties will have to agree more precisely the category, calculation method etc.

The sector forecasts also take into account the full infra structure subsidy by the state government from the year 2003. Also maintenance and investment projects of infra structure are assumed to be born by the government.

CHAPTER 7 IMPROVEMENT PLANS

7.1 HUMAN RESOURCES CONTENTS

7.1.1 Overview of the BDZ Human Resources Organisation

To fully appreciate the problems of Human Resources or Personnel Management within BDZ it is necessary to understand a little of the background of both the organisation, the facilities and the anticipated workload.

The main issues have been dealt with in more depth in the subsequent sections of the report but summarised below are the key features that should be taken into account in reading this section of the Report :-

There is no separate independent Human Resources organisation within BDZ

At all levels of the organisation it appears to be integrated managerially with other Functions normally with the Finance Department

The major aspect of the role of the HQ Human Resources staff should be conceptual and involve developing policies, with the actual implementation of these policies being carried out by staff in the Regions.

There is no overall computer based recording system to support the development any of these activities.

The Headquarters organisation of 20 staff prior to the April 1997 changes was small in relation to the overall size of the number of staff employed.

In the April 1997 changes the HR Department was reduced to 10 staff.

As a broad 'rule of thumb' you would expect to see one Headquarters HR person to every 2,500 staff employed within the organisation.

This ratio would clearly need to take into account a number of different issues such as the extent of devolution of HR activities to the Regions and more particularly the degree of change that was taking place or was planned to take place.

BDZ appears to be entering a period of major change.

<p>THE HUMAN RESOURCES ORGANISATION MUST BE RESOURCED TO PLAY A MAJOR ROLE IN THESE CHANGES.</p>

7.1.2 Productivity and Staffing levels

7.1.2.1. Background

In the Interim Report it was identified that there was scope for improved productivity as the major fall in traffic volumes had not been matched by equivalent staff reductions.

Whilst further staffing reductions had been projected in the PFR (Programme for Financial Rehabilitation) and the Management Plan for BDZ up to the Year 2005, there had originally been some doubt cast on the determination of BDZ management to achieve these objectives by a decision for a moratorium on compulsory redundancy.

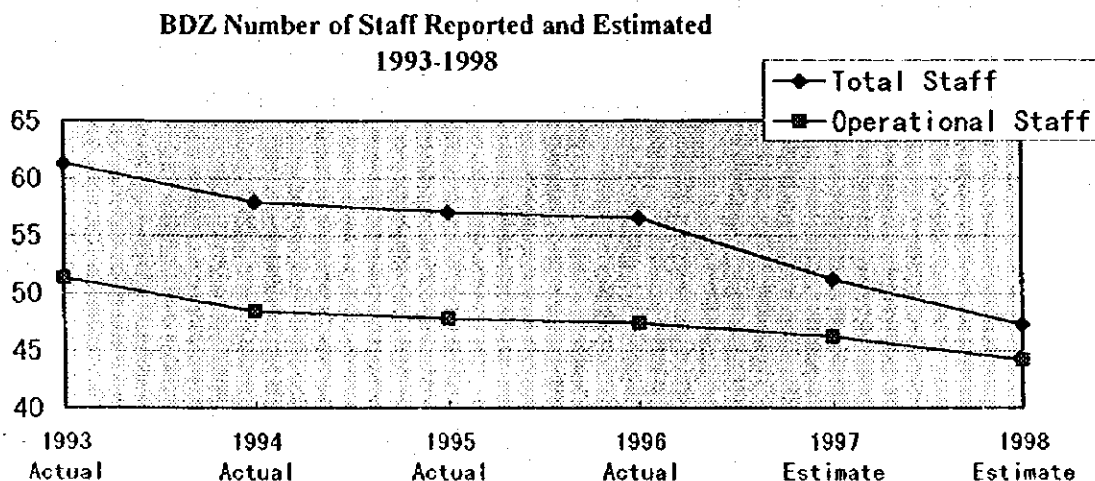
This, however, had been overtaken by the policy of a new Management Team who had already reduced the staffing levels and had set new targets up to the end of 1998.

The current staffing position and specific forecasts at the time of writing this Report are now as follows :-

Actual Number of staff at June 1997	56,573
Planned number of staff July 1997	52,121 (Manpower Plan)
Actual number of staff July 1997	54,599
Estimated staff at the end of 1997	51,200 *
Planned number of staff at end of 1998	44,200 (Operations only)*
Planned number of staff at end of 1998	47,300 (Whole of BDZ) *

* These are the figures that were included in the Rehabilitation Plan in April 1997 and are also included in the 1997 -1998 contract between the State and BDZ.

The following diagram shows the actual staffing trend from 1993 to 1996 and the forecasts for 1997 and 1998. It has been structured to also separate out those staff who are principally engaged in Operations.



This graph is interesting in that it reveals that Operations staff are planned to reduce by 16% over the five year period whilst the other groups which are principally Infrastructure and Rolling Stock are scheduled for a 69% reduction.

To understand this it must be appreciated that the target staffing figures for 1997 and 1998 assume the implementation of a considerable number of the staff reduction schemes included in the original 3 Year Plan. This plan is largely focussed on the establishment of Joint Venture Companies or Joint Stock Companies for construction, maintenance and consultancy activities. A summary of these plans are listed below, where possible with the staffing levels adjusted for the changes made in the July 1997 Manpower Plan (MPP).

Proposed Establishment of Joint Venture Companies with the involvement of Foreign Investors.

<i>Title</i>	<i>Activity</i>	<i>Term for separation</i>	<i>No. of employees</i>
Concrete Structure Works - Svishtov	Production of concrete structures	30 June 1997	339
Workshop for points - Railway Works	Production of railway points	31 May 1997	60
Signalling and Telecommunication Equipment	Production of equipment for signalling and telecommunication	31 December 1997	395
Coach Works - Dryanovo	Production and recycling of passenger coaches	31 December 1998	578

The table below shows which functions will be transferred into Joint Stock Companies and what was the deadline determined for their separation.

<i>Title</i>	<i>Activity</i>	<i>Term for separation</i>	<i>No. of employees</i>
Wagon Works - Burgas	Production and repair of freight wagons	30 June 1997	498
Breaks Equipment Works - Parvomai	Production, repair and rehabilitation of breaks equipment	30 June 1997	262
Container Production & Repair Works - Dralfa	Production and repair of containers	30 June 1997	243
Repair and Maintenance Works - Sofia	Repair and rehabilitation of the permanent way and the heavy railway mechanisation	30 June 1997	783
Measurement and Repair Laboratory - Levski	Repair of measurement and controlling devices and equipment	30 June 1997	39
Timber Sleeper Works - Belovo	Production of timber sleepers	30 June 1997	49
Wagon Repair Works - Samuil	Repair of freight wagons	31 December 1997	242
Loco & Wagon Works - Russe	Repair of locomotives and wagons	31 December 1997	726
Wagon Repair Works - Karlovo	Repair of freight wagons	31 December 1997	284
Railway Works - Sofia	Repair of electric locomotives, production of bogies and spare parts	31 December 1998	1356
Coach Repair Works - Levski	Repair of passenger coaches	31 December 1998	491
Wagon Repair Works - Septemvry	Repair of wagons and axles	31 December 1998	482

7.1.2.2 Staffing Projections 1997 and 1998.

When set against the current actual staffing figure of 54,599 as at July 1997 the full introduction of all these schemes would produce revised staffing figures as under :-

End of 1997	50,679 (Projected reduction of 3,920)	Target 51,200
End of 1998	47,772 (Projected reduction of 2,907)	Target 47,300

This would leave both the 1997 and 1998 targets as achievable with only modest additional savings to be made. The only disadvantage is that virtually the whole of the remaining staff reductions are dependent on the creation of Joint Venture Companies and Joint Stock Companies and should these initiatives be further delayed then it will be extremely difficult to meet the targets.

Discussions with the Deputy Director Generals have confirmed the view that BDZ are determined to commercialise these activities as quickly as possible but there is concern as to whether some of them will attract any outside interest.

7.1.2.3. Long-term Staff projections.

So with the 1997 and 1998 targets already set an exercise has been undertaken to make some International Comparisons of the current productivity of BDZ staff and consider these results against the macro-economic forecasts and the long-term forecasts of BDZ traffic levels. These predictions will then need to be overlaid with reasonable year on year productivity improvements which in part will relate to gains made from the investment programme identified for the next two decades.

International Railway Comparisons.

In looking at International comparisons it has to be appreciated that any examination of Productivity levels can only be conducted on a macro level will, of necessity, only produce broad conclusions.

To reach specific conclusions it is necessary to examine the staffing levels of individual activities and compare them with similar activities in other comparable organisations. The real difficulty is that the data that is available in publications such as the World Bank Productivity Indicators for Railways will inevitably not provide the type of detailed comparisons referred to above. However, they do produce an overall picture that should be useful in pointing the general direction in which the staffing levels of an organisation should be going.

The information used in these comparisons has been obtained from a railway database created and maintained by the World Bank and issued annually in the Rail Business Report.

The database contains basic data on over 100 railways and is updated each year, although the

statistics tend to be approximately 2 to 3 years old. The data has been updated with the 1997 version of the figures.

As referred to earlier the examination of this data needs to be undertaken with great care because of possible inaccuracies in the figures provided and more importantly because each railway will be structured in an organisationally different manner. This produces a real danger of drawing productivity conclusions that are not valid.

Providing that this dangers are understood, it is, however, generally accepted that the use of Performance Indicators will act as a useful guide in identifying trends and highlighting those areas where further investigations and possible action might be necessary.

In this spirit we have attempted to broadly examine the current performance of BDZ staff against other Railways in two key areas.

Staff Costs as a Percentage of Operating Revenue.

Using the current data the figures for BDZ are calculated as :-

1994	49.5%
1995	51.5%
1996	50.4%

The underlying figures reveal that the total labour cost (including salaries, wages, retirement benefits and social security contributions) has grown quite rapidly as the rises of unit labour costs has exceeded the pace of staff reductions.

In comparing this figure with other Railways, there are 52 where the ratio is higher and 37 where the ratio is lower.

Using this indicator then BDZ appears currently to have a satisfactory performance.

Traffic Units per Employee.

This is perhaps a more meaningful indicator of staff productivity in that it directly relates the number of staff employed to the actual traffic moved.

The Traffic Units are calculated by adding the annual totals of passenger kilometres to the freight ton kilometres.

The 1996 BDZ figures used for the calculation of Traffic Units are as under :-

Passenger Kilometres	5,157,000
Freight Ton Kilometres	7,549,000
Total Traffic Units	12,706,000

The 1997 figures have been estimated as at September 1997 to be as under :-

Passenger Kilometres	5,400,000
Freight Ton Kilometres	7,600,000
Total Traffic Units	13,100,000

Using this measure and setting the results against the total staffing levels of BDZ the following trend emerges :-

Year	Traffic Units per 1000 Employees
1993	210
1994	220
1995	232
1996	224
1997 (Estimated)	261
1998 (Planned)	290

The World Bank comparisons are also set against the total staff numbers of the company and using this Indicator **BDZ are in the bottom third of railways around the world.**

This broad Indicator points to a need to re-examine the staffing levels within BDZ. This impression is re-inforced by anecdotal evidence, the better productivity levels achieved in the last decade albeit with higher traffic levels and previous Consultancy reports all of which indicate that there is scope to rationalise the staffing establishments to a level where they are more akin to the International standards and current Traffic levels.

Improving the Traffic Unit Productivity Indicator.

The factors that will improve the Traffic Unit indicator are an improvement in Traffic levels and/or a reduction in staffing levels.

Traffic levels and the Transport Demand Forecast

The forecasts for the changes in traffic levels over the life of the Masterplan Study are included in detail in another Section of this Report, but for the purpose of determining staffing levels they anticipate changes in the levels of Rail Traffic of the following order :-

1997 - 2005	Railway Passenger Growth	34%
	Railway Freight Decline	14%
2006 - 2010	Railway Passenger Growth	5%
	Railway Freight Growth	21%
2011 - 2015	Railway Passenger Growth	5%
	Railway Freight Growth	25%
2016 - 2020	Railway Passenger Decline	3%
	Railway Freight	No change

All changes are set against the base line figure for 1997.

It is understood that the initial forecasts assume zero growth in the first 2 years, so it is considered reasonable to apply the overall growth rates to the 1997 Traffic figures.

Using this approach the following figures emerge :-

	1997*	2005	2010	2015	2020
Passenger Kilometres	5,400,000	7,236,000	5,670,000	5,670,000	5,238,000
Freight Ton Kilometres	7,600,000	6,536,000	9,196,000	9,500,000	7,600,000
Total Traffic Units	13,000,000	13,772,000	14,866,000	15,170,000	12,838,000

* This is the forecast for 1997 which was on target as at September 1997.

Using the optimum 1998 Traffic Units per 1,000 staff figure of 290 this would produce staff requirement figures of :-

2005	47,490 employees
2010	51,262 employees
2015	52,310 employees
2020	44,268 employees

However, this takes no account of the likely improvements in Staff Productivity that will be realised over the lifetime of the Master Plan.

Improving Staff Productivity.

The recommendations in the following section of this Report (7.1.3) set up the basis for the major improvement in staff productivity by providing a framework for changing the culture of the BDZ organisation and creating a Reward System that will positively encourage initiative and innovation.

This will of course take some time to produce significant results and it will be necessary to explore the opportunities that exist within the present system as a first step to improving staff productivity.

From the limited examinations made during the Master Plan investigations, areas that should be embraced in this exercise should include :-

- Rationalisation of Repair and Maintenance Facilities to eliminate unsupportable numbers of small maintenance workshops in concentrated geographical areas.
- Review of the staffing levels for Permanent Way Maintenance Sections to correct the current imbalance in staffing levels. (It is understood that this is in hand)

- Gaining acceptance of the value of professionally devised Work Norms and creating a determination to implement them.
- A relook at the current operation of the staff redeployment policy to eliminate situations where there are surplus staff in some areas whilst staff are working overtime elsewhere in the same discipline.
- A re-examination of the working hours agreement to convert the current levels of wasted or non-productive hours into productive working time.
- A review of the main railway activities with a view to determining the most cost-efficient time to undertake them - day or night.

From this cursory examination there does seem to be considerable scope within the existing system for improving staff productivity levels and these opportunities will be significantly enhanced if there are reasonable levels of investment in schemes that will improve staff productivity over the lifetime of the Master Plan. The type of schemes that should have the most impact are those that mechanise procedures currently carried out manually.

On this basis if BDZ take the opportunity to improve staff productivity, year on year, by a relatively modest 3% then the impact on the Traffic Unit indicator would be as follows :-

Year	Traffic Units per 1,000 staff.	Year	Traffic units per 1,000 staff
1998	290	1999	299
2000	308	2001	317
2002	326	2003	336
2004	346	2005	357
2006	367	2007	378
2008	390	2009	401
2010	413	2011	426
2012	439	2013	452
2014	465	2015	479
2016	494	2017	508
2018	523	2019	539
2020	556		

Based on the assumptions in the foregoing this produces recommended staffing targets as under :-

RECOMMENDED STAFFING TARGETS FOR B.D.Z.	
2005	38,685 EMPLOYEES
2010	35,952 EMPLOYEES
2015	31,670 EMPLOYEES
2020	23,089 EMPLOYEES

It is perhaps interesting to note that the best performance that BDZ have achieved in terms of the Traffic Unit Indicator was in 1988 when there were 85,504 employees who produced a figure of 312 Traffic Units per 1000 employees.

Using the basis of the Productivity assumptions upon which the Staffing targets have been based it will be necessary for the Traffic Unit / 1000 Employees to be improved in the following way :-

1998	290
2005	357
2010	413
2015	479
2020	556

In attempting to check the validity of this approach comparisons have been drawn with similar organisations from information which has been extracted from the 1997 World Bank database as listed below :-

Country	Traffic Units per 1000 staff	Staff Numbers	Passenger Traffic/ Freight Traffic
Austria	359	63,867	40% - 60%
Belgium	326	42,749	48% - 52%
Denmark	340	20,044	71% - 29%
Finland	725	17,368	24% - 76%
Greece	159	12,006	55% - 45%
Bulgaria	224	56,623	36% - 64%
Poland	348	248,761	25% - 75%
Croatia	115	22,004	38% - 62%
Czech Republic	291	107,397	67% - 33%
Hungary	188	74,429	46% - 54%
Romania	238	167,348	46% - 54%
Former Yugoslavia	93	42,235	65% - 35%
Slovak Republic	301	56,000	27% - 33%
Italy	507	140,249	69% - 31%
Netherlands	650	26,561	84% - 16%
Spain	595	41,137	61% - 39%
Portugal	500	14,270	72% - 28%
France	574	185,690	55% - 45%

The difficulty with projecting forecasts so far ahead is that it is difficult to anticipate how other countries will develop in such terms as investment , line closures , privatisation etc. and what are reasonable assumptions to make on these issues.

In trying to further verify the validity of this suggested approach current information has been obtained on PKP(Polish railways) and this reveals that starting from a more efficient base of 397 Traffic Units per 1,000 staff in 1995 they have managed to improve their staff productivity by approximately 2.5% for each of the last 3 years and similar improvements are planned for the next eight years. This improvement is against a background of constant traffic levels.

With a greater opportunity to redress current inefficiencies and a marginally expanding market in both Freight and Passenger Traffics it is considered reasonable that BDZ could aim for a 3% year on year staff Productivity improvement.

In broad terms what we would be expecting would be for BDZ to have achieved by 2020 the approximate current levels of efficiency of such railways as Finland , France , Italy, Netherlands and Spain and Portugal.

7.1.2.4 A Strategy for reducing the number of staff.

Having set some provisional staffing targets based on improvements in Productivity and International comparisons some consideration has been given to the issue of how such reductions could be made without a major challenge to job security.

It is considered that the two key ingredients in producing an acceptable, non-controversial approach to reducing staff numbers will be Staff Recruitment and Staff Wastage.

Providing recruitment can be regulated to provide a significantly lower annual figure than natural staff wastage, then it should be possible to make acceptable staffing and establishment reductions without causing undue problems.

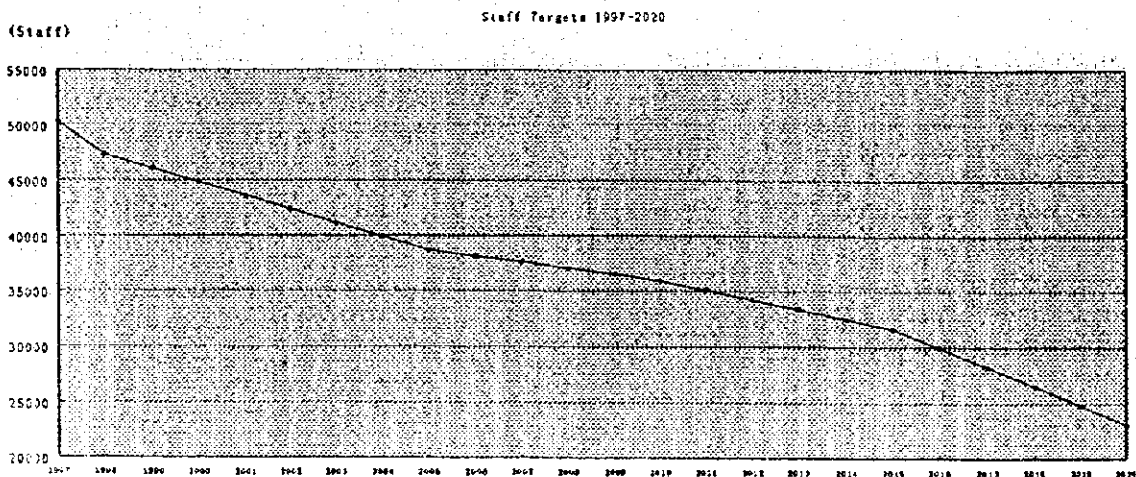
Such an approach would need to be formulated into an integrated Annual Manpower Plan which would need to build in all the pre-planned and anticipated factors affecting Manpower and to overlay this with a reasonable redeployment strategy.

The first stage is to attempt to accurately predict natural staff wastage over the coming years and to then balance this against any essential recruitment that might be necessary over the same period to produce staffing numbers that equate to the targets.

Assuming that the impact of Productivity improvements and the benefits of a new Performance and Incentive Based Reward system result in staff reductions being spread evenly over the years of the Plan and that traffic Change trends are also evenly spread over the five year periods then staffing targets for each year would be as follows :-

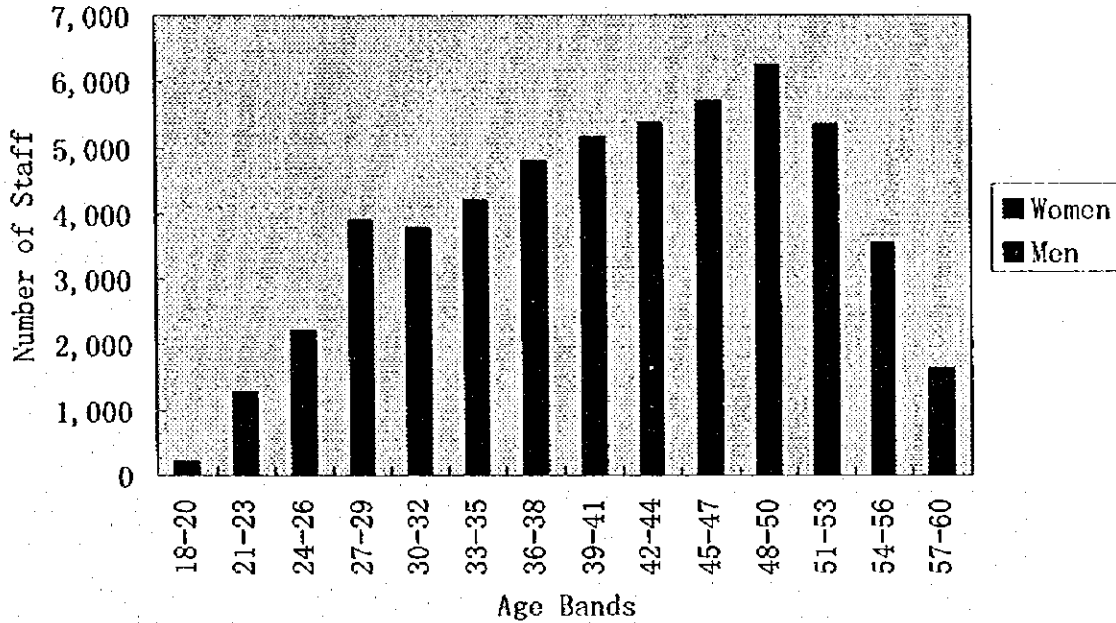
Year	Staff	Redn	Year	Staff	Redn	Year	Staff	Redn
1999	46070	1231	2000	44839	1231	2001	43609	1230
2002	42378	1231	2003	41148	1230	2004	39920	1228
2005	38685	1235	2006	38138	547	2007	37592	546
2008	37045	547	2009	36498	547	2010	35952	546
2011	35096	856	2012	34239	857	2013	33382	857
2014	32526	856	2015	31670	856	2016	29954	1716
2017	28238	1716	2018	26522	1716	2019	24806	1716
2020	23089	1717						

These reductions are represented graphically in the graph below :-



In attempting to forecast likely wastage rates for the purpose of Manpower Planning arrangements were made for BDZ to undertake a survey of the age profiles of their whole workforce as at April 1997 and this is shown in the figure below.

**Age Profiles BDZ Workforce
as at April 1997**



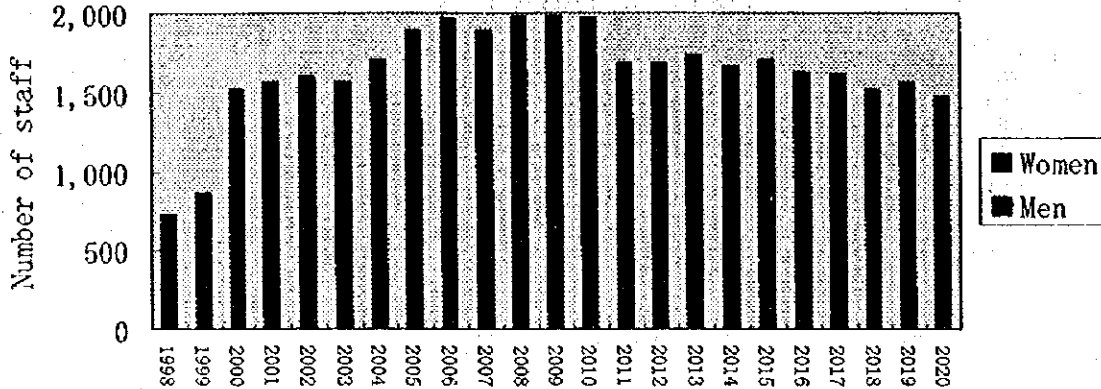
This shows a reasonably representative profile but with large groups of staff concentrated in the 40 to 50 year age bands.

When this data is refined into those staff reaching average* retirement age during the life of the plan it can be seen that against a total planned staff reduction of 22,494 over the years 1999 to 2020 there are 36,805 staff likely to reach retirement age.

*For the purpose of this exercise it has been assumed that 60 is the average retirement age for men and 55 for women, although it is understood that there are a number of different factors that will determine the actual age at which staff will retire.

This data is represented in the figure below :-

**Number of Males reaching 60 years of Age
Females reaching 55 years of Age
1998 - 2020**



Retirements do not of course represent all of the natural wastage and the BDZ data obtained for 1996 shows the following data pattern :-

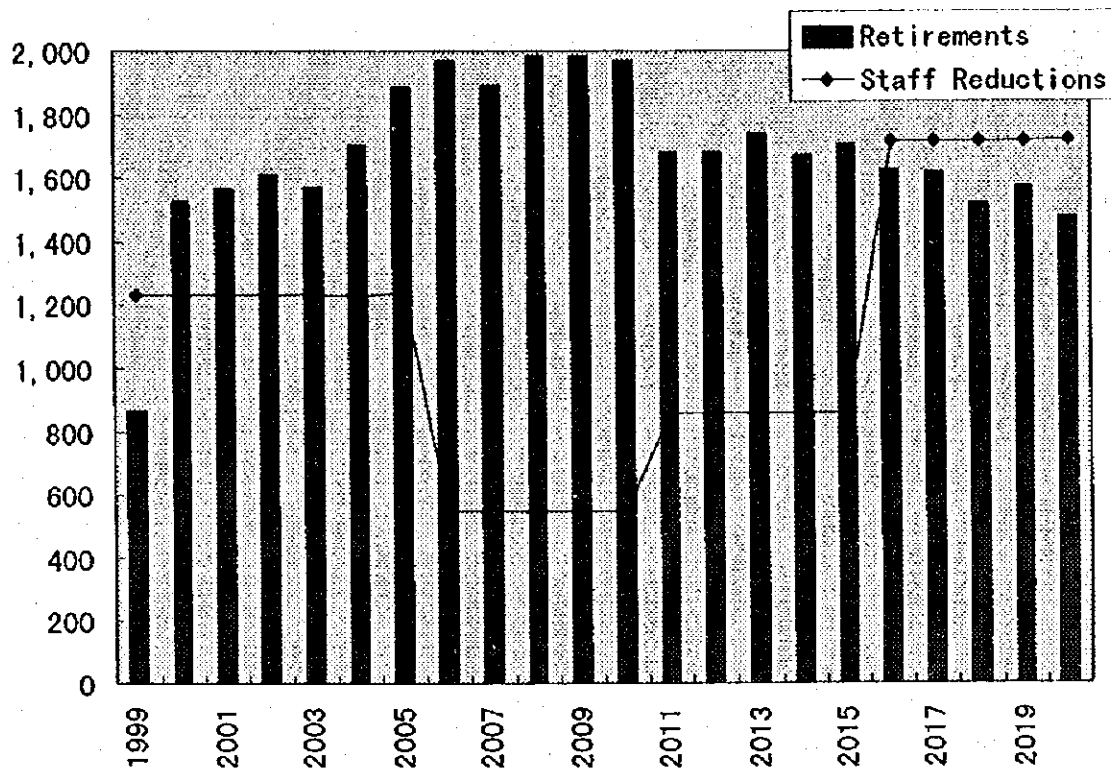
Early Retirements	61
Retirements	1391
Deaths	137
Dismissals	647
Resignations	1187
Others	645

Retirements and early retirements representing only 35% of the total staff wastage for 1996.

If then the figure for projected retirements for the period to 2020 was increased to include all other wastage on the same basis as 1996 then a staggering 103,100 would be anticipated to leave the industry over this 22 year period averaging 4,686 per year.

Even allowing for a significant reduction in resignations and dismissals that should accompany a smaller remotivated workforce there appears to be plenty of scope to plan staff reductions on the levels projected in an orderly and acceptable manner, whilst maintaining a limited amount of selected recruitment.

Using just the figures on projected staff retirements it can be seen from the graph below that the proposed staffing reductions should be manageable providing there is a credible Manpower Plan in operation.



Proposed Staff Reductions set against anticipated retirements 1999-2020

On the issue of recruitment, the figures obtained for 1996 show that there were 2,228 Permanent and 902 Fixed Contract appointments made during the year representing about 5.5% of the workforce. It is unlikely that this level of recruitment could be maintained once the staff reduction plan is operating but the level of anticipated retirements will mean that selected recruitment will need to be a key feature of the manpower planning process for the foreseeable future.

Conclusion.

The systematic reduction of staff should not present any major Employee Relations difficulties providing it is planned and monitored in a professional way. This reinforces the need for a centralised Manpower Plan that will bring together individual Functional Plans and embrace a redeployment and retraining strategy as well as regulating recruitment. Please refer to Section 7.1.6 where proposals for such a plan are included in the Personnel and Training Organisation.

7.1.3 Pay systems, Incentive schemes and The overall Management of Change.

In the Interim Report Section 5.2.2.4 it was proposed that a template would be developed for progressing the inter-linked issues of Pay and Grading Bands, Incentive Schemes and Staff Appraisals in order to produce a Reward System that encouraged effort and rewarded additional responsibility and achievement.

7.1.3.1 The Management of Change.

It was recommended that 'The management of Change' should form the basis of these plans in the following manner :-

1. The Management of Change strategy is the framework upon which the other issues need to be hung.
2. A start has already been made on this issue under the RRP but this will need to be harmonised with both the proposals emerging from the organisational section of the Master plan and any recommendations to reshape the organisation into autonomous market-led sectors.
3. The radical change of the organisational culture of BDZ will inevitably be slow and difficult and is likely to extend well into the next century with the major structural changes taking up to 10 years to fully implement.
4. Against this background of slow cultural change it is reasonable to assume that the introduction of a new reward strategy will also take some considerable time to implement and it is reasonable to allow 5 to 7 years for full implementation.

This process could be accelerated if the implementation of early schemes is seen as a success and there is an increased momentum generated.

The first step will be to get commitment to a full Management of Change Strategy. This will need to be managed at a senior level of the organisation and require considerable managerial effort over a number of years.

This strategy will be a major enterprise in itself and it is for debate as to how it should be structured, managed and monitored.

There is now a lot of experience within Europe and Asia of planning and implementing these changes and all the evidence is that there are no short-cuts to be taken and the whole process needs to be planned and implemented over a realistic timescale.

A fundamental concept is likely to be that the success of the changes will entirely depend on how well the 'People Issues' are addressed and for this reason separate provision should be made in the new Personnel organisation for this initiative. (See Section 7.1.6)

Once the organisation has charted its 'Change Strategy' then it should be possible to systematically introduce the new motivational and reward strategy in parallel with the implementation plan.

All of this may sound somewhat complicated but in simple terms it is recommended that BDZ firstly agree a framework for changing the organisational culture , and then systematically introduce the new reward packages on a staged implementation basis.

7.1.3.2 A Possible Framework for Managing the Change Process

This framework is designed to assist the process of the fundamental change in the manner in which the BDZ organisation will conduct its business.

Change will only come about through the will of the whole organisation. Everyone must believe that it is necessary and possible.

It is the planning , implementation and monitoring of this conversion from an old State run Railway into a series of separate free-standing businesses.

It involves an extensive training exercise to gain commitment, change skill levels and attitudes.

The whole task needs to be planned , co-ordinated and monitored in a professional manner.

It needs adequate Human Resources Department support. (See Section 7.1.6 of this report Personnel and Training Organisation)

FRAMEWORK OF THE MAJOR TASKS OF STRATEGIC CHANGE MANAGEMENT

1. CLARIFYING THE AIMS OF THE NEW BDZ ORGANISATION.

- Commercialisation
- The need to meet new Financial Targets
- The establishment of a new relationship with Government
- The process has started with the World Bank Sponsored Training of the Top managers

- A draft Policy Statement should be developed by the Top Management Team of BDZ

2. DEVELOPING CONCERN AND ENSURING UNDERSTANDING OF THE ISSUES

- Develop understanding and concern among the key managers immediately below DDG level.
- Two-way communication meetings with immediate subordinates
- Full survey of staff attitudes
- Must get full participation and commitment
- Need to accept that not all staff will feel committed

- 3. ENCOURAGING PARTICIPATION IN THE SOLUTION TO THE PROBLEMS**
- Need the ideas of the staff on what should be done - particularly in their own areas of the organisation
 - This will almost certainly bring forward the need for a motivational pay System
 - This process will increase the commitment of the staff
 - Not all ideas will be acceptable or practical rejections will need to be dealt with sensitively
 - The two-way process should continue down to the level of Senior Supervisor
 - When new approaches and new tasks are identified , new training needs will be identified.
- 4. CHOOSING, PLANNING AND IMPLEMENTING THE CHANGES**
- After listening to all the views, the detailed changes are approved
 - If the problems of the Organisation have been understood and the new aims accepted then the views of the staff should coincide with those of management
 - Central Planning should be confined to the framework of the plans and implementation should be devolved as far down the organisation as possible
- 5. IMPLEMENTING THE CHANGES**
- The whole exercise needs to be seen to be lead by the Management Team of BDZ
 - There is a massive support exercise in monitoring the progress of the change, identifying, designing and implementing training programmes and ensuring that Senior Management are aware of when changes in direction are necessary. A large part of this should be carried out by the Personnel and Training Organisation

7.1.3.3 Pay and Incentive Schemes

7.1.3.3.1 Background of the current position on pay and incentive systems within BDZ.

The basis of the current pay system is contained within Sections 3 and 4 of the Collective Labour Contract.

These conditions are largely in accord with the payment conditions that apply in Railways across the world, although some of the allowances that are currently being paid do not appear to have been adjusted in line with inflation.

The surprising thing about the BDZ payment system is the extent to which the basic payroll costs are contained within base salary.

The following chart shows the position for the first 3 Quarters of 1996.

A BREAK-DOWN OF SALARY FUNDS BY COMPONENTS FOR THE FIRST THREE QUARTERS OF 1996		
Elements	Size BGL	%
1. Basic Salary	4,440,325	66.8 (in relation to total)
2. Extra Pay	24,214	0.5
3. Additional Incentives (Up to 20%)	8,090	0.2
4. Difficult Labour Conditions Payments	157,823	3.6
5. Advance of Seniority	671,706	15.1
6. Night Shifts	236,615	5.3
7. Redundancy Compensation	85,167	1.9
8. Title	13,710	0.3
9. Overtime	2,853	0.1
10. Leave	710,930	16.0
11. Unused Leave Compensation	4,612	0.1
12. Compulsory Leave	19,741	0.4
13. On-call Duty	21,178	0.5
14. National Holidays	41,282	0.9
15. Notice Compensation	1,654	0.0
16. Other	32,182	0.7
17. Additional Retirement Insurance	86,430	1.9
18. Inflation Rate Adjustment	89,091	0.2
TOTAL Salary Funds	6,647,603	

This data is revealing for the indications that it gives on the limited use of incentives, with only items 2 and 3, amounting to less than 1% of the salary bill, appearing to be incentive linked.

7.1.3.3.2 Conclusions

Having reviewed the existing system the broad conclusions reached were as follows :-

- 1. There was very little opportunity to influence staff performance levels within the existing pay system.**
- 2. The old Pay Bands were very narrow and restrictive with percentages ranging from 10.5% down to 3.5%.**
- 3. The new Pay Bands introduced in the Spring of 1997 were even more narrow and restrictive with percentages ranging between 10.5% down to 1.8%.**
- 4. The contraction of the Pay Bands had further diluted the motivation for promotion as staff did not always consider that the small increase in salary was worth the increase in responsibility that accompanied the new post.**
- 5. Whilst the existing Appraisal system was well conceived it was not extensively used as there was insufficient scope within the Pay Bands to properly reflect the results within the individual pay rates.**
- 6. It was clear that it was necessary to provide the framework of a restructured pay, incentive and motivational system that would enable BDZ to develop a long-term approach to motivating their staff.**

7.1.3.4 Proposed principles of devising a new pay system for BDZ.

In developing a new pay and incentive based pay system the suggested steps involved are :-

- Step 1 . Rating the jobs and establishing relativities**
- Step 2 . Decide on appropriate pay rates or pay bands**
- Step 3 . Decide on method of increasing payment**

Step 1. Rating the jobs and establishing relativities.

The first task would be the establishment of a job evaluation system for all posts or groups of posts within BDZ. This is considered as highly desirable because any new pay structure should meet two basic objectives :-

- it should satisfy the organisation's current and foreseeable requirements
- it should satisfy the aspirations of employees for an understandable and 'felt fair' method of determining job relativities

It is unlikely that an ad-hoc system of agreeing grades would satisfy either of these objectives.

It is perhaps firstly necessary to understand the principles of Job Evaluation which are now set out :-

The principles of job evaluation schemes.

Job Evaluation is the term used for the systematic examination and assessment of jobs. Its purpose is to enable organisations to develop a rational and defensible basis for their pay structures.

There are two basic features of Job Evaluation that need to be understood at the outset. These are :-

- Job Evaluation is concerned with Jobs and not the people that do the job. The system concentrates on the prescribed content of the job and the normal performance demands that it would make on a normal worker. The evaluation process is not directly concerned with determining job pay but clearly this is seen by both Job Evaluation Practitioners and employees as an essential by-product of the process.

- The evaluation process involves the use of human judgement and as such every method is inevitably subjective. A properly devised system will reduce the element of subjectivity in making job comparisons by providing an assessment of the value of different types of work using a set of common criteria.

Experience of using these systems as a basis for job grading, over a number of years, has consistently shown that they improve employee confidence in the overall operation of the Company Pay and Grading system.

The job evaluation process is likely to involve 3 main stages and they determine the form and success of the exercise.

Stage 1 will be the gathering of data on each post or set of posts. This information is obtained by drawing up comprehensive **Job Descriptions**. The key elements in this are that the data is accurate and that it is presented in an intelligible manner that will enable the Evaluators to both understand the job itself and to sensibly compare it with other positions within BDZ.

This is perhaps the most critical aspect of the whole exercise and it is why the job descriptions need to be specific and understandable. Whilst the suggested format of the Job Descriptions for BDZ that is proposed later in this section may appear to be unnecessarily complicated and in some areas to have overlapping data it is crucial in ensuring that the evaluators fully understand the scope of the job and its impact within the organisation.

This will be a time consuming task for BDZ but the discipline of identifying exactly where specific authorities currently lie will pose real questions as to the appropriateness of the current organisational structure and may well cause revisions to be made in the organisation.

Current and comprehensive Job Descriptions also form the foundation of setting and monitoring the Objectives against which staff should be appraised and upon which, in turn, their performance pay should be based.

It is appreciated that there will be a temptation for Senior Managers to argue that the provision of specific Job Descriptions for their subordinates will inhibit the current flexibility they enjoy in allocating tasks to them on an 'as required' basis. Whilst this is a danger in a limited number of cases, experience shows that if there is a pay structure that provides adequate opportunity to reward initiative it need not be a problem.

Stage 2 is to decide on who is going to do the evaluation. Firstly it is clear that there needs to be an Evaluation Secretary whom in practice would control the operation of the system and it is recommended that this responsibility within BDZ should be located in the Human Resources organisation. (See Section 7.1.6 Below).

The role of this individual would be to administer the scheme and to give advice and guidance to the various Job Evaluation Panels that would be set up to adjudicate on both the initial evaluations and subsequent adjustments to jobs.

The composition of the Job Evaluation Panels themselves is a decision for BDZ and the options are between using a small team of Managers or to extend the involvement over a larger group and possibly include selective members of the BDZ Syndicates.

This would have the benefit of providing a balanced view across the organisation and make the results of the Job Evaluation more readily accepted by all employees

Stage 3 is the actual operation of the process. The key issue here for BDZ would be the time and cost involved in setting -up the procedure. It would almost certainly be necessary to employ Management Consultants to initially implement the system in BDZ but it should be possible to obtain funding for that aspect. If it can be shown that Job Evaluation is an important aspect in producing an acceptable Reward package that will improve staff Performance levels.

However, it is prudent to point out that the implementation of the scheme will certainly involve BDZ in a major cost in time for some of its employees including Senior Managers. The tendency is for them to be involved in the lengthy process of preparing and agreeing Job Descriptions or being leaders of the various implementation and evaluation Groups.

There will also be a considerable Training and Communication exercise necessary to both operate the scheme and to get staff to understand how it operates and to accept it.

The Practice of Job Evaluation.

It is not the intention to go into any detail on the many differing approaches that there are to Job Evaluation. The consultant's experience of Job Evaluation in a number of different Railway Systems has lead him to the conclusion that the non - analytical methods of job ranking, job classification and paired comparisons are not , in general, entirely suitable for Railway organisations because of the diversity of tasks involved within the Railway Industry. These methods tend to assess jobs as a whole ,assessing the relative value of one whole job against another and tend to be more suitable for less complex organisations or for making distinctions between the relative values of similar types of work.

In the case of BDZ there is a wide range of differing activities and it is considered that it will be necessary to use an analytical method that will be acceptable to explain to both staff and the Syndicates as to why some jobs are considered to warrant a higher Pay Band than others. This is particularly true where the new evaluation procedure produces a change in the existing grading relativities.

Analytical schemes , of which there are a number , look at the various elements within a job such as the skills involved, the actual responsibilities, the effort - both physical and mental and the working conditions. In this way jobs can be compared across the occupational families in a consistent manner.

By breaking down the job into its elements , the evaluation no longer takes the broad brush whole job approach but looks at a series of separate tasks and responsibilities each of which will be assessed as being worth a number of points . When these individual scores are totalled, they form the whole job score and can be compared with other jobs in the organisation.

This is a very simplistic explanation of what has become a quite sophisticated process but it is intended to give a broad indication of the Job Evaluation technique.

It is worth pointing out that these systems already operate in a number of different Railway organisations and a lot of them have been specifically tailored to meet the specific needs of the Railway Industry. It is suggested that it would be more sensible for BDZ to benefit from the experience of another Railway Operator rather than to try and pioneer a new scheme alone.

Operating the Job Evaluation System

The start of the process would be the creation of **comprehensive job descriptions** for all posts. We are probably looking at something like 200 to 300 different kinds of posts within the BDZ organisation

The process has already been started by Victor Heckmus of the Systra team who has launched an exercise to produce Job Descriptions for the top 200 or so Management posts within BDZ .

For Job Evaluation purposes the Job Descriptions should contain the information as under :-

Post details	Title, grade, location , pay rate Position in the organisation
Purpose of the job	Summary of the main objectives of the job (one or two sentences)
Dimensions of the job	Direct financial responsibility Indirect financial responsibility Staff responsibilities Other statistical data
Principal accountabilities	Should be limited to between 4 and 8 principal accountabilities such as :- Planning Organising Directing Innovating Budgeting These to be in addition to meeting the objectives within the job purpose.
Decision making authority	Authority levels Appointments Discipline Financial authorities
Report preparation	Written or verbal
Contact with others	Purpose nature, frequency Means of contact -within BDZ And other outside organisations
Most challenging parts of the job	One or two examples of specific objectives
Experience knowledge and qualifications	Skills required Training required Experience required

As explained under the section dealing with the Principles of Job Evaluation there are a number of different systems which are available but the analytical approach which is recommended for BDZ will require the basic information outlined above in the job descriptions.

The job evaluation system will produce a points score for each post. From this data it is then possible to rank all the jobs in the organisation in a league table.

This ranking is then examined against the current grading relativities and looked at to see there are no major anomalies , and adjusted where necessary .

This should probably include some examination of jobs that are common with other industries such as accounting , computing etc.

Once this aspect of the exercise is complete there should then be a list of posts or groups of posts in order of seniority.

Step 2. Deciding on pay rates or pay bands

Having created a job evaluation system for individually ranking each post or group of posts there are a number of different ways in which an overall salary structure could be formed. One method would be to follow the pattern of the existing BDZ Pay Groups where a group of individual positions with similar responsibility levels are linked together presumably for the benefit of administrative simplicity thus reducing the number of different Pay Bands to what may be seen as an acceptable level.

Whilst this is a relatively common approach and can be operated successfully it has the disadvantage of not reflecting job responsibilities in an exact fashion.

If, therefore, it is decided to proceed with the job evaluation approach it may be more sensible to create salary ranges for each of the individual JOB SCORES.

This would be a significant departure from current practice but despite enquiries I have been unable to ascertain that the Pay Groups themselves have any other purpose within the organisation, than to determine rates of pay.

The withdrawal of a progressively numbered Pay and Grading system may have the additional benefit of diluting any reluctance there might currently be for staff in the lower Pay Groups to accept responsibilities previously held by more senior staff.

The advantage of the proposed new system is that once the new duties were added to the job specification then it would produce a new job score that would in turn, through the Job Evaluation process, change the pay range to reflect the new responsibilities.

Assuming then that it is decided to proceed on the basis of individual JOB SCORES it is probable, depending upon which Job Evaluation system is adopted, that there could be perhaps 100 different scores produced for the whole BDZ organisation.

Having placed all the jobs into a framework and taken the decision to create pay bands for each job score the following factors need to be considered before attempting to allocate minimum and maximum salaries.

- The size of the payroll budget.
- The size of the pay bands to provide the optimum level of motivation. It is recommended that the spread of the Pay bands should be at least 10%.
- Consideration of the principle of overlapping pay ranges. It is possible that this could create problems and might be a difficult concept to present to the Syndicates. However, it is vital that any new Pay Structure provides the opportunity to adequately differentiate between the average and good performer and to do this sensibly by providing reasonable pay ranges will inevitably lead to overlapping ranges. From

discussions with a number of people within BDZ this appears to be an acceptable principle managerially.

- It will probably be necessary to make some pay comparisons with similar jobs outside BDZ. The examples cited are general comparisons with the MOT and specific comparisons with positions where there is strong competition for staff such as for computing specialists, lawyers, accountants etc...
- It is sensible to try and include as many of the existing allowances as possible within the basic pay. Such areas as shift enhancements. This will reduce pay administration and increase basic salaries. Care will need to be taken to ensure that the consolidated salaries do not result in increased costs.
- There is also the question of a fundamental change to the collective labour contract that will have to be negotiated.

Step 3. Decide on method of increasing payments

The first decision is the extent to which pay should be based on performance.

All the advice received from BDZ management is that performance should be a prominent factor in any new pay system. This is entirely consistent with the general trend in Pay Practice and very much in keeping with the philosophy of the recently issued European Union Green Paper entitled 'Partnership for a new organisation of Work'.

The only real debate is the extent to which performance levels should influence payments.

Views vary from 30% basic to 70% variable to the reverse depending upon the type of duties.

In general the principles that are recommended to be followed can be represented as under :-

1. Maximum possible percentage to be variable and performance dependent. (15 - 25%)
2. In general the more senior positions should have the higher variable percentage.
3. Jobs with a large routine production should be linked to an incentive scheme with up to 30% of their earnings based on performance.
4. Commercial staff who have the opportunity to grow the business should have their salaries linked to their success or otherwise in this field.
5. Additional payments to staff who improve their productivity.

How the pay system would operate.

On the assumption that there are no inflation indices operating at the time the intention would be to determine basic salaries for the following period (six months or a year).

In all cases these changes would be based upon the position of the individual within the pay band, their performance level as agreed through an appraisal system, and the amount of money available for redistribution.

In cases of 3, 4 and 5 above the salaries would be adjusted to reflect the appropriate results.

Other options for redistributing annual pay increases.

1. Firstly there is the straight permanent increase or decrease in pay. This would be based on performance and the cost of living adjustment (inflation indices)
2. An alternative approach would be to pay a one-off bonus based on company results and the performance of the individual.
3. Opportunities exist for a combination of both 1 and 2.

A possible interim solution.

The restructuring of the BDZ pay system is likely to be a long-term task if the principle of reviewing existing grading standards using a job evaluation system is pursued. It may be necessary to look at a quick-fix for the current BDZ pay system problems.

The approach that has been suggested is that there should be a 'rule of thumb' re-examination of the existing allocation of posts to the 22 pay groups. This should address some of the more serious current anomalies within the structure.

In view of the rejection of the previous proposal from the Dimitrov group any further review would need some clear guidelines on exactly what were the objectives and limitations of the exercise.

If this could be successfully completed quickly then a scheme could be developed for the payment of a monthly or 3 monthly bonus based upon the performance of both the company and the individual.

It is considered that the scheme could be refined to make the results specific to particular functions who would have to achieve their agreed objectives before qualifying for the distribution of the bonus money.

Once agreed the money could then be distributed to individuals within the function / department on the basis of their particular performance level within that period.

It clearly would be possible to develop a scheme on these lines but any system based on performance will need to be supported by an acceptable system (Performance Review) system to measure such performance levels of all staff.

This is likely to be the issue which delays the introduction of the scheme, as to make it work successfully will involve a considerable amount of training of the staff who have to undertake the Performance Reviews.

7.1.3.5 The role of appraisals or performance reviews.

The Background of Appraisals within BDZ.

In 1989 a new Payroll system was introduced. It was basically just for the determination of salaries. The system, devised by the Ministry of Economics and Planning, was only used once. It centred around the creation of a Job Description for each position which detailed the duties, the Educational Qualifications required and the necessary skills. Each post was then evaluated using an agreed Points system.

The individual employees were then assessed against the criteria for the posts and if they scored the same number or a higher number of points they were allocated to the position.

If their personal score of points was less than that of the post, they were either sent for training or found a position more suited to their qualifications and skills.

In 1991 a decree was issued from the Council of Ministers on Salaries. It required Employers to develop their own pay systems as opposed to the common use of the National Pay system. BDZ developed its own system based on an assessment of the responsibilities of individual positions and negotiated with the Syndicates on the creation of new Pay Groups.

The allocation of staff to specific salaries within these new Pay Groups was by way of individual Personal Appraisals. The Regions were left to operate this system as they felt appropriate. In addition to qualifications and skills there was some emphasis placed on actual performance levels.

Any performance appraisal conducted would be by the individual's immediate supervisor.

This system is still officially in operation but because of the lack of any real promotion system or the opportunity to meaningfully differentiate between good and bad performance within the pay scales, it tends not to be regularly used except in the case of particularly bad performers.

The conclusion is that there is no qualitative system of personal appraisals currently operating within BDZ and this is reflected within the current Company culture.

The only documented form of appraisal that has been so far identified within the BDZ system is in relation to the procedures for the selection for Redundancy.

This system is based on two factors, qualifications and level of performance.

The operation of the system, a variation of which was used in the recent staff reduction exercise is relatively detailed.

The original summary sheet can be found below :-

INFORMATION SHEET															
for the Assessment of the Qualification and the Level of Performance (Labour Results)															
of the Employees To Be Made Redundant in the _____ District															
Order N	First, Second, Family Name	Job Title	QUALIFICATION			LEVEL OF PERFORMANCE (LABOUR RESULTS)							FINAL ASSES- MENT C. 10 + C. 15		
			Euca- tion	Know- ledge	Skills org	Good org	Other indices	Years of ser- vice	Total asses- ment	Meet- ing dead- lines	Quali- ty	Volume of work		Other indices	Total asses- ment
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

In advising on the application of a new Performance Review System it firstly has to be appreciated that it is unlikely that one system would be appropriate for all the different groups of staff within the BDZ system. Whilst the principles may well be similar for all types of review, the approach to measuring actual levels of performance will inevitably differ between staff employed on repetitive Production activities and those dealing with the more sophisticated managerial tasks.

In a number of cases it will be possible to link payments to production oriented staff to the achievement of specific production targets. This approach would clearly not be appropriate for the more complex jobs.

For these reasons the rest of this Section concentrates on the principles that should be followed for the Performance Review of Managerial staff and it should be possible to refine the format for those staff where a simpler approach would be more suitable.

A PROPOSED PERFORMANCE REVIEW SYSTEM FOR BDZ

AN OPEN REVIEW OF PERFORMANCE WITH THE IMMEDIATE MANAGER

AN OPPORTUNITY TO DISCUSS THE RESULTS WITH A SECOND OR AN INDEPENDENT MANAGER

REVIEWS TO BE HELD AT INTERVALS CONSISTENT WITH UPDATING PAY

A FOCUS ON SETTING CLEAR MEASURABLE OBJECTIVES

A PERFORMANCE RATING ALLOCATED AT EACH REVIEW AND USED FOR SALARY ADJUSTMENT

A SEPARATE TRAINING AND DEVELOPMENT REVIEW EVENTUALLY LINKED TO A CAREER PLANNING SYSTEM

Each of these areas is now briefly explained.

AN OPEN REVIEW OF PERFORMANCE WITH THE IMMEDIATE MANAGER.

The emphasis here is that the process needs to be open and honest. This is not always easy as there is often a reluctance on the part of close colleagues to face up to difficult issues that need to be raised with subordinates upon whom they are reliant. During discussions on this issue with BDZ staff the view was consistently expressed that this would not be an insuperable problem for Bulgarian Railway staff.

It is important that employees appraise their immediate subordinates as this is the relationship that should enable real strengths and weaknesses to be identified. The counter to this, is of course, that it is in these close relationships where prejudices can sometimes surface.

AN OPPORTUNITY TO DISCUSS THE RESULTS WITH A SECOND OR AN INDEPENDENT MANGER.

Because of the possible dangers outlined in the previous section it is important that the process embraces the opportunity to include the views of a second assessor. The preferred option would be for this individual to be the next higher manager (the bosses boss) as this individual is likely to know the Appraisee and the Appraiser in a direct working sense. In certain cases, however, the second individual could be out with the immediate Department.

REVIEWS TO BE HELD AT INTERVALS CONSISTENT WITH UPDATING PAY

The Review should be a continuous process with periodic recording of the results on a formal basis. However, for BDZ purposes it may be necessary to determine progress on a more regular basis.

A FOCUS ON SETTING CLEAR MEASURABLE OBJECTIVES

This is the area that will probably cause the most difficulties. The aim should be for the individual and their Manager to agree on the key areas of the Appraisee's job and to identify the principal objectives that measure the progress made.

Guidelines for setting these objectives could be :-

Objectives should cover both what is done and how it is done

When setting objectives it should be assumed that the basic requirements of the job are being met.

They should emphasise the key improvements that are being sought.

Objectives should centre around performance measures, not just activities. Performance measures usually contain one or more of the following :-

- Quantity - How many, much of...
- Quality - How good is something.
- Duration, Timescale - How long should something take
- Frequency - How often something should happen
- Financial - How much should something cost or earn

- In establishing the objectives they should specifically relate to the authorities of the individual. For BDZ this should have the impact of continuous review of the organisation, developing management responsibility and delegating authorities down through the organisation.
- Wherever possible objectives should include specific targets for achievement of the objectives.
- Establishing objectives should help to generate enthusiasm and commitment.
- Particularly for the last reason it is , therefore , important that objectives are :-
 Agreed between both parties
 Subject to sensible discussion and understanding of what the constraints are on the ability of the individual to achieve them.
 Achievable.

A PERFORMANCE RATING ALLOCATED AT EACH REVIEW AND USED FOR SALARY ADJUSTMENT.

This is the climax of the whole procedure and there are a number of differing systems for allocating Performance Ratings dependent upon the level of fine tuning that it is wished to include within the salary adjustment process.

Experience tends to suggest that a system that has too many performance graduations can quickly lose its credibility with the staff .

A SEPARATE TRAINING AND DEVELOPMENT REVIEW EVENTUALLY LINKED TO A CAREER PLANNING SYSTEM.

This follows naturally upon the operation of Performance Review system as individuals regularly failing to achieve their objectives may well require additional training to help them cope with their current or developing responsibilities.

Finally it cannot be overemphasised that the successful introduction of any new Performance Review system must be accompanied by a well - devised training programme for the Reviewers and a comprehensive communication exercise for the Appraisees.