REPORT OF THE

COMPTROLLER AND AUDITOR GENERAL OF INDIA

FOR

THE YEAR 1984-85

UNION GOVERNMENT (RAILWAYS)

ERRATA

Page No.	*Column No.*	*Line No.*	*For*	*Read*
(i)	Heading	1	TABLE CONTENTS	TABLE OF CONTENTS
(iii)	1	6	transcations	transactions
(iii)	2	8	Lonvala	Lonavla
1	2	1 from bottom	(Railway)	(Railways)
3	2	9 (Table Col. 4)	1293.75	1293.75*
6	1	7 from bottom	guage	gauge
7	—	10 (Table Col. 4)	551.3	551.8
12	2	29	(2.11 crores)	(Rs. 2.11 crores)
13	2	2 from bottom	targest	target
14	1	31	(9.10 crores)	(Rs. 9.10 crores)
21	1	15	af	of
21	2	22	satissfactory	satisfactory
22	1	14 from bottom	fall	full
22	1	5 from bottom	straightway	straightaway
22	2	28	the Central Railway Administration alone had	resulting in overpayment of Rs. 24.58 lakhs.
23	2	15-16	wagons single locomotive	wagons by since locomotive
24	2	6 from bottom	wagons	wagon
26	2	32	registration	registrations
27	2	18	favoure	favoured
29	1	3	estimates	estimate
30	1	7	GR kms.,	GT Kms.,
30	1	10 from bottom	crıores	crores
33	1	11	substantions	substations
40	2	26	to mention	no mention
41	1	4	firm was,	firm, was
42	1	30	foundation	foundations
42	1	4 from bottom	coats	costs
43	2	27	of account of	on account of
48	2	2 from bottom	there	these
49	1	13	52.3	58.3
51	1	21	contrctors	contractors
51	2	6	of the rate	at the rate
52	1	11	foreseable	foreseeable
53	2	23	Baralkot	Bagalkot
53	2	23	Basayanna	Basavanna
56	1	17 from bottom	in decision	indecision
58	1	19 from bottom	faciilties	facilities
59	2	9 from bottom	Ad ninistartion	Administration II
60	1	20	meantice	meantime
62	2	9	lines	linen
62	2	19	shar	share
65	2	9	necessarilly	necessarily
67	2	22 from bottom	domicillary	domiciliary
69	—	(Table Col. 4)	July 1979	July 1970
70	1	5	want of sanction	for want of sanction
73	1	20	qualification	quantification
73	1	25	Railways	Railway
73	2	11	Rs. 2500	Rs. 1000
82	—	Col. No. of table-Col. 5	4	5

S/14CAG/85

REPORT OF THE

COMPTROLLER AND AUDITOR GENERAL OF INDIA

FOR

THE YEAR 1984-85

UNION GOVERNMENT (RAILWAYS)

TABLE CONTENTS

	Paragraph	Page
Prefatory Remarks		(iii)
CHAPTER I—Railway finances and comments on Appropriation Accounts 1984-85 and other connected documents		
Financial Results	1	1—2
Railway Funds	2	2—3
Revenue Receipts	3	3—4
Revenue Expenditure	4	4—6
Sixth Five Year Plan of the Railway	5	6—10
Budgetary Control	6	10—14
Discontinuance of the collection of Terminal Tax under Terminal Tax on Railway Passengers Act, 1956	7	14—15
CHAPTER II—BOXN Wagons	8	16—27
CHAPTER III—Railway Electrification	9	28—33
CHAPTER IV—Metropolitan Transport Project, Calcutta	10	34—38
CHAPTER V—Purchases and Stores		
Overpayment due to retrospective revision of price of Casnub bogies	11	39—40
Excess payments to a foreign firm	12	40—41
Western and South Central Railways—Non-commissioning of electronic-in-motion weigh bridges	13	41
Integral Coach Factory—Delay in setting up the facilities for the spring shop expansion scheme	14	41—42
Southern Railway—Idling of machines in the cylinder liner plating shop	15	42—43
Central and Northern Railways—Purchase of electricity	16	43—44
Central Railway—Avoidable expenditure on the use of anti-friction white metal grade 84	17	44
Southern Railway—Purchase of brake blocks for EMU coaches	18	44—45
South Central Railway—Loss due to purchase of sub-standard material	19	45—46
Southern Railway—Non-recovery of difference of cost of stores from a defaulting firm	20	46
South Central Railway—Avoidable procurement of passive reflector	21	46—47
Northeast Frontier Railway—Unintended benefit to a coal handling contractor	22	47—48
Handling and transit losses of coal on Railways	23	48—49
CHAPTER VI—Works		
Central Railway—Construction of third line on the South East Ghat Section between Karjat and Lonavla	24	50—52
Northeast Frontier Railway—Overpayments to contractors due to irregular execution of works	25	52—53
Southern Railway—Provision of additional lines in a marshalling yard	26	53
South Central Railway—Overpayment to a contractor—bridge construction work	27	53—54
South Eastern Railway—Blocking of capital due to injudicious commencement of work on a road-overbridge	28	54
Western Railway—Payment of price escalation at a higher rate	29	54
Western Railway—Avoidable expenditure on additional traffic facilities	30	55
Southern Railway—Delays in execution of staff welfare works	31	55—57
Southern Railway—Construction of staff quarters at Podanur	32	57—58
South Central Railway—Delay in construction of staff quarters and recovery of risk cost	33	58
South Eastern Railway—Non-utilisation of an assisted siding	34	58—59
Southern Railway—Non-utilisation of goods shed facilities	35	59
CHAPTER VII—Land		
Central Railway—Licensing of railway land for shops at Pune	36	60
Central Railway—Non-recovery of rent of commercial plots leased to outsiders	37	60—61
Central Railway—Licensing of railway land under tehabazari scheme	38	61

CHAPTER VIII—Earnings

Western and Eastern Railways—Tourist special trains—the 'Palace on wheels' and the 'Great Indian Rover'	39	62—64
North Eastern Railway—Loss of revenue due to short calculation of distance and non-revision of siding charges .	40	64
Western and North Eastern Railways—Loss of revenue due to adoption of incorrect distance for levy of freight	41	64—65
Western Railway—Non-recovery of charges for excess loading of animals.	42	65—66

CHAPTER IX—Other topics of interest

Delay in recabling of electric locomotives and failure of power cables in locomotives	43	67
Eastern, Northern, Central, South Central, Southern and Western Railways—Working of Railway Hospitals	44	67—72
Central, South Central and Western Railways—Working of Public Relations Organisation	45	72—73
Southern Railway—Avoidable expenditure on maintenance of crew rest vans	46	73—74
South Eastern Railway—Payment of penalty charges due to delay in remittance of road tax	47	74
Recoveries at the instance of Audit	48	74
ANNEXURES		75—85

PREFATORY REMARKS

This Report has been prepared for submission to the President under Article 151 of the Constitution. It relates mainly to matters arising from the Appropriation Accounts of Indian Railways for 1984-85 together with other points arising from audit of the financial transcations of the Railways.

The cases mentioned in this Report are among those which came to notice in the course of test audit during the year 1984-85 as well as those which had come to notice in earlier years but could not be dealt with in previous Reports; matters relating to the period subsequent to 1984-85 have also been included, wherever considered necessary. The Report includes, among others, reviews on BOXN wagons, Railway Electrification, Metropolitan Transport Project, Calcutta and construction of third line on the South East Ghat Section between Karjat and Lonvala and comments on purchases and stores, execution of works, earnings, etc.

CHAPTER I

RAILWAY FINANCES AND COMMENTS ON APPROPRIATION ACCOUNTS 1984-85 AND OTHER CONNECTED DOCUMENTS

1. Financial Results*

1.1 The table below compares the revenue receipts, expenditure and surplus as a result of Railway operations together with the budget anticipations for 1984-85 and the actuals for the previous year :

(Rs. in crores)

	Actuals 1983-84	Budget 1984-85	Revised Estimates 1984-85	Actuals	Variation with reference to Budget Estimate
	2	3	4	5	6
1. Revenue Receipts	5089.06	5566.76	5497.29	5469.09**	—97.67
2. Revenue Expenditure	4710.11	5146.76	5288.29	5198.99**	+ 52.23
3. Net Revenue (1—2)	378.95	420.00	209.00	270.10**	—149.90
4. Dividend to General Revenues	423.70	490.00	475.00	465.69@	—24.31
5. Revenue Surplus (+)/Deficit (—)	—44.75	—70.00	—266.00	—195.59@	—125.59

*A summary of the salient indicators of financial and operating performance of the Railway for each of the years from 1980-81 to 1984-85 is given in Annexure-I.

**Includes subsidy (Rs. 100.43 crores) on account of commercial (Rs. 93.41 crores) and strategic (Rs. 7.02 crores) lines (details in Annexure-II).

@Shortfall in dividend payment amounting to Rs. 195.59 crores transferred to Deferred Dividend liabiilty from 1978-79 onwards.

Overall performance with reference to Budget

1.2 Ministry of Railways (Railway Board) had budgeted for transportation of 245 million tonnes of goods (Revenue earning). This anticipation was not realised as goods traffic that actually materialised during 1984-85 was 236.4 million tonnes; there was a shortfall of 8.6 million tonnes. Earlier, due to sizeable reduction in the quantum of goods traffic *vis-a-vis* budgeted, the Railway Board laid down lower target of 237 million tonnes of goods. The anticipated revenue receipts, both from goods and passenger traffic, were also scaled down from Rs. 5567 crores originally budgeted to Rs. 5497 crores. However, the actual receipts (Rs. 5469 crores) were still lower due mainly to shortfall in goods traffic (cf. paragraph 3).

1.3 The revenue expenditure exceeded the Budget estimates by Rs. 52.23 crores mainly on account of increased expenditure on repairs and maintenance of permanent way and works (Rs. 37.80 crores), operating expenses under traffic and fuel (Rs. 58.79 crores) offset by saving due to less repairs to carriages and wagons (Rs. 31.49 crores) and other minor variations (Rs. 12.87 crores). The Ministry of Railways (Railway Board) provided additional funds of Rs. 141.53 crores at revised estimate stage. The actual excess amounted to only Rs. 52.23 crores. Thus there was overestimation of the additional fund requirement to the extent of Rs. 89.30 crores. Similar overestimation of funds at the Revised estimate stage was noticed in the previous two financial years 1982-83 and 1983-84 also and these were to the extent of Rs. 17.56 crores and Rs. 52.74 crores respectively [cf. para 1.3 of the Report of Comptroller and Auditor General of India for the year 1983-84— Union Government (Railway)].

1.4 As a result of shortfall in the anticipated earnings and increased revenue expenditure mentioned above, the net revenue declined steeply from the budgeted amount of Rs. 420 crores to Rs. 270.10 crores during the year. The Railways, as in previous year, could not, therefore, discharge their full dividend liability of Rs. 465.69 crores calculated in accordance with the recomendations of the Railway Convention Committee, 1980. The shortfall of Rs. 195.59 crores was transferred to Deferred Dividend liability for 1978-79 and onwards. As there was no surplus, the Ministry of Railways (Railway Board) had to borrow Rs. 62.61 crores to meet the expenditure chargeable to the Development Fund.

1.5 The Railways did not discharge the dividend liability of Rs. 63.49 crores due at the end of 1984-85 on expiry of the moratorium period of the five years after opening of certain new lines as income from these lines was insufficient. Besides, the accrued liability on the lines which had not completed the moratorium period at the end of 1984-85 worked out to Rs. 71.92 crores. Thus, deferred dividend amounting to Rs. 135.41 crores is due to Union Government as contingent liability.

1.6 Mention was made in para 1.6 of the Report of the Comptroller and Auditor General of India for the year 1983-84—Union Government (Railways) that assessment of the final quantum of dividend relief on unremunerative branch lines was pending from 1969-70 onwards. Although the Railway Board prescribed the method of calculation of the relief in March 1983, the Northeast Frontier and South Eastern Railways only have so far (November 1985) finalised the assesment of dividend relief. The seven Zonal Railways are yet to finalise their assessment of the final quantum of dividend relief on the capital cost of their branch lines. Consequently, claim for dividend relief continued to be provisional during 1984-85, the relief claimed being Rs. 5.44 crores on the capital outlay of Rs. 96.06 crores for operating 140 unremunerative branch lines.

1.7 The indebtedness of the Railways towards Deferred Dividend liability to the Union Government rose from Rs. 349.57 crores at the end of 1983-84 to Rs. 545.16 crores at the end of 1984-85. The total indebtedness due to Government on account of deferred dividend including dividend on new lines completing moratorium and loans to meet expenditure from Development Fund stood at Rs. 945.01 crores at the end of March 1985.

2. Railway Funds

2.1 The table below indicates the position of the various funds at the end of 1984-85.

(Rs. in crores)

	Opening balance as on 1-4-1984	Credits during the year	Withdrawals during the year	Closing balance as on 31-3-1985
Revenue Reserve Fund (RRF) .	0.47	0.02	..	0.49
Development Fund (DF) . .	0.71	62.66*	58.99	4.38
Depreciation Reserve Fund (DRF) .	122.10	864.26	797.53	188.73
Pension Fund (PF)**	445.52**	264.89	278.15	432.26
Accident Compensation, Safety and Passenger Amenities Fund (ACSPF). . .	27.95	10.39	25.03	13.31

*Represents loan taken from General Revenues (*cf.* para 1.4) and interest (Rs. 0.05 crore) accrued on the final balance during the year.

**Closing balance of 1983-84 was Rs. 428.25 crores; after taking into account Rs. 17.27 crores representing transfers without financial adjustment, the correct closing balance works out to Rs. 445.52 crores at the end of 1983-84.

2.2 *Development Fund*

The Ministry of Railways (Railway Board) had been taking loan from General Revenues for meeting outlay on works chargeable to the Fund as the revenue surpluses as and when appropriated to the Fund were inadequate. During 1984-85 also a loan of Rs. 62.61 crores (Rs. 37.78 crores for outlay on works and Rs. 21.22 crores for payment of interest on outstanding loans) (aggregating to Rs. 336.36 crores) was taken from General Revenues.

2.3 *Pension Fund*

Constituted in 1964 to provide for pensionary liabilities of Railway employees this Fund was to be financed on the basis of actuarial calculations. However, there had been no post 1974 actuarial calculations in spite of substantial liberalisation of pension scheme during recent years (cf. paragraph 4.3(iv) and 2.1 of the Reports of the Comptroller and Auditor General of India—Union Government (Railways)

1979-80 and 1981-82 respectively). The annual contribution, Rs. 225 crores, from Railway Revenue and Rs. 4 crores from the Railway capital account (Railway Production Units) continued to be with reference to the trend of actual withdrawals from the Fund and increase in the number of pensionable staff in service. A sum of Rs. 35.89 crores representing interest on the Fund balance and transfers from Contributory Provident Fund was also added to make up a total credit of Rs. 264.89 crores to the Fund in 1984-85. But the withdrawals from the Fund (Rs. 278.15 crores) is more by Rs. 13.26 crores resulting in a minus accretion thereto during 1984-85 for the first time. This itself justifies the need of financing the Fund on the basis of actuarial calculations.

2.4 *Accident Compensation, Safety and Passenger Amenities Fund (ACSPF)*

This Fund was set up on 1st April 1974 to meet payments necessitated by accident compensation and expenditure on works of passenger amenities and operational improvements connected with safety of travel. The withdrawals from the fund during 1984-85 were Rs. 25.03 crores as compared to Rs. 22.13 crores in 1983-84 due to more payment of compensation in 1984-85 (Rs. 1.60 crores against Rs. 1.05 crores in 1983-84) and increased expenditure on safety works (Rs. 23.43 crores in 1984-85 against Rs. 21.08 crores in 1983-84). The fund had a closing balance of Rs. 13.31 crores on 31st March 1985.

3. Revenue Receipts

3.1 The table below compares the Revenue Receipts with the budget anticipation for the year 1984-85 and actuals for the previous year :

(Rs. in crores)

Actuals 1983-84	Particulars	Budget 1984-85	Actuals 1984-85	Variation with reference to Budget
1	2	3	4	5
	Passenger earnings			
146.30	Upper class	189.00	165.07	(—)23.93
1207.25	Lower class	1319.00	1293.75	(—)25.25
1353.55	TOTAL	1508.00	1458.82	(—)49.18
166.56	Other Coaching earnings	171.00	179.75	(+)8.75
3353.50	Goods earnings	3689.00	3602.42	(—)86.58
118.86	Sundry other earnings	117.00	124.65	(+)7.65
(—)6.23	Suspense	(—)28.00	(—)6.87	(+)21.13
4986.24	Gross Traffic receipts	5457.00	5358.77	(—)98.23
9.82	Miscellaneous receipts	10.26	9.89	(—)0.37
93.00	Subsidy from General Revenues on Account of dividend concessions	99.50	100.43	(+)0.93
5089.06	TOTAL Revenues	5566.76	5469.09	(—)97.67

*Includes an amount of Rs. 1.89 crores received from Defence Department for which class-wise details are not available.

3.2 *Passenger traffic*

The Budget for 1984-85 anticipated a negative growth of passenger traffic in terms of passengers carried but assumed an increase (3.2 per cent) in terms of passenger kilometres as compared with previous year, 1983-84 to fetch an additional earnings of Rs. 147 crores after taking into account adjustment in fares proposed in the Budget as may be seen from the following table :

	Revised Estimate 1983-84	Actual 1983-84	Budget 1984-85	Actual 1984-85	Percentage variation with reference to Budget 1984-85
1	2	3	4	5	6
1. No. of passengers (millions).	3268	3325	3267	3333	+2.0
2. Passenger kilometers (millions)	214934	222935	221964	226582	+2.1
3. Earnings (Rs. in crores)	1361	1354	1508	1459	(—)3.2

Though the passenger traffic both in terms of numbers and passenger kilometers, exceeded the budget anticipations, the earnings fell short by Rs. 49 crores.

3.3 Goods earnings also fell short of Budget anticipations by Rs. 86.58 crores. A commodity-wise break up of the originating revenue earning goods traffic is

detailed below :

(Figures in million tonnes)

Actual 1983-84	Commodity	Budget estimate 1984-85	Actuals 1984-85	Variation with reference to Budget
88.97	Coal	95	91.58	(—)3.42
21.74	Raw materials to Steel Plants	26	22.59	(—)3.41
24.57	Food grains	22	20.78	(—)1.22
15.55	Cement	15	16.89	(+)1.89
7.80	Pig Iron and finished steel from steel plants	10	8.22	(—)1.78
9.07	Iron ore for export	12	11.06	(—)0.94
8.15	Fertilizers	9	12.21	(+)3.21
17.95	POL (Mineral oil)	18	18.17	(+)0.17
193.80	TOTAL (*i*) Bulk	207	201.50	(—)5.50
36.32	(*ii*) Other goods	38	34.95	(—)3.05
230.12	TOTAL Goods traffic (Revenue)	245	236.45	(—)8.55

There was a shortfall of 8.55 million tonnes in the originating traffic with reference to the level budgeted, the shortfall being over 3 million tonnes in case of coal, raw material to steel plants and other goods. However, as compared with previous years 1983-84, the Railways had carried 6.33 million tonnes of additional traffic mainly under bulk goods coal, iron ore for export, raw material to steel plants, fertilisers and cement. In case of Foodgrains, however, the tonnage loaded (20.78 million) during 1984-85 was less by 3.79 million than the previous years' level of 24.57 million mainly because of shortage of covered wagons and the Punjab agitation. The tonnage carried under other goods which are mainly high rated further declined from 36.32 million in 1983-84 to 34.95 million in 1984-85.

3.4 *Outstanding under Traffic Suspense*

3.4.1 The year under review witnessed a further increase of Rs. 6.87 crores over the previous year's figures of unrealised earnings under traffic suspense comprising mainly outstanding freight and objected debits as detailed below :

(Rs. in crores)

	As on 31st March	
	1984	1985
1. Admitted debits	2.87	3.83
2. Objected debits	16.29	19.05
3. Freight on consignments on hand	61.55	47.61
4. Freight on consignments not in hand	81.52	90.48
5. Wharfage and Demurrage	30.53	37.98
6. Miscellaneous including outstandings in Accounts Office Balance Sheet	11.85	12.53
	204.61	211.48
7. Increase over previous year	6.87	

The increase was mainly under freight on consignments not in hand (Rs. 90.48 crores against Rs. 81.52 crores in 1983-84). Major portions of this freight outstanding related to Nothern (Rs. 23.84 crores), Central (Rs. 21.38 crores) and Eastern (Rs. 12.84 crores) Railways. Large scale diversions of coal wagons to stations other than those originally written on the invoices and incorrect punching of the station code in the machine prepared abstract mainly contributed to the heavy outstandings.

3.4.2 The outstanding under the category 'objected' debits (item 2) had also increased from Rs. 16.29 crores in 1983-84 to Rs. 19.05 crores in 1984-85 the major share (Rs. 10.06 crores) being that of Northern Railway and Western Railway (Rs. 1.57 crores). These represented debits raised against the station staff due to errors in distance, rate, weight, classification on account of train load instead of wagon load rates, non-receipt of vouchers, shortage in cash etc., disputed by station staff.

3.4.3 During 1984-85, the total amount of demurrage/wharfage accrued including the outstanding at the beginning of 1984-85 was Rs. 205.95 crores. Of this, Rs. 77.12 crores was waived and Rs. 90.85 crores recovered leaving an outstanding wharfage of Rs. 37.98 crores at the end of 1984-85 as brought out against item 5 of the table below paragraph 3.4.1.

During the year 1983-84, while the amount of wharfage and demurrage waived was Rs. 71.47 crores that recovered was Rs. 95.16 crores.

4. **Revenue Expenditure**

4.1 The table below compares the Revenue Expenditure with the Budget anticipations for the year

1984-85 and the actuals for the previous year.

(Rs. in crores)

	Actuals 1983-84	Budget 1984-85	Actuals 1984-85	Variation from Budget	Variation from previous year
1. Ordinary working expenses	3628.96	4011.00	4071.17	+60.17	+442 21
2. Appropriation to :					
(*i*) Depreciation Reserve Fund	850.00	850.00	850.00	..	..
(*ii*) Pension Fund	185.00	225.00	225.00	..	+40.00
(*iii*) Accident Compensation, Safety and Passenger Amenities Fund	9.26	9.63	9.09	—0.54	—0.17
3. Miscellaneous	27.36	36.13	32.32	—3.81	+4.96
4. Open line works (Revenue)	9.53	15.00	11.41	—3.59	+1.88
TOTAL—Revenue Expenditure	4710.11	5146.76	5198.99	+52.23	+488.88

4.2 The increase in Revenue Expenditure over that of previous year (Rs. 488.88 crores) was primarily due to increased appropriation to Pension Fund, *vide* item 2(ii) of above table, more expenditure on repairs and maintenance of assets under Permanent Way, Rolling Stock and Plant and Equipment and more operating expenses on Traffic and Fuel, etc., as mentioned in the table below :

(Rs. in crores)

	1982-83	1983-84	Percentage increase over 1982-83	1984-85	Percentage increase over 1983-84
1	2	3	4	5	6
1. Administration	182.72	207.29	13.45	232.61	12.2
2. Repairs and Maintenance (Permanent Way, Rolling Stock, Plant and Equipment)	1241.63	1427.36	14.96	1611.80	12.9
3. Operating Expenses :					
(*i*) Other than Fuel (Traffic, Rolling stock etc.)	692.74	797.53	15.13	890.63	11.7
(*ii*) Fuel	763.61	854.45	11.90	959.52	12.3
4. Miscellaneous items including staff welfare and others	304.07	350.00	15.11	398.74	12.8
	(298.65)*	(342.33)*		(376.61)*	
5. Suspense	—5.42	—7.67	..	—22.13	..
6. Total Working Expenses	3179.35	3628.29	14.1	4071.17	12.2

*After excluding suspense.

4.3 *Operating Ratio*

While the revenue receipts increased by 7.5 per cent the revenue expenditure increased by 12.2 per cent as compared with the previous year 1983-84. As a result, the operating ratio—percentage of working expenses to earnings (or amount spent to earn a rupee)—of the Railways deteriorated further during 1984-85 as compared with previous years as shown below :

All Railways	1982-83	1983-84	1984-85
(*i*) Percentage (all gauges)	88.3	93.5	96.3
(*ii*) Amount spent to earn a rupee	0.88	0.94	0.96

4.4 The operating ratio of individual zonal Railways which make up the above index of operating performance during 1982-83 to 1984-85 are indicated below :

Railways	(Operating ratio—all gauges)		
	1982-83	1983-84	1984-85
Central	71.9	76.3	79.6
Eastern	109.9	114.8	119.0
Northern	83.0	89.0	92.9
North Eastern	148.7	174.4	187.4
Northeast Frontier	161.8	184.4	209.1
Southern	118.6	123.2	124.4
South Central	82.4	89.9	85.9
South Eastern	73.5	77.0	76.8
Western	77.2	78.5	82.7

The operating ratio of all Railways, except South-Central and South Eastern Railways, had been deteriorating continuously. The maximum deterioration occurred on the Northeast Frontier, North Eastern, Southern and Eastern Railways.

5. Sixth Five Year Plan of the Railways

Introduction

5.1 The basic objectives of the Railways Sixth Five Year Plan were to rehabilitate and consolidate their assets. This had become necessary because the replacement and maintenance of assets were relegated to background as a result of inadequate outlays during the previous years.

5.2 The anticipated expenditure during the Sixth Five Year Plan on renewal of track, bridges and other ancillary works, replacement of overaged locomotives, coaches and wagons as well as modernisation of workshops and sheds, replacement of machinery and plants was Rs. 3200 crores and was expected to be provided from their own resources, that is, from Revenue, Depreciation Reserve Fund, Development Fund. Besides, a sum of Rs. 1645 crores was provided for Railway Electrification and signal and telecommunication works, new lines, guage conversions, doubling and other traffic facility works, passenger and other Railway users' amenities, inventories and other plan heads. A separate provision of Rs. 255 crores was made for metropolitan projects outside Railways Plan heads. Against total anticipated plan outlay of Rs. 5100 crores, the actual outlay amounted to Rs. 6585 crores of which Railways contribution was Rs. 3314.20 crores.

5.3.1 The anticipated outlay, physical targets, actual expenditure and physical achievements under some of the major plan heads are mentioned in the table below :

Plan Heads	Targets		Achievements	
	Physical	Provision (in crores of rupees)	Physical	Expenditure (in crores of rupees)
1. Track Renewals :				
(*a*) Primary (km)	10000	500	7453	1070
(*b*) Secondary (km)	4000		2105	
2. Bridges	NT*	90	NT*	90
3. Rolling Stock :		2100		2355
(*a*) Locomotives :				
(*i*) Steam	..	..		
(*ii*) Diesel	402		632	
(*iii*) Electric	378		264	
(*b*) Coaches	5680		4938	
(*c*) Electrical multiple units	606		566	
(*d*) Wagons (in 4-wheelers)	80000		65942 (73028)$	
4. Workshop & sheds Machinery & plants	NT*	510	NT*	605
5. Railway Electrification (route km.)	2800	450	1522	423
6. Other Electrical works	NT*	20	NT*	43
7. Signal & Telecom. works	NT*	90	NT*	150
8. New Lines (km.)	700	380	669	324
9. Gauge conversion, doubling and other traffic facility	700	480	1387	776
10. Passenger & other Railway users amenities	NT*	25	NT*	5
11. Inventories	NT*	40	NT*	209
12. Other Plan heads		180		249
13. M.T.P	NT*	255		286
TOTAL		5100		6585

*N.T. — No target.

$Actually procureed were 73028 wagons but 65942 were placed on line.

5.3.2 The sources of finance provided by the Central Government and the Railways own resources were as under :

(Rs. in crores)

	1980-81	1981-82	1982-83	1983-84	1984-85	Total
1. By Central Government						
Budget	374	482	554	550	760	2720
Actual	644.2	657.2	602.7	572.3	794.2	3270.6
2. From Railways own resources						
Budget	276.6	498.0	583.0	792.0	890.0	3039.6
Actual	328.7	551.3	716.6	847.0	870.1	3314.2

5.3.3 Bulk of Railways own resources (Rs. 3019.8 crores out of Rs. 3314.2 crores) had come from Depreciation Reserve Fund by way of appropriation from Revenue. The balance was met from Development Fund (Rs. 160.1 crores), Accident Compensation and Passenger Amenities Fund (Rs. 85.4 crores) and Ordinary Revenue (Rs. 48.9 crores).

5.3.4 The Development Fund which is financed from Railway Revenue surplus had a minus balance (Rs. 5.19 crores) and a loan liability of Rs. 189.50 crores at the commencement of the Sixth Plan (April 1980). However, because of deficits during the years 1980-81, 1983-84 and 1984-85, the development expenditure had also to be met from loans from the Central Government to the extent of Rs. 100.2 crores out of Rs. 160.1 crores.

Track Renewals

5.4 The Plan provision (Rs. 500 crores) for track renewals was doubled (Rs. 1009 crores) keeping in view the rise in cost of track materials, but the actual expenditure (Rs. 1070 crores) exceeded the revised provision by Rs. 61 crores. However, in physical terms the achievements fell short of the anticipations as against the targeted primary track renewals of 10000 kms. and secondary track renewals of 4000 kms. the work done was only to the extent of 7453 and 2105 kms. respectively. Consequently, the arrears of track renewals increased from 13,100 kms. (7800 kms. primary and 5300 kms. secondary) at the commencement of the Sixth Plan (1980-81) to 20,306 kms. (11,320 kms. primary, 8,986 kms. secondary) at the end of the Plan (1984-85). The shortfall was attributed to increase in the price of rails and other track materials as well as inadequacy of funds.

Bridges

5.5 A sum of Rs. 48 crores (approximately) was carried over to 1980-81 for scheme/works already in progress. These included rebuilding and regirdering of six major bridges on the trunk routes of Eastern, North Eastern, Southern, South Central and South Eastern Railways at a cost of Rs. 42.05 crores. Besides, seven works of rebuilding and regirdering of major bridges at a cost of Rs. 43.44 crores were included by Eastern, North Eastern, Northeast Frontier and Western Railways during the Sixth Plan. Though the Plan provision of Rs. 90 crores was fully utilised by end of 1984-85, the Railways completed regirdering/strengthening of only three out of the six bridges carried over in 1980-81. The other three bridges—two on the South Central Railway and one on South Eastern Railway—are still (December 1985) in progress. The delays in the regirdering of bridges and rebuilding of the piers, etc. necessitated imposition of speed restrictions *cf.* para 6 of the Report of the Comptroller & Auditor General of India for the year 1982-83—Union Government (Railways).

The Railway Accident Enquiry Committee (1978) had identified 3553 major bridges as distressed at the end of March 1978. Out of these, only 2416 were rehabilitated upto end of March 1984, leaving a balance of 1867 bridges including further arisings (730). Speed restrictions (ranging between 5 km and 15 km) had therefore to be imposed on 282 bridges

5.6 *Rolling Stock*

5.6.1 The rolling stock (Locomotives, Coaches and Wagons) which were acquired during the Plan period

were almost adjusted against the overaged stock as detailed below :

	No. condemned	No. procured/placed on line	
		Replacement Account	Additional Account
1. Locomotives :			
(a) Steam	1908*	..	
(b) Diesel	21	417	215
(c) Electric	13	5	259
TOTAL	1942	422	474
2. Passenger & other Coaches.	4929	3697	1241
3. Electrical multiple (EMUs) Units.	66	127	439
4. Wagons (in terms of four wheelers)	72,593	46198.5	19743.5

*Overaged steam locomotives are replaced by Diesel/Electric Locomotives applying the ratio of 1 Diesel/Electric Loco for 2.5 steam locomotives condemned.

5.6.2 Due to further arising of overaged stock during the subsequent years and inadequate replacement thereof, there had been no significant improvement in the position of overaged passenger coaches and EMUs at the end of 1984-85 as compared with 1979-80 as mentioned below :

	Overaged stock as on	
	31st March 1980	31st March 1985
1. Locomotives :		
Steam	747	286
Diesel	1	12
Electric	19	19
2. Coaches	3,236	4,760
3. Electric multiple units (EMUs)	59	279
4. Wagons (in 4-wheelers)	38,014	23,395

5.6.3 According to Department of Railways (Railway Board), the conditions of passenger travel continued to be difficult and many demands for additional trains could not be met due to paucity of stock, inadequate terminal facilities and section capacity.

5.6.4 Out of 73,028 wagons procured during the Plan period, 42 per cent were of special type viz., BOXN wagons (30 per cent) and tank wagons (12 per cent) which have limited use as the former move in close circuits mainly for lifting coal and ore traffic and the latter for petroleum oil products (POL) in bulk. Though BOXN wagons were designed to carry more pay load at higher speeds, these anticipations did not fully materialise as brought out in paragraph 8 of this Report. The excess procurement of the tank wagons had also been commented in para 1 of the Advance Report of Comptroller and Auditor General of India for the year 1983-84—Union Government (Railways).

5.6.5 The new Diesel and Electric Locomotives placed on line were 632 and 264 respectively against the initial targets of 402 and 378 numbers respectively. In spite of increased holding of Diesel and Electric Locomotives, their availability to traffic was restricted owing to higher percentage of locos being under or awaiting repairs (19.06 per cent of Diesel and 23.53 per cent of Electric locos were under or awaiting repairs during 1984-85 against 14.19 and 15.82 per cent respectively in 1979-80).

Workshops and sheds, Machinery & Plant

5.7 A sum of Rs. 510 crores was provided for completing the ongoing schemes like the Wheel and Axle Plant, modernisation of workshops and sheds, provision of additional maintenance and P.O.H. facilities for Rolling Stock as well as the new works included in the Sixth Plan; the same was revised to Rs. 621 crores in January 1984. The actual expenditure was Rs. 605 crores to end of 1984-85. The Wheel and Axle Plant was expected to commence production from June 1982 as per the revised target. Against its installed capacity of producing 70000 wheels and 23000 axles per year, the production during 1984-85 was of 1904 wheels. The execution of first phase of modernisation of the four workshops, viz., Matunga (Central Railway), Lower Parel (Western Railway), Kancharapara (Eastern Railway) and Kharagpur (South Eastern Railway) at the cost of Rs. 52.43 crores did not bring out an improvement in the position of overdue POH as would be evident from the table below :

	Percentage of Rolling Stock over due POH		Percentage of Rolling Stock under or awaiting repair	
	1979-80	1984-85	1979-80	1984-85
Diesel Loco BG	3.77	5.60	14.19	17.97
Electric Loco BG	2.69	9.00	15.82	23.12
Wagons BG	19.04	14.52	4.43	5.85

Railway Electrification

5.8 The original allotment of Rs. 450 crores was reduced to Rs. 435 crores during 1984-85. However, the actual expenditure (Rs. 423 crores) was less than the reduced allocation. The additional route

km. energised during the Sixth Plan was only 1522 km. against 2800 km. envisaged. As brought out in Paragraph 9 of this Report dispersal of available resources over a large number of works resulted in patchy electrification. Further, the objectives of increasing line capacity and reduction in the use of steam and diesel locomotives through electrification of certain sections and consequent saving in working expenses remained unfulfilled due to delays in execution of electrification work which also resulted in escalation of cost.

New Lines

5.9 At the commencement of the Sixth Plan (1980-81) 29 new lines were under construction. A sum of Rs. 240 crores was required for their completion during the Plan period ; but Rs. 380 crores only were allotted for their completion and also for taking up 23 new lines (2200 km.—estimated cost Rs. 1152 crores) during this Plan period. Due to financial constraints, the provision was reduced to Rs. 314 crores ; against which the actual expenditure was Rs. 324 crores. Only 14 new lines had been opened for traffic of which 10 were only partially completed. Construction works on 48 new lines are in progress requiring Rs. 1320 crores for their completion ; 15 of these were sanctioned between 1969-70 and 1978-79. Certain instances of delays in the execution of such projects resulting in time and cost overrun and non-achievement of benefits envisaged in the Project Reports were mentioned in Para 2 of the Advance Report of Comptroller and Auditor General of India for the year 1983-84—Union Government (Railways).

The Public Accounts Committee (Seventh Lok Sabha) had observed in their 73rd Report that inordinate delays in completion of major projects undertaken by the Railways and the consequent heavy escalation in costs called for a policy decision for starting only such projects as could be completed within the available funds so that the benefit of these projects could reach the public at the earliest. Again, in para 11 of their 137th Report the Public Accounts Committee (Seventh Lok Sabha) recommended that Railways should examine the matter in depth and take a policy decision to start only such projects which could be completed within the available funds and that the target date of projects should be fixed realistically and that once fixed these should be strictly adhered to. Necessary policy decision in this regard is yet to be taken by the Ministry of Transport, Department of Railways, (Railway Board).

Metropolitan Transport Project (MTP)

5.10 Against an allocation of Rs. 255 crores, the actual expenditure incurred by the four Railway Metropolitan Transport Organisations at Calcutta, Bombay, Delhi and Madras was Rs. 286 crores, bulk of which (Rs. 247.81 crores) was incurred on the provision of the rapid transit system (under ground) between Dum Dum and Tollyganj (16.43 km.) in Calcutta. A review on Metropolitan Transport Project, Calcutta appears in paragraph 10 of this Report.

5.11 *Goods Traffic*

5.11.1 The Railway Board had assessed that by the end of Sixth Plan the Railways would have a capacity for carrying 283 million tonnes of goods traffic (including 23 million tonnes non-revenue i.e., Railways own traffic) against 245—250 million tonnes at the commencement of the Plan (April 1980). The Plan targets *vis-a-vis* actual loadings of certain revenue earning traffic during 1979-80 and 1984-85 are mentioned in the table below :

(In million tonnes)

	Actual loading (1979-80)	Forecast for 1984-85 on the basis of capacity based on plan provision	Actuals (1984-85)
1. Steel Plants Traffic :			
(*a*) Finished products	7.21	11.2	8.2
(*b*) Raw materials to steel plants.	20.75	28.2	22.6
2. Coal	61.97	83.7	91.6
3. Iron ore export	9.28	13.4	11.0
4. Cement	10.04	15.7	16.9
5. Food grains	18.35	23.9	20.8
6. Fertilisers	8.23	11.3	12.2
7. POL	14.27	18.6	18.2
8. Other goods	42.97	54.0	34.9
TOTAL REVENUE	193.07	260.0	236.4
9. Railway Material	24.77	23.0	28.3
GRAND TOTAL	217.84	283.0	264.7

While coal, cement and fertiliser traffic exceeded the forecast and there was marginal short fall in POL traffic with reference to the forecast, there were shortfalls in respect of 'Steel Plant traffic', 'Iron ore export', 'Food grains' and other goods. High rated traffic which fall under 'other goods' were carried to

the extent of 34.9 million tonnes as against 42.97 million tonnes during 1979-80; it was also 19 million tonnes short of the Plan forecasts for 1984-85. In spite of running of container services introduction of speed link express services and other marketing efforts, the traffic in other goods had been declining year after year.

5.11.2 *Passenger Traffic*

In terms of lead the passenger traffic increased by 14 per cent during 1984-85 as compared with 1979-80 but in terms of number it declined from 3505 million (during 1979-80) to 3333 million (during 1984-85) *i.e.*, by 5 per cent. This decline had been attributed to the diversion of short distance passengers to road.

5.12 *Financial Results.*—The financial position of the Railways as a result of the investments during the Sixth Five Year Plan (1980—85) progressed year after year as would be seen from the table below :

	At the end of 1979-80	Average for 1975—80	1980-81	1981-82	1982-83	1983-84	1984-85	Average for 1980—85
1. Capital at charge	5484.64	4838.83	6096.35	6698.05	7251.09	7567.80	8285.65	7179.79
Revenue Receipts	2404.41	2104.15	2703.48	3627.76	4483.32	5089.06	5469.09	4274.54
2. Revenue Expenditure :								
(*i*) Working Expenses	1912.12	1659.40	2270.99	2774.70	3223.03	3675.11	4123.99	3213.56
(*ii*) Appropriation to DRF	200.00	147.00	220.00	350.00	556.00	850.00	850.00	565.20
(*iii*) Appropriation to Pension Fund	65.00	42.90	85.00	100.00	150.00	185.00	225.00	149.00
TOTAL	2177.12	1849.30	2575.99	3224.70	3929.03	4710.11	5193.99	3927.76
3. Net Revenue :								
(*i*) With subsidy			127.49	403.06	554.29	378.95	270.10	346.78
(*ii*) Without subsidy	171.28	243.64	58.87	325.31	457.64	285.95	169.67	259.49
4. Return on capital at charge :								
(*i*) With subsidy	4.1	5.27	2.09	6.01	7.64	5.01	3.26	4.83
(*ii*) Without subsidy	3.1	5.04	0.96	4.95	6.31	3.78	2.05	3.61
5. Operating ratio	91.5	87.9	96.1	89.4	88.3	93.5	96.3	91.9
6. Dividend Due	293.53	230.29	325.36	356.47	435.98	423.70	465.69	401.44
7. Dividend paid	227.29	254.84	127.49	356.47	435.98	378.95	270.10	313.80
8. Surplus (+)/Deficit (—)	(—)66.24	(+)24.56	(—)197.87	(+)46.59	(+)118.51	(—)44.75	(—)195.59	(—)54.66

While the financial results of operation during the five year period, 1975—80 showed a net average surplus of Rs. 24.56 crores with average operating ratio as 87.9 the financial position deteriorated during the Sixth Five Year Plan (1980—85) which ended with net average deficit of Rs. 54.66 crores and operating ratio as 91.9 which is mainly because of disproportionate increase in working expenses and appropriations to Depreciation Reserve Fund and Pension Fund.

Consequently there were shortfalls in payment of dividend due to General Revenues during the years 1980-81 (Rs. 197.87 crores), 1983-84 (Rs. 44.75 crores) and 1984-85 (Rs. 195.59 crores). There being no surplus the Railways had to borrow from General Revenues for financing expenditure on works to be met from Development Fund.

The net effect of the financial results was that the return on capital at charge declined from 4.1 in 1979-80 to 3.26 per cent in 1984-85. The total indebtedness of the Railways to the General Revenues (on account of Deferred Dividend and loans for Development Fund) increased from Rs. 408.79 crores in 1979-80 to Rs. 945.01 crores in 1984-85.

6. Budgetary Control

6.1 While the Revenue and Plan expenditure figures mentioned in paragraphs 4 and 5 earlier are net of deduction and recoveries, the Grants and Appropriations approved by Parliament are for gross expenditure. The position of Voted Grants and Charged Appropriations for 1984-85 together with supplementary Grants/Appropriations obtained and the expenditure incurred is indicated below :

(Rs. in crores)

Particulars	1983-84		1984-85	
	Voted	Charged	Voted	Charged
1. Original Grants/ Appropriations.	8731.13	8.06	9672.27	38.86
2. Supplementary Grants/Appropriations.	410.48	30.28	205.19	0.67
3. Total Grants/ Appropriations.	9141.61	38.34	9877.46	39.53
4. Total Disbursements.	8750.10	15.04	9598.92	19.55
5. Saving (—) Excess (+).	—391.51	—23.30	—278.54	—19.98
6. Percentage of excess saving to total Grants/ Appropriations.	4.28	60.77	2.82	50.54

As in the previous year, the number of demands voted during the year was 16. The number of supplementary demands voted was 11 against 13 in the previous year.

A. Voted Grants

6.2 As seen from items 2 and 5 of table above in 1984-85, the entire supplementary Grants obtained (Rs. 205.19 crores) proved unnecessary as the saving Rs. 278.54 crores was much more than the supplementary grants. The aggregate saving of Rs. 278.54 crores in the Voted Grants was the net result* of saving of Rs. 284.81 crores under fifteen grants and excess of Rs. 6.27 crores under one grant. The reasons for saving and excess are analysed in the succeeding paragraphs :

(Rs. in crores)

(1) Grant No. 15	Final Grant	Actual expenditure	Saving	Percentage
Dividend to General Revenues, repayment of loans taken from General Revenues and Amortisation of over capitalisation.	438.93	291.32	147.61	33.63

*Details of final grant, actuals saving/ excess are given in Annexures III to V.

This grant is for appropriation of net Railway Revenue (i.e. after deduction of all items of revenue expenditure) for payment of (a) Dividend to General Revenues (b) Repayment of loans (alongwith interest thereon) taken temporarily from General Revenues to finance works chargeable to Railway Development Fund and (c) for appropriation of the balance to meet the Deferred Dividend liabilities etc.

The original grant of Rs. 438.93 crores was fixed on the basis of net revenue of Rs. 420.00 crores assessed at the time of Budget. At the revised estimate stage, the Ministry of Railways (Railway Board) reassessed the net revenue at Rs. 209.00 crores by anticipating a decrease (Rs. 211.00 crores) in net revenue during 1984-85. However, this shortfall in net revenue was over-assessed by the Ministry of Railways (Railway Board) by Rs. 61.11 crores which is indicative of the fact that the revenue and working expenses had not been realistically assessed even at the revised estimate stage (February 1985) (cf. para 1.3).

(Rs. in crores)

(2) Grant No. (2)	Final Grant	Actual Expenditure	Saving	Percentage
Miscellaneous expenditure (General).	32.03	28.09	3.94	12.30

The savings were mainly under sub-heads Miscellaneous Estabilshments (Rs. 0.89 crore) due mainly to non-materialisation of equipment of institutes and less expenditure under contingencies, Surveys (Rs. 0.69 crore) due to less survey work undertaken and slow progress on certain works and Miscellaneous Charges (Rs. 0.47 crore) due to non-receipt of debits from Indian Missions abroad. In addition Railways surrendered Rs. 1.61 crores at the final modification stage.

(Rs. in crores)

(3) Grant No. 3	Final Grant	Actual Expenditure	Saving	Percentage
General Superintendence and services (Original (Rs. 230.57 crores supplementary Rs. 12.33 crores).	242.90	233.63	9.27	3.81

A supplementary grant amounting to Rs. 12.33 crores was obtained in March 1985 mainly for payments of Additional Dearness Allowance, staff costs and contingent expenses etc. The Supplementary Grant proved unnecessary to the extent of Rs. 9.27 crores.

The savings were mainly due to less expenditure on salaries and wages (Rs. 1.86 crores), dearness allowance (Rs. 1.07 crores) and other staff cost and contingent expenditure on account of non-filling up of posts etc., under sub-heads 'Traffic management', 'General management including general management services, 'Financial management', 'Way and works management' and 'Rolling stock management'.

(Rs. in crores)

(4) Grant No. 6	Final Grant	Actual Expenditure	Saving	Percentage
Repairs and maintenance of carriages and wagons.	555.41	527.05	28.36	5.11

The actual expenditure of Rs. 527.05 crores was Rs. 28.36 crores less than the final grant of Rs. 555.41 crores. The saving was mainly under the sub-heads 'Wagons' (Rs. 6.62 crores), 'Carriages' (Rs. 4.48 crores), 'General services—train lighting and Air conditioning' (Rs. 2.61 crores) and 'Miscellaneous Repairs and Maintenance' (Rs. 1.57 crores) due to less expenditure on account of adjustment of wages and materials on POH (Intra and Inter Railway debits) etc. shown under 'Other Expenses' (Rs. 10.12 crores), less cost of materials (Rs. 7.36 crores). The highest saving occurred on South Eastern Railway (Rs. 5.98

crores) followed by Eastern Railway (Rs. 5.65 crores) and Central Railway (Rs. 4.72 crores).

(Rs. in crores)

(5) Grant No. 7	Final Grant	Actual Expenditure	Saving	Percentage
Repairs and Maintenance of Plant and Equipment (Original Rs. 246.16 crores, supplementary Rs. 17.12 crores).	263.28	256.22	7.06	2.68

A supplementary grant amounting to Rs. 17.12 crores was obtained in March 1985 mainly for payments of Additional Dearness Allowance, other staff costs, arrears of rental charges on P&T wires, increase in the cost of materials and other sundry expenses. The supplementary grant was proved to be unnecessary to the extent of Rs. 7.06 crores.

The saving of Rs. 7.06 crores was mainly under the subheads 'Plant and Equipment—Electrical' (Rs. 2.52 crores), 'Plant and Equipment—Mechanical' (Rs. 1.22 crores) and under other subheads of the grant (Rs. 3.32 crores). The saving occurred mainly owing to less expenditure on account of transfer of Intra and Inter Railway debits in respect of repairs and POH of Plants and Equipments classified under 'Other expenses' (Rs. 3.72 crores), less materials drawn from stock and less expenditure on direct purchase of stores (Rs. 2.35 crores) and aggregate of other minor savings (Rs. 1.49 crores). The highest saving occurred on Eastern Railway (Rs. 2.43 crores) followed by South—Eastern Railway (Rs. 1.19 crores).

(Rs. in crores)

(6) Grant No 8	Final Grant	Actual Expenditure	Saving	Percentage
Operating expenses —Rolling Stock and Equipment (Original Rs. 428.21 crores, supplementary Rs. 10.42 crores).	438.63	426.54	12.09	2.76

A supplementary grant amounting to Rs. 10.42 crores was obtained in March 1985 mainly for payments of Additional Dearness Allowance, other staff costs and increase in the cost of materials etc. The entire supplementary grant proved to be unnecessary as the saving (Rs. 12.09 crores) exceeded the supplementary grant obtained in March 1985.

The saving of Rs. 12.09 crores was mainly under subheads 'Carriage and wagons' (Rs. 3.25 crores) 'Steam Locomotive' (Rs. 2.62 crores), 'Traction' (other than Rolling stock and General Electrical Services) (Rs. 1.75 crores) and 'Diesel Locomotive' (Rs. 1.52 crores) due to over assessment of expenditure on account of increase in the cost of materials (Rs. 2.77 crores) and dearness allowance (Rs. 1.04 crores) and other expenses of (Rs. 5.22 crores). The maximum saving occurred on Eastern Railway (Rs. 4.89 crores) followed by South Eastern Railway (Rs. 1.98 crores).

(Rs. in crores)

(7) Grant No. 10	Final Grant	Actual Expenditure	Saving	Percentage
Operating Expenses —Fuel (Original Rs. 939.60 crores and supplementary Rs. 45.42 crores).	985.02	977.98	7.04	0.07

A supplementary grant amounting to Rs. 45.42 crores was obtained in March 1985 on account of revision in the price of coal and electricity and increase in the rates of freight and handling charges on HSD oil and staff costs. The supplementary grant was proved to be unnecessary to the extent of Rs. 7.04 crores. The saving of Rs. 7.04 crores was under the sub-heads 'Diesel Traction' (Rs. 2.64 crores), 'Steam Traction' (Rs. 2.29 crores) and 'Electric Traction' (2.11 crores) due to less expenditure on cost of material (Rs. 3.64 crores), less contractual payment (Rs. 2.87 crores) and other miscellaneous reasons (Rs. 0.53 crore). The maximum saving was on Central Railway (Rs. 4.18 crores).

(Rs. in crores)

(8) Grant No. 12	Final Grant	Actual Expenditure	Saving	Percentage
Miscellaneous Working Expenses (Original Rs. 233.99 crores and supplementary Rs. 18.19 crores)	252.18	239.32	12.86	5.1

A supplementary grant amounting to Rs. 18.19 crores was obtained in March 1985, mainly on account of anticipated increase in staff costs (Rs. 1.10 crores), increase in the cost of catering stores (Rs. 1.08 crores), other Expenses (Rs. 12.83 crores) and more debits under Suspense (Rs. 3.10 crores). The supplementary grant to the extent of Rs. 12.86 crores proved unnecessary. The savings were mainly under subhead compensation claims (Rs. 3.89 crores) due to less settlement of claims cases (Rs. 3.23 crores) and less staff costs and under subhead suspense due mainly to discharging of more liabilities

under 'Demands payable' (Rs. 2.39 crores) and less debits adjusted under Miscellaneous Advance than anticipated (Rs. 4.28 crores).

(9) Grant No. 16—Assets—Acquisition, Construction and Replacement (Saving—Rs. 36.46 crores).

(a) This grant covers the entire Plan requirements under 26 Plan subheads met out of three sources *viz.*, (i) Capital provided by General Revenues for acquisition of assets on additional account, (ii) Railway Funds *viz.*, DRF (for replacement) DF (for unremunerative operational improvement and labour welfare works ACSPF (for safety works)and (iii) OLWR *i.e.* from Railway revenues. No appropriation of funds is permissible between Capital Railway Funds and Revenues. While revenue works expenditure (OLWR) is presented and variation between Budget and actuals explained plan headwise separately, the works expenditure met out of Capital and Railway Funds are clubbed under 'other expenditure' and no detailed explanations for variations between the Budget provision and actual expenditure under each source of financing *viz.*, Capital, DF DRF and ACSPF under each planhead were being furnished.

(b) A supplementary grant amounting to Rs. 0.91 crore was obtained in January 1985 under Capital (Rs. 0.80 crore), DRF (Rs. 0.01 crore) and ACSPF (Rs. 0.10 crore) for recoupment of advance of an equivalent amount drawn from the Contingency Fund of India for starting certain works regarded as new service/new instrument of service. At the final grant stage (March 1985) anticipating increase in expenditure under DRF (Rs. 19.32 crores) and DF (Rs. 2.01 crores) and saving under Capital (Rs. 21.33 crores), the Ministry of Railways (Railway Board) reappropriated the above savings under Capital to DRF and DF under Railway Funds after presenting a modified Grant as per latest requirement in a supplementary grant presented to Parliament in March 1985.

The Railway Board stated (March 1986) that the reappropriation carried out under various segments of 'other expenditure' within the total grant available being in the nature of adjustments only could not be construed to be an irregular reappropriation as it was placed before Parliament along with the Supplementary Demands for Grants for 1984-85.

However, the fact remains that no specific vote of Parliament was taken for providing additional funds under D.R.F. and D.F.

Despite the above reappropriation between Capital and Railway Funds which did not have specific approval of Parliament there was saving of Rs. 28.88 crores under Capital and excess of Rs. 5.81 crores under DRF. The reappropriation of Rs. 2.08 crores to DF proved unnecessary as the savings (Rs. 4.21 crores) exceeded the amount reappropriated The extent of funds required on account of more payments to contractors, increased cost of stores, accelerated progress of works was over estimated by the zonal Railways and Production Units while communicating their requirements to the Ministry of Railways (Railway Board) as detailed in sub-para (c) below :

(c) The following are the Plan/sub-heads under which savings occurred :

(Rupees in crores)

Plan/Sub-head	Final Grant	Actual expenditure	Variation (saving)	Percentage
1	2	3	4	5
1. Stores Suspense	1101.56	1071.44	30.12	2.73
2. Manufacture Suspense.	801.12	772.70	28.42	3.55
3. Traffic facilities	52.75	44.21	8.54	16.19
4. Workshops & Sheds.	80.20	76.47	3.73	4.65
5. Signalling & Telecommunication works.	37.62	34.07	3.55	9.44
6. Bridge works	32.21	28.98	3.23	10.03

(d) The explanations for variations are as under.

(1) Savings

(i) *Stores Suspense* (*Rs.* 30.12 *crores*)

The saving was mainly due to less receipt of debits than anticipated because of less purchase of stores (general purpose), coal, coke, HSD oil, etc. (Rs. 33.18 crores), less receipt of manufactured stores from workshops (Rs. 6.91 crores) offset by less issues for manufacture (Rs. 7.58 crores), works and Miscellaneous Advance (*i.e.* on contractors' accounts etc., Rs. 3.47 crores). The largest saving occurred on Central Railway (Rs. 6.72 crores) followed by Northeastern Railway (Rs. 4.95 crores).

(ii) *Manufacture Suspense* (*Rs.* 28.42 *crores*)

The saving was mainly due to less out turn in Railway workshops (Rs. 8.94 crores) and less drawal of stores from stock (Rs. 7.58 crores) than anticipated and provided for.

The largest saving occurred on Chittaranjan Locomotive Works (Rs. 10.25 crores) followed by Central Railway (Rs. 6.31 crores).

(iii) *Traffic facilities* (*Rs.* 8.54 *crores*)

The saving was mainly due to less payment to contractors due to slow progress of works, etc., (Rs. 7.71 crores). The largest saving occurred on South Eastern Railway (Rs. 5.79 crores).

(iv) *Workshops and sheds (Rs. 3.73 crores)*

The saving was mainly due to less expenditure under material and freight thereon (Rs. 1.72 crores) and less payment to contractors due to slow progress of works (Rs. 1.72 crores). The maximum saving occurred on Eastern Railway (Rs. 1.98 crores).

(v) *Signal and Telecommunication works (Rs. 3.55 crores)*

The saving was mainly due to less payment to contractors due to slow progress of works (Rs. 1.96 crores), less expenditure under cost of materials and freight thereon (Rs. 0.86 crore) and other factors. The maximum saving occurred on Eastern Railway (Rs. 1.73 crores).

(vi) *Bridge works (Rs. 3.23 crores)*

The saving was due chiefly to less payment to contractors due to slow progress of works (Rs. 2.17 crores). The maximum saving occurred on South Central Railway (Rs. 0.92 crore).

(2) Excess.

Excess occurred under Track renewals as indicated below :

(Rupees in crores)

	Final Grant	Actual expenditure	Excess	Percentage
Track renewals	360.21	395.85	35.64	9

The above excess was mainly due to more procurement of materials and accelerated progress of track renewal works. The largest excess occurred on Western Railway (Rs. 11.01 crores) followed by Central Railway (9.10 crores) and Northeast Frontier Railway (Rs. 4.94 crores).

B. Charged Appropriations

6.3 A total saving of Rs. 19.98 crores occurred under 12 charged appropriations. Of this, appropriation No. 13 alone accounted for a saving of Rs. 16.26 crores against Rs. 30.00 crores sought for to meet the arrears of pension due to application of liberalised pension formula to pre-March 1979 pensioners following a Supreme Court judgement and Government orders thereon issued in October 1983. However, as bulk of the debits for payment of the Railway Pensioners paid by Public Sector Banks, Post Offices and treasuries were not received for adjustment, major portion of this Appropriation (Rs 16.26 crores) had to be surrendered without being utilised.

The rest of the savings occurred under Appropriation No. 12—Miscellaneous Working Expenses (Rs. 3.25 crores) and other ten appropriations (Rs. 0.47 crore). The savings specially those relating to No. 12 were mainly due to non-materialisation of decretal awards, less cases of accident compensation than anticipated during the course of the year etc.

The supplementary Appropriation of Rs 0.63 crore obtained in Appropriation No. 12 proved unnecessary as the saving of Rs. 3.25 crores was far in excess of the supplementary appropriation.

6.4 *Excess over grant—Revenue section*

There was excess of Rs. 6.27 crores in one Grant No. 13 in the Revenue section as detailed in the succeeding paragraph. This requires regularisation by Parliament under Article 115 of the Constitution of India :

(Amount in Rs.)

(*a*) Grant No. 13	Final Grant	Actual Expenditure	Excess	Percentage
Provident Fund, Pension and other Retirement Benefits (Original Rs. 233.62 crores and Supplementary Rs. 35.31 crores).	2,68,92,85,000	2,75,20,18,758	627,33,758	2.33

A supplementary grant of Rs. 35.31 crores was obtained in March 1985 mainly for more payment of superannuation and Retiring pension (Rs. 19.44 crores), commuted pension (Rs. 7.10 crores), family pension (Rs. 6.38 crores) and also due to more people retiring on pension than anticipated and the post budgetary increase on account of additional instalment of Dearness Allowance sanctioned to pensioners during the course of the current year.

The excess occurred mainly under the sub-head superannuation and retiring pension (Rs. 10.23 crores), commuted pension (Rs. 0.87 crore) offset by savings under Death-*cum*-Retirement gratuity (Rs. 2.42 crores).

The highest excess under superannuation and Retiring pension occurred on Northern Railway (Rs. 5.13 crores) followed by North Eastern Railway (Rs. 3.52 crores).

7. Discontinuance of the collection of Terminal Tax under Terminal Tax on Railway Passengers Act 1956

Section 3 read with section 7 of the Terminal Tax on Railway Passengers Act 1956, authorises the Railways to collect Terminal Tax from passengers carried by Railway from or to any notified place|pilgrim centre by means of a separate surcharge along with the fares.

In August 1981, the Ministry of Railways (Railway Board) issued instructions to discontinue from 1st October 1981, the collection of a terminal tax from the passengers, wherever these were levied under the aforesaid Act, as a separate surcharge. The Railways were also directed to round off the passenger fares to the next higher multiple of 50 paise in case of second class (mail and express) and second class ordinary (for distance over 200 kms.) fares and to the next higher rupee in case of all upper class fares; the extra revenue therefrom was to be utilised for payment of the aforesaid taxes at the notified rates to the concerned State Governments.

In September 1981 it was pointed out in audit that the terminal tax be collected only from the passengers proceeding to and from the notified place and that any proposal to dispense with the collection of such surcharge separately would require amendment of the Terminal Tax on Railway Passengers Act 1956.

Although the legal advice obtained by the Ministry of Railways (Railway Board) in December 1981 also supported the view expressed by Audit, separate collection of terminal tax had been discontinued from 1st October 1981. The aforesaid tax wherever payable to State Governments had been is being determined on notional basis with reference to the notified rates and paid out of railway fares collected from all passengers irrespective of the fact that their journeys commenced or terminated at the notified stations. As the tax had not been collected separately, the amount actually collected and the net proceeds thereof are not susceptible of verification and certification under Article 269(1) and 279(1) of the Constitution of India. However during 1979-80, when the tax had been levied and collected separately, a sum of Rs. 24.85 lakhs had provisionally been paid to the concerned State Governments.

The draft paragraph was issued to the Department of Railways (Railway Board) in November 1985; its reply is awaited (February 1986).

CHAPTER II

BOXN WAGONS

8. Boxn Wagons

Introduction

8.1 To meet the growth of bulk traffic in coal, ore, cement, foodgrains, etc., by increasing the throughput (i.e., increased unit loads per train and higher average speed of goods trains) the Railway Board directed the Research, Designs and Standards Organisation (RDSO), in September 1972, to design a new wagon with 20.3 tonne axle load which would have features similar to existing BOX wagons but should be of shorter length and, utilising the advantage of height should be able to give maximum possible pay-load for coal handling and increase the throughput with the existing track structure and loop lengths. Accordingly, in September 1974 the RDSO evolved a new design of bogie open wagon designated as BOXN wagon. The design of the wagon was expected to increase the throughput within the existing standard loop length of broad gauge track, loading density and other infrastructure without the necessity of additional investment on these. The wagons were expected to permit hauling of heavier freight trains of 4500 tonnes and later of 7500 tonnes from the existing freight level of 2500 to 3210 tonnes at higher speeds.

8.2 BOXN wagons were brought in service from October 1982 and 6260 wagons were in service by the end of March 1985. The introduction of BOXN wagons had become a controversial issue with regard to its acceptability by major users such as Power Houses and Steel Plants and there were serious misgivings whether BOXN would be the 'future wagon' and the benefits expected to accrue could be achieved in service.

Development of the design of BOXN wagon

8.3 The RDSO proposed three designs in March 1973. These were considered by a Committee of Directors and a Project Report was submitted by the RDSO in September 1974. The Project Report was considered by the Railway Board and approval for detailed design work for a wagon with 2460mm inside body height was given in March 1975. The RDSO completed the detailed design in November 1977. In January 1978, the Railway Board approved the manufacture of 10 prototype wagons and decided that after the behaviour of the wagons was studied series producton to complete one rake of 4500 tonne train would be taken up with the approval of the Railway Board. The Railway Board further decided that a techno-economic study of various aspects involved in running 4500 tonne trains should be put up to the Railway Board before undertaking series production.

8.4 An order for manufacture of 10 prototype wagons was placed on Golden Rock Workshops, Southern Railway in February 1978, which was completed in November 1979.

8.5 Meanwhile, in March 1979, even before the completion of manufacture of prototypes and contrary to their earlier decision about the study of behaviour of the wagons before manufacture of one rake and without undertaking a techno-economic study, the Railway Board enhanced the order to 115 BOXN wagons for constituting two rakes for service trials with a gross train load of 4500 tonnes. The two rakes were to be of different bogie designs for comparative evaluation of performance. Again in March 1980, even before the manufacture of two rakes (105 wagons) had commenced the Railway Board placed orders on Golden Rock workshops for manufacture of 430 more BOXN wagons making a total of 535 wagons on order.

8.6 The prototype wagons were fitted with Casnub bogies, cylindrical bearings and single-pipe air brake and had an inside height of 2460mm in accordance with the design approved by the Railway Board in January 1978. The trials on these wagons were completed in September 1980 only. Meanwhile, the RDSO and the Railway Board had reviewed and revised the design parameters. It was decided (July 1980) to provide for an inside height of 1950 mm only. Further in January 1981, even before the manufacture of 105 BOXN wagons (for trains in two rakes) had commenced, the Railway Board decided that all open wagons in the 1981-82 Rolling Stock Programme should be ordered as BOXN wagons. The Railway Board also laid down that conceptually all BOXN wagons should be capable of operation in 7500 tonne train formation at 90 kmph even though initially some of the wagons might be utilised on 4500 tonne trains. The Railway Board also ordered that for expediting production of BOXN wagons during 1981-82

immediate action should be initiated for indigenous development of free supply items (bogies, couplers, air brakes, etc.) to wagon builders and till such development was achieved crash import of items required should be arranged. The additional order for 430 wagons placed on Golden Rock workshops was also transferred to trade for ensuring earlier deliveries. Bulk orders on wagon builders for 16,400 BOXN wagons (approximate cost Rs. 656 crores) were placed in July 1982. This important decision and change in concept from 4500 tonne trains to 7500 tonne trains necessitated change in specification of subsystems such as couplers, bogies, and brakes, etc.

8.7 Whenever a new rolling stock is decided upon the prototype has to be subjected to a large number of tests and trials before it is cleared for general operation. In the case of BOXN wagon it was decided to subject it to the following tests and trials :

(i) Oscillation trials
(ii) Impact tests
(iii) Rolling resistance trials
(iv) Braking distance tests

These tests were considered essential to clear the wagon for heavy freight operation.

8.8 The prototype wagon was subjected to oscillation tests in 1980 and after evaluation of the results the wagon was cleared in November 1981 for a speed of 75 kmph on track laid with 90 lb rails. This was far below the design parameter of 90 kmph laid down by the Railway Board in January 1981. Even after further trials in April 1982 on better maintained track the wagon was cleared for 90 kmph in empty condition only and it was found that in loaded condition it was not possible to permit a speed of over 75 kmph.

8.9 In terms of speed potential the wagon was no better than the existing design of BOX wagon.

8.10 The Department of Railways (Railway Board) stated (February 1986) that, while the speed potential of 90 kmph in the loaded direction had not been achieved, nevertheless it had not been an impediment in the attainment of the objective of a higher throughput.

8.11 The other trials, *viz.*, braking distance tests and rolling resistance trials were completed in October/November 1983.

8.12 Thus the earlier decisions taken by the Railway Board in January 1978, *viz.*, that a study of the behaviour of prototype wagons and techno-economic study should be undertaken before commencement of series production was not given effect to and bulk orders for BOXN wagons were placed by the Railway Board committing the government to an investment of Rs. 656 crores before the new design had been evaluated for technical and commercial acceptance.

8.13 The principal points of difference between BOXN wagon and BOX wagon are given in Annexure VI. Initially, the RDSO had proposed a design with inside body height of 2460mm and cubic capacity 68.58 cum as against the corresponding dimensions of 1880 mm and 68.59 cum of BOX wagon. The approximate gross load per train of 55 BOXNs was 4470 tonnes against 3495 tonnes of 43 BOX wagon train *i.e.*, an increase of 28 per cent in the trailing load, the length of the train remaining within 600 metres. Subsequently, the height of BOXN wagon was reduced to 1950mm as a matter of convenience to the users, reducing the volumetric capacity to 56.28 cum. It was expected that the reduction in height would increase the pay load from 57 tonnes to 58.3 tonnes. The implications of a design with a volumetric capacity of 56.28 cum are discussed in the later section dealing with the utilisation of BOXN wagon.

8.14 The design finally adpoted requires use of (a) 22.9 tonne axle load casnub cast steel bogie (though the axle load is limited to 20.3 tonnes), (b) 22.9 tonne capacity axles and wheelsets, (c) cartridge tapered roller bearings, (d) twin pipe air brakes, and (e) high tensile couplers and draft gears. Though from first cost considerations the choice of casnub bogie, 22.9 tonne wheelsets, etc., were expensive, their choice was determined on the consideration that the design features besides enabling haulage of heavier trains would ensure a 'Zero defect' wagon in the sense that the wagon would require very little maintenance effort. The improved technical features were : Casnub bogies to ensure zero failures on the run as against the fabricated bogies of earlier BOX wagons which were developing a large number of welding failures; cartridge tapered roller bearings to minimise the large number of failures being experienced with cylindrical roller bearings on BOX wagons; Air brakes to eliminate the large number of troubles experienced with vacuum brakes like brake fade, inoperative brake cylinders, etc, and reduce maintenance work; and fitment of enhanced capacity high tensile couplers to enable running of 7500 tonne trains at a later date as the couplers provided on BOX wagons are not suitable for more than 6500 tonne trailing loads, while the enhanced capacity couplers being fitted on BOXN wagons would enable trailing loads of even 10,000 tonnes.

Performance of BOXN Wagons

8.15 The in-service experience of BOXN wagons had shown that the expectations in regard to technical

superiority of the design had been belied and the economic viability was doubtful as explained in the succeeding paragraphs.

8.16 The performance of BOXN wagons during the three years upto July 1985 showed that incidence of sick marking was on an average 4.6 wagons per trip as against 1 to 1.5 wagon per trip as contemplated. The design also revealed several adverse features. These were :

Bogie defects :

(a) abnormal wheel flange wear requiring more frequent turning--while the conventional BOX wagons require tyre turning during periodical overhaul, once in four years, in the case of BOXN wagons the wheels are required to be turned in approximately 7|8 months and sometimes even once in four months;

(b) high wear on wedges and side frame column liners;

(c) breakages of snubber and load bearing springs;

(d) excessive deflection of brake beam;

(e) fracture of centre pivot and spring planks etc;

Air brake defects :

(a) distributor valve defective;

(b) break beams bent/broken;

Wheel defects :

(a) flat wheels, wheel skidding, etc;

Other defects : coupler defects

8.17 The seriousness of the problem could be gauged from the data for the period December 1984 to April 1985 showing detachment of wagons from the rakes on account of the above defects.

Detachment on account of	December 1984	January 1985	February 1985	March 1985	April 1985
I. At Primary Maintenance and Terminal depots :					
1. Routine Overhaul (ROH)	97	119	147	160	142
2. Wheel defects	321	596	599	899	867
3. Air brake and brake gear defects	384	350	487	400	521
4. Bogie defects	14	23	13	31	24
5. Other defects	40	44	49	151	149
6. TOTAL	*856	1132	1295	1641	1703
II. *Enroute*	*3	38	37	17	37
GRAND TOTAL	*859	1170	1332	1658	1740

*Excluding the figures of Eastern Railway.

8.18 Obviously the objectives of incorporating special features in the design, viz., casnub bogies and air brakes, with a view to achieving a zero defect wagon have not fructified. The combination of casnub bogies and air brake was expected to give trouble-free service during a complete round trip after intensive repairs at a nominated base maintenance depot, with availability of brake power beyond the safe level of 85 per cent originating effective brake power and minimising the repair work load at terminals. On the contrary in the case of BOXN wagons the maintenance efforts have had to be increased. For example, at New Katni Junction, a nominated base depot on Central Railway which caters to the maintenance of 3500 wagons, the average wheel reprofiling (to rectify the wheel flange wear) was of the order of 36 per day. At this depot, there were 945 detachments in May 1985 which increased to 1057 in June 1985, of which 358 and 679 respectively were on account of wheel defects. Because of inadequate reprofiling facility the depot was compelled to turn out wagons with ground sharp flanges which did not have a useful life of even two months. In this depot during the six months upto June 1985 there were 541 breakages of springs. Similarly, at Mughalsarai maintenance depot which caters to about 3800* BOXN wagons the number of wagons marked sick was : July 1985—136 wagons from 126 rakes, August 1985—369 wagons from 153 rakes and September 1985—400 wagons from 150 rakes; percentage of sick wagons having increased from 2 to 5. Also a test check of 400 wagons showed that out of these, 232 wagons had been marked sick during the period from January 1985 to October 1985 and that the same wagon was marked sick mainly on account of wheel defects|brake defects approximately 2.7 times (average) indicating the high frequency of occurrence of defects. On the Northern Railway, four wagons were detained for 57 to 110 days during April to July 1985 for want of BOXN wheels.

8.19 The defects in air brakes were attributable to defective supply of a vital component by a firm. The Railways were not able to achieve the desired brake power on BOXN trains. Only 70 per cent of the trains leaving the primary maintenance depot on Eastern Railway had 100 per cent brake power. The position was similar on Western Railway.

8.20 Moreover, it was observed in Mughalsarai maintenance depot that on account of application of air brakes the brake blocks were wearing out fast and

*Holding in October 1985.

needed frequent replacement. The number of brake blocks changed in the reception yard during train examination was :

August 1985	2315	(in 155 rakes)
September 1985	1655	(in 145 rakes)
October 1985	3895	(in 178 rakes)
November 1985 (Upto 20th)	2110	(in 114 rakes)

8.21 In December 1984 the Railway Board had fixed the shed maintenance schedule (routine overhaul) for BOXN wagon as once in a year. However, in view of high frequency of incidence of defects, the Railway Board decided (October 1985) that the maintenance should be undertaken at intervals of 9 months; for BOX wagons the shed maintenance schedule is 18 months.

The Department of Railways (Railway Board) stated (February 1986) that the standard practice on Railways is to work out sick percentage in relation to the total holdings. On this basis average sick incidence of BOXN wagons per day was less than one per cent. They further added that the wear on brake blocks in BOXN wagons at Mughalsarai Depot was, among other factors, related to the intensity of usage. They also stated that the frequency of the routine overhaul on BOXN wagons had been changed from 12 months to 9 months to effect scheduled preventive maintenance and thus further minimise and control unscheduled occurrence of defects. But the instructions issued by the Railway Board in October 1985 envisaged that planned preventive maintenance at an interval of nine months should be undertaken with a view to repair/change all worn out, damaged/defective components so that wagon so attended did not call for repairs due to routine wear and tear.

8.22 For repair and maintenance of BOXN wagons the Railway Board nominated a particular depot on each Railway with facilities for (i) plant and equipment for air brakes, (ii) wheel reconditioning equipment, (iii) machinery and plant for wagon repairs, (iv) other equipment and (v) mechanical handling equipment. The cost of setting up these facilities was estimated at Rs. 108.5 lakhs. As these facilities are in addition to the facilities available for BOX wagons the extra investment is attributable to the introduction of BOXN wagons.

8.23 The 105 BOXN wagons manufactured in Golden Rock workshops were commissioned in Waltair in two lots—one in February 1982 and the other in September 1982. The first rake was utilised on the Kottavalasa—Kirandul line (KK line) from August 1982. The incidence of bogie defects such as high flange wear came to notice even in October 1982. When the rake had earned about 25000 kms and when it was being transferred to coal circuit it was reported that a large number of wagons had sharp flanges. The RDSO who investigated the defects concluded that wheel wear was primarily attributable to the running on KK line and further trials would be needed to establish the wear pattern under the new casnub bogie and comparative wear pattern under other types of bogies.

8.24 In 1982, the Railway Board approved of the trials being conducted to evaluate the comparative performance of casnub bogies. After 18 months, in July 1984, the RDSO concluded that the wheel wear rate in the case of BOXN wagon with casnub bogie would be twice as high than in the case of BOX wagons. The RDSO recommended that it would be necessary for the Railways to equip the sick lines (*e.g.*, the wagon repair depots) with adequate capacity for wheel turning and also to plan for adequate spare wheelsets on replacement account.

8.25 Keeping in view the various problems encountered with the casnub bogies, the Railway Board decided that they should import 6000 modern bogies of different types which should be tried on different sections and evaluated before making a final choice. In the justification for import, it was mentioned by the Railway Board that the casnub bogie had thrown up serious problems in the form of excessive wheel and rail wear and that the problem did not lend itself to any simple solution by way of modification/retrofitting of the casnub bogie as wheel wear was basically a function of wheel rail interaction peculiar to a particular vehicular suspension design. (The actual import of bogies was stated to be limited to 1800 bogies.)

8.26 Evidently, it was not prudent on the part of the Railway Board to have ordered bulk production of BOXN wagon without knowing the results of the trials originally envisaged in January 1978 and gaining service experience. If as admitted by the Railway Board the defects have no simple solution as the bogies have inherent defects and the Railways have to resort to import of bogies before developing a suitable bogie, the operation of BOXN wagons already manufactured and on order would involve heavy maintenance expenditure. Further the incorporation of 22.9 tonne axles and wheelsets with a view to operating the wagon to 22.9 axle load and high tensile couplers with a view to running 7500 tonne/

10,000 tonne trains at a future date does not give any advantage but was expensive. The cost of a BOXN wagon is Rs. 5 lakhs and that of a BOX wagon Rs. 4.5 lakhs (approx.).

Procurement of BOXN wagons

8.27 As decided by the Railway Board in January 1981, action was initiated for procurement of inputs such as wheelsets, bogies, air brakes, etc., even in May/June 1981. In September, 1981 the Railway Board decided that 50 per cent of the wagons to be procured during the Sixth Plan period (1980-81 to 1984-85) should be BOXN wagons, i.e. about 20,000 BOXN wagons. It was also decided that by March 1983, 3000 BOXN wagons should be manufactured. As the design of the new wagon incorporated special features most of the inputs required import fully or partly. The position of input planning in July 1981 and actual ordering was as under :—

Details	Tender opening	Date of order
Bogies	30-5-81	May 1982
Air brakes	29-6-81	March 1982
Wheelsets	22-5-81	September 1981
Cartridge bearings	22-7-81	June 1982
High tensile couplers(*)	9-6-81	January 1982

*As the development of high tensile draft gear was delayed the wagons were fitted with enhanced capacity couplers with normal draft gears.

8.28 The orders on wagon builders were placed in July 1982 for 16,400 BOXN wagons. The actual production of BOXN wagons is shown below :

Year	Actual production (wagons in units)
1981-82	56
1982-83	827
1983-84	3908
1984-85	3470
TOTAL	8261

Though the Railway Board had initiated action even in May/June 1981 for procurement of inputs and the supplies of wheelsets had started coming in 1981-82 itself, the wagon production did not pick up till 1983-84. Consequently, there was idling of 22.9 tonne wheelsets costing Rs. 6 crores as commented upon in paragraph 10 of the Advance Report of the Comptroller and Auditor General of India for the year 1982-83—Union Government (Railways).

8.29 Even during the years 1982-83 and later the procurement of other inputs (mainly bearings, air brakes, etc.) did not match the production of wagons and consequently a large number of wagons remained stabled. The month-wise stabling of BOXN wagons with wagon builders is shown below :

(Number of wagons stabled)

Month	Year			
	1982	1983	1984	1985
January	—	225	370	1968
February	—	398	727	1776
March	—	545	891	1636
April	—	480	988	
May	—	300	1160	
June	—	127	1359	
July	—	30	1594	
August	—	—	1542	
September	—	—	1665	
October	38	—	1713	
November	100	—	1784	
December	207	129	1944	

Though the production up to March 1985 was 8261 wagons, on account of stabling of 1636 wagons with wagon builders only 6615 wagons were available of which 6260 had been commissioned for traffic.

8.30 The average number of wagons stabled during the period October 1982 to March 1985 was 786 per month. The large scale stabling of wagons indicated lack of the proper planning of inputs. As 90 per cent payment of the cost of wagon (Rs. 4 lakhs approximately) had to be made on completed wagons including stabled ones, an amount, of Rs. 28.3 crores may be considered as idle investment from October 1982 to March 1985. In addition the wagon builders were paid escalation claims on stabled wagons also. In respect of one contract for 4706 BOXN wagons the firm had produced 2763 wagons up to March 1985 and on an average 269 wagons per month had been stabled during the period October 1982 to March 1985. The total escalation claims paid to the firm amounted to Rs. 423.97 lakhs which included Rs. 36.43 lakhs towards stabled wagons.

8.31 According to the Railway Board the stabling of wagons was mainly on account of (i) delayed receipt of wheel-sets, (ii) disruption in supply of imported components, (iii) delay in development of indigenous components by suppliers of cartridge bearings, (iv) change in production programme during mid-year, and (v) delay in inland transportation of components (steel). However, with the experience gained in the manufacture of BOXN wagons things had started improving and stabling had come down to 404 BOXN wagons on 31st October 1985.

8.32 It has, however, to be mentioned that considering the magnitude of the financial loss on account of idle investment due to stabling of wagons the

planning on the part of the Railway Board was not realistic.

Utilisation of BOXN wagons

8.33 The commercial features of the design of BOXN wagons are :

(a) Shorter length which will enable trains of heavier load to be run.

(b) Higher body height and width.

(c) Three doors on each side for unloading (as against 5 doors on each side on BOX wagon).

(d) Increased carrying capacity of about 2 tonnes.

(e) Increased gross load and pay load of trains af 4500 tonnes and 3235 tonnes as against 3500 tonnes and 2400 tonnes respectively of BOX wagon trains.

8.34 The BOXN wagon was expected to retain the characteristics of a general purpose wagon in the sense that it could be used for loading all bulk commodities such as coal, ore, steel, cement, foodgrains, etc., and no major change in loading and unloading facilities would be required.

8.35 The loadability of the wagon envisaged for various commodities as per the design finally adopted (1950mm body inside height) compared with BOX wagons was as under :

Commodity	Net pay load per train of		Increase %
	43 BOX wagons	55 BOXN wagons	
	(Tonnes)		
Coal for Power Houses	2450	3150	28
Coal for steel plants	2450	2860	16.5
Coal for Railways	2450	2750	12
Wheat	2408	2571	7
Urea	2408	2423	—

It was expected that for other commodities like iron ore, manganese ore, limestone, cement, etc. full capacity of 3150 tonnes per train would be utilised.

8.36 It will be observed that the relative gain in train load is less for foodgrains, fertilisers and certain types of coal. Even in the case of coal a 4500 tonne train of 55 BOXN wagons could carry only 12—16 per cent more than a 43 BOX wagon train, though it involved an extra investment of Rs. 65 lakhs on wagons alone per rake.

8.37 The marked carrying capacity of BOXN wagon is 58.3 tonnes. With a height of 1950 mm and cubic capacity of 56.3 cum. it was expected that Power House coal, ore, cement etc., would be carried to the marked carrying capacity, while steam coal for Railways and washed coal for Steel Plants could be loaded up to 50 tonnes and 52 tonnes respectively. In spite of the disadvantage of not being able to carry the marked carrying capacity and the improvement in train load not being significant for many commodities, the Railway Board approved the design in July 1980 as a matter of convenience to the main users (Power houses and Steel Plants) so that the wagon could be handled without the need for modification of tipplers at the unloading points.

8.38 The use of BOXN wagons for loading coal to Power Houses, Steel Plants and Railways themselves has given rise to several disputes and problems regarding :

(i) carrying capacity,

(ii) unloading arrangements,

(iii) unloading time, and

(iv) system of weighment of BOXN wagons to which satissfactory solutions have not been found so far (August 1985).

8.39 It was not possible to weigh BOXN wagons on the existing weighbridges of the Railways' at the collieries, Steel Plants or other users' premises because of its shorter length. Consequently, these wagons are not weighed and freight is collected on the notified chargeable weight. The Railway Board had decided that all future weighbridges should be electronic ones capable of handling all kinds of wagons. No progress, however, has been made in the choice, standardisation and installation of electronic weighbridges.

8.40 The Project Report identified 17 routes for running BOXN wagons. These were revised from time to time and in October 1982 the Railway Board decided that BOXNs should be run on priority basis on (i) Korea-Rewa section for coal, (ii) Hospet-Madras for iron ore, (iii) Waltair-Kirandul for ore, (iv) Bokaro-Kiriburu Rourkela-Bhilai for ore and washed coal, and (v) Singareni—South India for coal. At the end of March 1985, 6,260 BOXN wagons were running.

8.41 Soon after the introduction of BOXN wagons in the coal circuit of Korea-Rewa section, reports were received from consumers—Gujarat Electricity Board, Maharashtra State Electricity Board and others that the coal received by them in BOXN wagons was less than the marked carrying capacity. The Gujarat Electricity Board also pointed out that it was losing huge amounts on account of short receipt of coal and

railway freight thereon, and that there were no facilities for weighment of BOXN wagons with the collieries or with the Railways.

8.42 The RDSO who conducted loadability trials stated (December 1982) that the BOXN wagon had been designed with a volumetric capacity of 56.3 cum and the wagon was optimal for transport of coal of density 1045 kg. per cum. with heap loading, *i.e.*, loading above the brim in heaps instead of loading level up to the brim. The Railway Board directed the RDSO to carry out further investigations as the densities of 13 out of 14 types of coal produced was less than 1045 kg. per cum. The Traffic Research Directorate of the RDSO completed the loadablity trials in the collieries linked to the Power Houses in the Western region, in November 1983. A total of 66 samples in 41 collieries were tested and the results showed that loadability was on an average 52.6 tonnes for slack coal, 51.1 tonnes for steam coal and 54.0 tonnes for Run of Mine (ROM) coal. The RDSO also observed that in Korea-Rewa coal-fields grades A, B, C, & D (non-coking) and coking coal constituted nearly 85 per cent of total coal produced and all these grades of coal had a higher bulk (being of lighter variety). The remaining 15 per cent was of low bulk density for which the full carrying capacity of BOXN wagon could be achieved.

8.43 Based on the trials (mentioned above) the Railway Board decided in November 1983 that the chargeable weight for slack coal would be 55 tonnes and steam coal 54 tonnes (against marked carrying capacity of 58.3 tonnes) as an interim measure. The Railway Board also directed that more tests should be conducted under normal loading conditions.

8.44 The decision to reduce the chargeable weight resulted in a reduction of the earning capacity of the BOXN wagon vis-a-vis the BOX wagon.

8.45 The free time for loading/unloading of a fall rake of BOXN wagons was also fixed as 10 hours and 11 hours for manual loading and unloading respectively and 9 hours and 10 hours for mechanical loading and unloading respectively with effect from 1st December, 1983 though according to Railway Board mechanical unloading could be possible within 6 to 7 hours.

8.46 Meanwhile, the Gujarat Electricity Board had started deducting straightway an ad-hoc 20 per cent from the bills of the collieries in respect of coal received in BOXN rakes. A firm of Ahmedabad had filed a suit against the Railways and Coal India Limited for the losses sustained (about Rs. 9,900 per wagon) in respect of coal received in BOXN wagons. For steam coal (loco coal) meant for railways' own consumption the Central and Western Railways reported that coal received in BOXN wagons was weighing between 44 and 50 tonnes against the marked carrying capacity of 58.3 tonnes. The Railway Board directed the railways in November 1983 that payment to collieries for coal in BOXN wagons should be made to the extent of 80 per cent only of invoiced quantity. These instructions were subsequently revised (April 1984) and the Railways were authorised to make payment of 90 per cent of invoiced quantity for coal received from 1st December 1983 to 24th April 1984 and 100 per cent payment from 25th April 1984 based on 54 tonnes if coal was supplied from Churcha, Korea I and Korea II coalfields subject to certification by loading Railway (South Eastern Railway) that the correct methodology for heap loading to 54 tonnes was followed. Based on these instructions the Central Railway Administration alone had withheld an amount of Rs. 97.8 lakhs from the coal bills for the period August 1983 to September 1984. On the Western Railway the payment was not regulated properly. Payment to the extent of 90 per cent was made in respect of coal received prior to 1st December 1983 contrary to Railway Board's instructions the Central Railway Administration alone had Even after the issue of revised instructions the quantity of coal received by Central Railway Administration was reported to be less than the invoiced quantity by 5 per cent to 12.5 per cent during the period May 1984 to April 1985.

8.47 In order to achieve the full loadability of the wagon, the Railway Board instructed the South Eastern Railway Administration, in February 1984, to ensure loading in heaps (above the brim) by the collieries. As the problems faced by the consumers continued an inter-ministerial meeting between Department of Coal, and Ministry of Railways and Central Electricity Authority was held in August 1984 to sort out the problems relating to loadability, method of loading, weighment, etc. It was pointed out that there were no prior consultations with the consumers before introducing BOXN wagons. It was decided that trials would be conducted by Railways, Coal India Limited and representatives of Power Houses and Cement Controller. These trials have not been conducted so far (July 1985).

8.48 However, in June 1985, the Railway Board notified that the minimum weight for charge for both steam coal and slack coal loaded in BOXN wagons should be the marked carrying capacity (58.3 tonnes) with effect from 15th June 1985, when loaded from collieries in the north and south Karanpura coalfields

of Eastern Railway and from all coking coal washeries. The minimum weight for charge in respect of coal loaded from other collieries was continued at 55 tonnes and 54 tonnes for slack coal and steam coal respectively.

8.49 Meanwhile, reports continued to be received from consumers about short receipt of coal in BOXN wagons. The Gujarat Electricity Board pointed out (January 1985) that even with heap loading the actual quantity received in the Power Houses was only 50/51 tonnes in a wagon i.e., 4 tonnes short of charged weight, presumably due to loss (spillage). It also pointed out that the trials agreed to be conducted at the tipplers of Power Houses had not been conducted by the Railways.

8.50 M|s. Tata Chemicals Ltd. had also filed a writ petition in the High Court at Jabalpur, in 1983, stating that the South Eastern Railway had fixed the carrying capacity of BOXN wagon as between 58.1 to 58.3 tonnes in an arbitrary manner. They prayed that the loadability of BOXN wagon in respect of coal should be fixed at 52 tonnes and claimed refund of alleged overcharges amounting to Rs. 13.42 lakhs for the period from August 1983 to October 1983 and similar overcharges thereafter.

8.51 Coal India Limited also pointed out (May 1985) that even if loading up to the height and in the manner desired by the railways was found possible it was not safe to carry coal in that manner as such loading did not take into account the incidence of coal falling off enroute thus constituting a loss not only to the consumer but also to the nation. The Coal India Limited also stated that a time bound programme should be laid down to carry out further investigations to decide once for all the policy to be followed by railways in regard to (a) the safe height and profile for loading coal in BOXN wagons, (b) system of loading—whether heap or level, (c) loadability with reference to density of coal and cubic capacity, (d) free time for demurrage for collieries and consumers, (e) collieries which should be supplied with BOXN wagons so that action could be taken to replace the existing weighbridges and (f) installation of weighbridges by the Railways.

8.52 As seen from the above narration the design of the wagon was deficient in respect of loadability for coal for which it was mainly intended to be used. The investigations which ought to have been carried out at the design stage and before introducing the wagon for commercial operation, had not been done. Even after 30 months of the wagons being in service the disputes and problems relating to loadabality and free time for loading and unloading have not been resolved.

8.53 *Export iron-ore circuit* : BOXN wagons are also deployed in Hospet-Madras section and Waltair—Kirandul section for carrying ore for export. According to the RDSO, BOXN wagon was not suitable for carrying ore because the existing BOY design was capable of giving better service, better pay-load tare ratio, and saving in investment. Besides, iron ore terminals were designed to handle BOI and BOY type wagons of which there were adequate stock. The justification for introduction of BOXN wagons for transport of export ore is therefore not clear. On the Hospet—Madras section iron ore was being transported in rakes of 30 BOX wagons single locomotive. The net pay load for two trains was 3500 tonnes. The BOXN train with 55 BOXN wagons utilising two diesel locomotives carries a net pay load of 3190 tonnes only resulting in wastage of loco capacity.

8.54 In fact, it was observed that on South Central Railway 6 to 9 trains constituting about 10 per cent of BOXN trains were run during the period April 1985 to June 1985 with 30 or less BOXN wagons with no increase in pay load per train compared to BOX trains.

8.55 Similarly, in coal traffic via Mughalsarai it was observed that during August 1985 to October 1985 the trains with 54 BOXN wagons or less constiuted 9 to 17 per cent of the total BOXN trains. The running of underload trains further reduced the differential in pay load between BOXN trains and BOX trains.

8.56 *Steel Plant Circuit* : The introduction of BOXN wagons for carrying coal and ores to Steel Plants has been the most controversial subject. Though the Railway Board had held discussions with the Steel Plants and the Department of Steel from 1976 onwards at various levels Steel Plants did not agree to receive the BOXN wagons.

8.57 The main objections raised by them were :

(i) modifications to tipplers were expensive and though technically feasible, once the tipplers were modified other BOX wagons could not be dealt with, the number of tipplers being limited at each Steel Plant it was not desirable to modify one or two tipplers to receive BOXN wagons thereby losing flexibility of operation.

(ii) BOXN wagons would have to be placed eccentrically on the tipplers creating

uneven load discharge which was operationally unsound;

(iii) lower capacity of BOXN and prolonged tippling cycle : As the BOXN would hold only 51 tonnes of coking coal, as against 58 tonnes in BOX wagons the throughput per wagon would get reduced;

(iv) as BOXN wagons cannot be weighed on existing weighbridges Steel Plants have to go in for other types of weighbridges. Electronic in-motion weighbridges had not been standardised in India and their operation and maintenance costs were likely to be prohibitive;

(v) mix-up of BOX and BOXN wagons would involve additional detention of all empties necessitating extra free time allowance;

(vi) unsuitability of BOXN wagons for loading steel materials; BOXN wagons were not suitable for despatch of finished products from steel plants as most of the steel sections produced could not be accommodated in a BOXN wagon because of its shorter length. This would necessitate supply of empty BOX wagons for finished products creating more number of wagons to be handled by the Steel Plants.

8.58 The Kumaramangalam Committee (constituted by the Planning Commission) on handling of Railway wagons transporting bulk commodities in collieries, Steel Plants, Power Houses and ports, recommended (June 1983) categorically that BOXN wagons should not be commissioned in Steel Plant circuit. The committee further recommended that a self-discharge (hopper) wagon was the most suitable for transport of raw materials to Steel Plants.

8.59 Because of the above factors the introduction of BOXN wagons in Steel Plant circuit was delayed. After discussions with the Department of Steel (December 1983), it was agreed that one tippler at Bokaro would be modified to cater to movement of iron ore (2 rakes per day) from Kiriburu and one tippler at Rourkela Steel Plant to handle one rake of washed coal per day. It was also agreed that conventional BOX wagons would be made available at Steel Plants for back-loading finished products and the question of free time allowance would be examined. Accordingly, BOXN wagons are being deployed in a limited way at the Steel Plants, Bokaro and Rourkela from July 1984 only. However, in view of their unsuitability for backloading, Railways have to make available adequate empties of BOX wagons. Thus the advantage of BOXN wagon expected in iron ore circuit by running longer trains would be more than nullified by running of empty rakes consuming line capacity and involving additional expenditure.

Operational features and financial implications

8.60 Apart from the disadvantages arising from the design inadequacies, loadability, consumer reactions, etc., the running of 4500 tonne trains consisting of BOXN wagons was also adversely affected because of the necessity and delay in development of infrastructural facilities. Even in respect of loading of coal, BOXN wagons could not be introduced in all collieries or sent to all Power Houses as the modification to loading chutes and tipplers had not been done.

8.61 At Bishrampur colliery BOXN could not be loaded because the loading chute was too low to permit loading upto carrying capacity. Supply of BOXN wagons was, therefore, discontinued (August 1984). Similarly, at Bhojudih and Kargali washeries BOXN wagons could not be supplied pending arrangement for positioning wagons below the loading chute.

8.62 At unloading terminals, though according to the RDSO the wagon had been designed so as to eliminate modifications to tipplers, it was noticed that a recheck of the position by the RDSO in November 1983 showed that the BOXN wagon could clear only 47 out of 176 operational bogie wagon tipplers, even these with modifications to side support to accommodate the width. The cost of modification was estimated to be between Rs. 3 lakhs and Rs. 8 lakhs per tippler.

8.63 BOXN wagon had been designed to increase the throughput within the existing standard loop length of broad gauge track, loading density and other infrastructure without additional investment on these. It was expected that for running of 4500 tonne trains the existing infrastructure would be quite adequate; carriage and wagon facilities already existing would need to be supplemented only to the extent of providing air brake testing facilities; and no additional signalling works would be involved. The running of 4500 tonne trains, however, necessitated additional investments on track, signalling and strengthening of power supply in electrified sections and wagons maintenance facilities besides the need for additional locomotives as mentioned in the succeeding paragraphs.

(a) *Track works* : On South Eastern Railway provision of additional facilities on Karampada—Bondamunda section costing Rs. 2.31 crores were

sanctioned to meet amongst others the needs of operation of BOXN wagons also. Though on Western Railway also strengthening of track and bridges on Bhopal—Viramgam section estimated to cost Rs. 14.5 crores were found necessary, the proposals were not processed as it was possible to run the longer trains at reduced speed. The BOXN trains were therefore permitted to run at a reduced speed of 45 km. to 75 km. on various stretches with further reduction on bridges. The advantage of additional throughput, if any, was thus lost on account of reduced speed of the longer trains.

Further, it was also reported by Southern Railway Administration (September 1985) that the running of BOXN wagons on Renigunta--Madras section had caused increased incidence of rail fractures and weld failures besides other unsatisfactory features such as excessive rail wear, deterioration of wooden sleepers etc. The RDSO also observed (October 1985) that the BOXN wagons were already causing higher damage to rail wherever they were running both in rail failures and rail wear.

(b) *Power supply* : Though the concept of running longer trains had been under consideration from 1974, the RDSO stated in September 1982 that "it appears that additional substations would be required in between the existing sub-stations at practically all the places. This would also need further studies.....". Accordingly, the Eastern, Northern and South Eastern Railways have taken up the works of providing additional sub-stations on the routes selected for longer trains at a cost of Rs. 46.60 crores. On the Northern Railway, pending completion of the work of providing additional sub-stations, it was decided (April 1984) that BOXN trains could be introduced on the assumption that not more than one train would be in the area of one sub-station.

(c) *Wagon maintenance facilities* : Though it was expected that the existing carriage and wagon facilities would be adequate and only air brake testing facilities would need to be provided, because of the incidence of large scale defects in bogies, wheels etc., the maintenance facilities had to be augmented. The Central, the South Central and the Western Railways had sanctioned works for development of maintenance facilities for BOXN wagons at New Katni Junction, Gooty and Vatva at an estimated cost of Rs. 1.98 crores, Rs. 1.18 crores and Rs. 0.58 crore respectively. The proposal to create maintenance facilities at Mughalsarai at an estimated cost of Rs. 4.08 crores is still (December 1985) under consideration.

(d) *Motive Power* : The Railway Board decided (August 1983) that the diesel locomotives (WDM2) should be fitted with air brakes to enable dual operation (with vacuum brakes as also air brakes) and future production of electric locomotives should be with air brakes. It was also decided that under no circumstances a multi-loco should be split up even though a single loco could haul 55 BOXN empties in the return direction. This decision about dedicated locomotives for a rake involved putting in additional locomotives exclusively for running BOXN rakes. For loading 10 rakes per day from Korea coal-fields to Western and Central Railways, it was assessed that 160 locomotives would be required, giving 150 engine kilometres per day per engine against 400 engine kilometres per day per engine normally laid down. Similarly, on the South Eastern Railway the additional requirement for Bokaro-Kiriburu circuit (4 rakes per day) was assessed at 20 locomotives.

Further, for a trailing load of 4500 tonnes, on certain important sections three locomotives have to be deployed. The comparative requirements of locomotives for BOX wagon trains and BOXN wagon trains on some important sections were assessed as under :

	BOXN (4500 tonnes)	BOX (3660 tonnes)
1. Karampura—Sonenagar	3 (2 WAM_2 banked by a single WDM_2)	2 WDM_2
2. Chopan—Chunar	4 (3 WDM_2 banked by one WDM_2)	3 WDM_2
3. Sonenagar—Tughlakabad	2 WAM_4	2 WAM_4
4. Rourkela—Chandil	3 WAM_4 2) with one banking engine)	2 WAM_4
5. *Chandil—Bokaro	3 WDM_2	2 WDM_2
6. Bondamunda-Hatia-Muri-Bokaro.	3 WDM_2	2 WDM_2

*As the section Chandil-Bokaro is not electrified, the trains to Bokaro are run on diesel traction only.

On sections referred to at serial no. 2, 4, and 6 above BOXN wagons have not been introduced so far (January 1986). On other sections, it was understood that the number of locomotives for hauling BOXN trains were the same as for BOX trains.

The increase in payload is only of the order of 300 tonnes (net) in a BOXN train of 55 wagons compared to BOX wagon train of 43 wagons. Thus

an additional locomotive is required even for a marginal increase in pay load.

8.64 The Railway Board also decided that each BOXN rake should have at least two brake vans to avoid reversal of brake van at terminals as well as for avoiding stabling of trains if one brakevan was marked sick. Accordingly, the requirement of brake vans also went up and provision was made for acquisition of 160 brake vans in the rolling stock programme for 1983-84, besides conversion of existing brake vans for running with air brakes. It may not be possible to attach the brake vans fitted with air brakes to conventional freight trains with vacuum brakes.

8.65 Thus, the running of 4500 tonne trains with BOXN wagons entailed large scale investment in improvement of infrastructure on railways, though the advantage gained in terms of relief in section capacity, increase in throughput, etc., was not appreciable. According to the RDSO, the impact on enhancement of line capacity would be felt only when about 30 to 40 per cent of the total fleet operating on the concerned routes consisted of BOXN wagons.

8.66 In January 1978, the Railway Board had directed that a techno-economic study of various aspects involved in running of 4500 tonne train should be put up to them before undertaking series production. No such study was undertaken. Again, in November 1983 the Railway Board desired that the original financial justification of BOXN wagons should be examined and "considering that larger items of commodities may be of such specific gravity as not to give us the benefit of loading upto maximum carrying capacity, whether this justification will still hold good". Without working out a financial justification, though the running of BOXN trains involved huge investments as pointed out above, it was concluded that BOXN wagon possessed the potential for 4500 tonne trailing load with amenability to unloading by tippling for a large number of existing users. It was also concluded that for future projects a design of self discharge wagons for transport of coal could be considered.

8.67 An assessment of running cost of 4500 tonne trains made by Audit showed that for moving approximately 5.4 million tonnes of coal annually the running of BOXN trains would result in additional expenditure of Rs. 17 lakhs at 1983-84 costs besides additional investment in wagons (of about Rs. 5 crores) and other infrastructure.

Impact of manufacture of BOXN wagons on availability of other wagons

8.68 The production of different types of wagons during the Sixth Plan period (1980-81 to 1984-85) was as under :—

	Total production in terms of four-wheeler wagons
BOXN wagons	20852.5
BOX wagons	20110
Covered wagons	14878
Tank wagons	8312
Other special types of wagons (BHRT, BFK, BOBS etc.)	5123.5
TOTAL BG	69276
MG wagons	3350
NG wagons	402
TOTAL	73028

8.69 It will be observed that 30 per cent of the BG wagons were of BOXN type and 12 per cent were tank wagons. The excessive procurement of tank wagons and consequent idling of wagons was commented upon in paragraph 1 of the Advance Report of the Comptroller and Auditor General of India for the year 1983-84—Union Government (Railways). The unnecessary production of tank wagons in the first two years of the Plan and the switch over in the subsequent years to production of BOXN wagons which move in closed circuit and have limited use appear to have affected the wagon availability on the Railways as could be gauged from the outstanding wagon registration on broad gauge which were as shown below :—

31st March 1982	58038
31st March 1983	35056
31st March 1984	38959
31st March 1985	71570

8.70 *Summing up*

To meet the growth of bulk traffic in coal, ore, foodgrains by increasing the throughput the Railway Board directed the Research, Designs and Standards Organisation (RDSO), in September 1972, to design a new wagon. Accordingly, the RDSO evolved a new design of broad gauge wagon known as BOXN which was expected to permit handling of heavier freight trains of 4500 tonnes/7500 tonnes as against the existing freight level of 2500 tonnes to 3200 tonnes per train. The new design had incorporated several technical improvements which though expensive from first cost consideration were expected to give a 'zero defect' wagon in the sense that the wagon would

require very little maintenance effort besides permitting higher speed and heavier loads.

BOXN wagons were introduced from October 1982 and 6260 such wagons were in service at the end of March 1985.

The following features were noticed in the development of design, performance, procurement and utilisation of BOXN wagons :

1. In January 1978 while approving the manufacture of prototype wagons, the Railway Board had decided that a study of the behaviour of prototype wagons and techno-economic study should be undertaken before commencement of series production. No such study was, however, undertaken and the Railway Board placed bulk orders for manufacture committing the Government to an investment of Rs. 656 crores even before conducting the trials required and before the new design had been evaluated for technical and commercial acceptance. (Paras 8.3 to 8.13).

2. The in-service experience of BOXN wagons had shown that the expectations in regard to technical superiority of the design had been belied and the economic viability was doubtful. The higher speed (90 km per hour) was not achieved and the trailing load increased marginally. (Para 8.8).

3. The incidence of defects in bogies, air brakes, wheels, etc., was very high on account of design deficiencies (bogies), poor quality supplies, etc. As the design of the bogies had thrown up serious problems which did not lend itself for a simple solution the Railway Board decided to import six thousand bogies for trials thereby indicating that it was not prudent on the part of the Railway Board to have ordered bulk production of BOXN wagons without knowing the results of originally contemplated extensive trials with the new design. (Paras 8.16 to 8.26).

4. The procurement of inputs (such as bogies, wheelsets, bearings, air brakes, etc.) did not synchronise with the production of wagons by the wagon builders, thereby resulting in large scale stabling of wagons leading to idle investment of Rs. 28.3 crores for a period of 2½ years besides escalation claims. (Paras 8.29 and 8.30).

5. In commercial operation the design of the wagon was found deficient in respect of loadability of coal for which it was mainly intended to be used. The use of BOXN wagons for loading coal to Power Houses, Steel Plants and Railways themselves gave rise to several disputes and problems regarding carrying capacity, unloading arrangements, unloading time and weighment of wagons, to which satisfactory solutions have not been found so far. Though the Railway Board had reduced the chargeable weight for coal from the marked capacity of 58.3 tonnes to 55/54 tonnes, the Power Houses continued to report short receipt of coal to the extent of 4 tonnes from the charged weight. (Paras 8.38, 8.48 to 8.51).

Steel Plants favoure a self-discharge wagon and stated that BOXN wagon should not be commissioned for Steel Plant traffic as its use required expensive modifications to tipplers and the wagon was unsuitable for despatch of finished products. (Paras 8.56 to 8.59).

6. It was expected that for running of 4500 tonne trains the existing infrastructure (track, signalling and maintenance facilities) would be adequate. This expectation was also belied. In practice, the running of 4500 tonne trains necessitated considerable additional investments on track, signalling, strengthening of power supply and additional wagon maintenance facilities. The estimated cost of such works unertaken is Rs. 56.7 crores. Besides, for running of 4500 tonne trains three locomotives have to be deployed on certain sections even though the increase in pay load when compared with conventional trains was only marginal. The running cost of 4500 tonne trains for moving 5.4 million tonnes of coal annually would result in additional operating expenditure of Rs. 17 lakhs as compared to cost of running of BOX wagons. (Paras 8.63 to 8.67).

7. The production of BOXN wagons which move in closed circuit and have limited use appeared to have affected the wagon availability of other types of wagons particularly covered wagons. (Paras 8.68 to 8.69).

CHAPTER III

RAILWAY ELECTRIFICATION

9. Railway Electrification

Introduction

9.1 Electrification on the Indian Railways first introduced in 1925 on a small section of the Bombay area was confined till 1957 to less than 400 Kms. comprising the suburban sections of Bombay and Madras and two short main line sections between Bombay-Igatpuri and Bombay-Pune. The electrification of Howrah-Burdwan suburban section (142 kms) of Calcutta was undertaken during the first Five Year Plan and completed in 1958. Owing to inherent operational and cost advantages of electric traction over steam and diesel, it has been progressively extended from the Second Five Year Plan to busy main line sections. At the end of the Fourth Five Year Plan (1969—74) the Railways had about 4190 electrified route kilometres (Rkms). The Fifth Plan 1974—78) had envisaged an outlay of Rs. 120 crores (later reduced to Rs. 101 crores) and energisation of 1800 RKms. comprising seven sections spread over Southern, South Eastern, Northern and Western Railways. The actual progress during the six years period 1974—80 was, however, only to the extent of 728 Rkms. at an outlay of Rs. 120.81 crores.

9.2 Keeping in view the need to reduce consumption of imported diesel oil and to use the energy generated by thermal power plants, the Ministry of Railways (Railway Board), on the recommendation of the Committee of Secretaries on Energy, decided (January 1981) to step up the pace of electrification during the Sixth Plan (1980—85) and onwards so as to achieve energisation of about 1000 Rkms. per year and a Ten year programme of electrification was formulated, taking into account the break even level of traffic density (30 million GTKms.) and other high density routes carrying coal, iron ore, etc., in addition to electrifying the routes connecting the four metropolitan cities, *viz.*, Delhi, Bombay, Calcutta and Madras. It was decided to give first priority to electrification of the Delhi-Bombay (both via Western and Central Railways) and Delhi-Madras routes; the other high density routes were to follow thereafter. The programme envisaged energisation of about 2800 RKms. during the Sixth Plan and 5049 RKms. in the Seventh Plan (1985—90) on 14 and 22 sections respectively spread over all the Zonal Railways except North Eastern and North-east Frontier Railways (details in Annexure VII).

Targets and achievements

9.3 For Railway electrification works during the Sixth Plan a sum of Rs. 450 crores was allocated, part of which was to be utilised for building up organisational base to achieve the energisation target set for the Seventh Plan. Of the total plan outlay, Rs. 9.28 crores was to be met from internal resources and the balance through budgetary support. However, the annual budget allocation and actual expenditure were as under :—

(Rs. in crores)

Year	Budget allocation	Actual expenditure
1980-81	27.05	26.27
1981-82	61.00	63.31
1982-83	109.65	105.97
1983-84	85.75	88.75
1984-85	150.55	138.64
TOTAL	434.00	422.94

9.4 At the beginning of the Sixth Plan, electrification on seven sections covering 1297 RKms. on Central, Southern, South Central, South Eastern and Western Railways was in progress. Work on twenty new sections (4964 Rkms.) was sanctioned upto 1984-85. Consequently, the Plan outlay got distributed over twenty seven ongoing works. The dispersal of funds resulted in patchy electrification of sections/routes over 1522 RKms. during the Sixth Plan (Annexure VIII), *i.e.*, about 46 per cent short of the target (2800 Rkms.); while the actual expenditure of Rs. 422.94 crores would be 93.98 per cent of the Plan outlay and 97.45 per cent of the budget allocation.

Project planning and execution

9.5 A review in audit of the planning and execution of the following electrification projects revealed delays in execution, non materialisation of the expected benefits, lack of proper planning and instances of extra expenditure as mentioned below.

9.6 *Waltair-Kirandul.*—Electrification of this section (471 RKms.) on South Eastern Railway had been under execution during the Fifth Plan. In para 7 of the Report of the Comptroller and Auditor General of India—Union Government (Railways), 1977-78 it

was, *inter alia,* mentioned that due to changes in the scope of work (sanctioned in December 1970) in course of execution the original estimates of Rs. 19.05 crores had to be revised (June 1974) to Rs. 33.59 crores. This was followed by further upward revisions to Rs. 51.03 crores in January 1978 and Rs. 57.24 crores in February 1984, incorporating the cost of additional facilities (Rs. 171 lakhs), besides increases in establishment charges, cost of construction and electrification of additional staff quarters and maintenance and upkeep cost of assets till complete energisation of the section. The booked expenditure on the project upto November 1985 was Rs. 53.84 crores (gross).

9.7 The changes in the scope of the electrification scheme also necessitated revision of original target for its completion from March 1975 to March 1976 and finally to 1980-81. The actual energisation of the section was, however, completed in phases—Kirandul to Jagdalpur (149 Rkms.) in August 1980 and upto Waltair (472 Rkms.) in December 1982. The delay of about six years in execution of the project resulted in non-achievement of anticipated savings of Rs. 15.90 crores (at the rate of Rs. 2.65 crores per annum) in working expenses. Besides, the delay resulted in avoidable expenditure on account of payment of compensation amounting to Rs. 45.25 lakhs to OHE contractors, higher minimum guarantee charges of Rs. 56.34 lakhs to Madhya Praesh Electricity Board (MPEB) upto March 1984 and increased establishment charges estimated at Rs. 182.23 lakhs.

9.8 The other objectives of this electrification scheme, *viz.*, optimisation of the capacity for increasing the throughput from the then existing 6 million tonnes to 12 million tonnes per annum and running of heavier trailing loads of 80 BOY wagons (7200 tonnes) for which OHE was redesigned (cost : Rs. 1.24 crores) did not materialise as the volume of traffic on the electrified route during 1980-81 to 1983-84 varied between 5.38 and 6.73 million tonnes only, while the trailing load continued to be 50 BOY/ BOX(N) wagons (*i.e.,* 4500 tonnes).

9.9 The Railway Board stated (February 1986) that the main reasons leading to the revision of original targets of completion and delay in actual execution were :

(a) the need to have a fresh examination of number and location of traction sub-stations and design of OHE to be suitable for increasing throughput in future which led to delay in finalisation of contracts for OHE and sub-stations;

(b) diversion of funds to other ongoing projects of Tundla-Delhi and Vijayawada-Gudur sections which were given higher priority;

(c) failure of the indigenous suppliers to deliver insulators necessitating import;

(d) delayed availability of locos for trial;

(e) rechecking by RDSO of the design of S&T circuits and telecommunication cables because of higher current in the OHE; and

(f) delayed release of electric power by Madhya Pradesh Electricity Board because of disputes in the payment of compensation/ minimum guarantee charges.

9.10 *Vijayawada-Gudur.*—The electrification of this section on South Central Railway was justified on grounds of faster movement of traffic and reduction in the movement of coal and diesel tank wagons. It was anticipated that on completion of electrification work by March 1976, there would be (a) elimination of locking up of large number of coal wagons and release thereof for general loading, (b) financial return of 13.4 per cent and 10.77 per cent over diesel and steam traction respectively, and (c) improvement in financial viability of the Railway.

9.11 In para 21 of the Advance Report of the Comptroller and Auditor General of India—Union Government (Railways) for 1980-81 a mention was made of delays in completion of electrification of this section (293 RKms.), resultant escalation in the project cost, non-materialisation of the anticipated traffic, etc. Though the electrified section was opened to traffic in December 1980, seven material modification works costing Rs. 2.87 crores were sanctioned by the Railway Board during the period from May 1980 to August 1981 of which five had been completed and two were still (February 1986) in progress. Against the total estimated cost of Rs. 40.10 crores (including the cost of material modification works) the booked expenditure to end of September 1985 was Rs. 36.90 crores.

9.12 Besides, non-realisation of expected savings in working expenses amounting to about Rs. 10.41 crores on account of delay of about 4½ years in energisation of the section which is attributed to non-availability of adequate funds and difficulty in getting insulators, telecommunication cables, etc., actual traffic on this electrified route was about 9438 million GTKms on average per annum during 1981-82 to 1984-85 (upto June 1984) against the anticipation of 11,143.21 million GTKms. In spite of non-

materialisation of the anticipated traffic and electric loco holding of 87 numbers (July 1984) being surplus to the extent of 13.8 per cent, if reckoned with reference to even the lowest engine utilisation of 346 kms. per day per engine on line (1982-83), costlier diesel operation was resorted to on this electrified route for 2461.6 million GRkms., *i.e.*, about eight per cent of the traffic offering during 1981-82 to 1984-85, as a large proportion of the traffic on north and south routes was for destinations reached via Gudur-Renigunta (un-electrified section) and instead of changing engines both at Vijayawada and Gudur trains were run to their destinations with diesel engines. This entailed an extra expenditure of Rs. 63 lakhs (at 1981-82 rate differential between diesel fuel and electric power).

9.13 *Ahmedabad-Sabarmati.*—The abstract estimate sanctioned in October 1967 for electrification of Virar-Sabarmati section provided for electrification upto Sabarmati. The electrification upto Ahmedabad was completed in 1974. The electrification of a short stretch of 6 RKms. from Ahmedabad to Sabarmati (involving laying of track equivalent to 28 kms.) was abandoned (April 1971) on the plea of the Western Railway that with the establishment of marshalling yard at Vatva (South of Ahmedabad) the loads would advantageously be taken on electric traction upto this yard and worked therefrom by pilot movement (*i.e.*, by shunting engines) to Sabarmati. Although the Railway Board did not initially agree to the proposal on the grounds that non-electrification of track upto Sabarmati would necessitate marshalling at Vatva besides change of traction for through loads upto Sabarmati, they ultimately approved (1971) the proposal accepting the explanation of the Western Railway that electric locomotives would suffer detention at Sabarmati due to slow materialisation of return loads. However, the Western Railway Administration approached the Railway Board in April 1979 to sanction electrification of this short stretch (Ahmedabad-Sabarmati) as an operational necessity, as change of traction at Vatva had been causing detention of nearly 2 1/2 hrs. each for 7-8 trains coming from Vadodara side. The project was sanctioned by the Railway Board in May 1979 and completed in 1981-82 at an estimated cost of about Rs. 1.20 crrores. The abandonment of Ahmedabad-Sabarmati section from Virar-Sabarmati electrification project lacked justification, as the operational constraints necessitating its revival (1979-80) had been visualised by the Railway Board while approving (1971) the proposal of the Western Railway. The delayed energisation of this section resulted in :

(i) an additional expenditure of Rs. 31.80 lakhs compared to the electrification cost of Rs. 3.15 lakhs per Tkm. in Virar-Sabarmati project; and

(ii) detention of loads for change of traction at Ahmedabad during the intervening period, besides diesel haulage of block loads for Sabarmati from/to Ratlam over the electrified Anand-Ahmedabad section, involving extra operating cost of Rs. 53.60 lakhs for 1980-81 and 1981-82 alone.

9.14 Further, on the electrified Ahmedabad-Surat section two pairs of passenger trains (*viz.*, Bi-weekly Navajeevan Express and weekly Trivandrum Express) are being hauled by diesel locos since their introduction from 6th April 1978 and 26th January 1984 respectively, though the concerned Divisional Railway Manager and the Chief Electrical Engineer of the Railway had proposed (December 1983 and February 1984) switching over to electric traction as it would not require any additional electric locos but result in saving of Rs. 2000 per day in fuel alone. The continued diesel haulage of these trains has entailed additional expenditure of Rs. 3.12 lakhs per annum.

9.15 *Delhi-Jhansi.*—Electrification of this section (422 RKms.) sanctioned in May 1979 and September 1980 in phases (phase I—Delhi-Mathura and phase II—Mathura-Jhansi) at an aggregate estimated cost of Rs. 45.05 crores, was expected to result in increase of line capacity for movement of anticipated increased traffic, besides saving in consumption of imported diesel oil. The original estimate was revised (September/November 1983) to Rs. 113.85 crores due to increase in the cost of major inputs, changes in specification and the scope of work at the instance of the Railway Board. The revised estimate was sanctioned in July 1985 for Rs. 113.76 crores.

9.16 The original estimate provided for use of alluminium catenary, in place of cadmium copper catenary, approved by the Railway Board in March 1978 as a measure of reducing cost of electrification by about Rs. 15000 per RKm. Indents placed (July 1979 and January 1980) for 430 M.T. of alluminium catenary having not been processed in the Railway Board till July 1980, Central Organisation for Railway Electrification (CORE) proposed use of costlier copper catenary keeping in view the energisation target for phase I of the project by 31st March 1983. The change over, which involved an extra expenditure of Rs. 1.65 crores for the entire project, was approved by the Railway Board in October 1980. The use of copper catenary was later (February 1981) decided also for other schemes (*viz.*, Vadodara-Ratlam, Mathura-Gangapur City and Chandrapura Complex aggregating to 627 kms.) sanctioned prior to 1981-82 in view of the great urgency of achieving the energisation target set for the Sixth Plan and poor progress in the development of mass production of alluminium

alloy catenary. The objective of achieving the Plan target (2800 RKms.) for which use of costlier copper catenary was resorted to, however, remained unrealised as mentioned in paragraph 9.4 above, while the saving of Rs. 2.46* crores expected from use of alluminium catenary on three other projects mentioned above was also not achieved.

9.17 In terms of the OHE contracts concluded (February 1982) with the approval of the Railway Board for Mathura-Jhansi section, procurement of cement was the responsibility of the contractors. In view of the heavy rise in price of cement on its partial decontrol the contractors requested (August 1982) for supply of the material by the Railway on payment at rates fixed for levy cement. Accordingly, the Project Administration supplied cement to the contractors out of the quota allotted for Railway Electrification at an ad hoc rate of Rs. 800 per M.T., subject to fixation of final rates by the competent authority.

9.18 The Railway Board, when approached (August 1982) by the Project Administration, did not agree (April 1984) to its proposal for amending the contracts to provide for price variation clause or alternatively to allow issue of cement by Railway at controlled price. The supply of cement to the contractors, in the meanwhile, from Railway quota was outside the scope of the contract.

9.19 The rate of recovery for cement supplied to the contractors was fixed (March 1983) at Rs. 1012 per M.T. as against the then market rate of Rs. 1200 per M.T. The dues amounting to Rs. 15.15 lakhs from contractors at the differential of Rs. 212 per M.T. between the *ad hoc* rate of Rs. 800 per M.T. and the March 1983 rate have not been recovered so far (January 1986). Even in the event of this amount being realised, the benefit to the contractors accruing from the extra contractual supply of cement would be of the order of Rs. 13.43 lakhs, compared to the then prevailing market rate (Rs. 1200 per M.T.).

9.20 The electrification of Delhi-Mathura section (phase I) was completed in March 1984 as against the original target of March 1983, the delay being attributed to late receipt of materials, delay in finalisation of site for electric loco shed, slow progress of work by OHE and S&T contractors, diversion of their resources to MTP works for Asiad 82, etc. The delay of one year deprived the saving in fuel cost assessed at Rs. 22.85 lakhs and affected the energisation target of March 1984 for phase II (Mathura-Jhansi section) also whch is now scheduled to be completed in March 1986. Out of 276 Rkms. in Mathura-Jhansi section, 101 Rkms. (Mathura-Dhaulpur) was energised by March 1985. Delay in execution of the project deprived the Railways of the benefit of saving in fuel cost, haulage of heavier loads, etc., expected from the electrification scheme. The actual expenditure incurred on the project upto March 1985 was Rs. 91.12 crores representing 80 per cent of the revised estimate cost (Rs. 113.76 crores).

9.21 *Sitarampur-Mughalsarai.*—Electrification of this section (557 RKms.) was sanctioned in 1981-82 at an estimated cost of Rs. 86.62 crores and targeted for completion in 1985-86 in consideration of traffic density (43.5 million GTKms. by 1988-89) and the need to eliminate diesel/steam operation undertaken on the electrified Howrah-Sitarampur section to avoid change of traction at Sitarampur and also for providing an alternative electrified route to the already saturated electrified Grand Chord line. However, in May 1981 the Railway Board decided to defer the project to the Eighth Plan on the World Bank Mission suggesting (February 1981) a re-evaluation of the line capacity potential of the electrified Grand Chord route to see if the investment on electrification of Sitarampur-Mughalsarai section could be avoided by optimising output of the existing electrified route. Based on the optimisation study completed in November 1981 the Eastern Railway recommended for providing additional traffic facilities, improved signalling and electrical inputs, etc., estimated to cost Rs. 113.84 crores without, however, specifying whether this would dispense with the need for electrification of the said section. The recommended works were approved by the Railway Board in October 1983. No time frame has, however, been laid down for completion of these works. The cheaper alternative of electrifying the Sitarampur-Mughalsarai section (Rs. 86.62 crores) which was expected to provide relief to the saturated Grand Chord section besides easing operational constraints on the main line was thus shelved, perpetuating continuance of diesel/steam haulage on the electrified route (Howrah-Sitarampur) and thereby entailing extra operating cost which for passenger services alone during 1982-83 and 1983-84 amounted to Rs. 2.92 crores. Besides, the deferment of the electrification project is likely to render infructuous the survey expenses of Rs. 1.87 lakhs incurred upto June 1981.

9.22 *Kharagpur-Midnapore.*—While electrification of Sitarampur-Mughalsarai section justified on operational considerations was postponed to the Eighth Plan, this 13 kms. section on South Eastern Railway, though not included in the approved Ten year programme for electrification of high density trunk routes was electrified in May-June 1984 at a cost of Rs. 1.84 crores by

*Worked out prorata from the extra cost of Rs. 165.50 lakhs for Delhi-Jhansi section (427. Rkms.).

reappropriation of funds from the ongoing Delhi-Jhansi priority project. The out of turn electrification of this low traffic density (5034 GTKms. per km. per day during 1982-83) section was justified on the grounds of long standing public demands for through services between Midnapore and Howrah, savings in working expenses on steam haulage (Rs. 11.54 lakhs per annum), withdrawal of conventional stock (Rs. 15.65 lakhs), etc. If the above considerations were adequate enough to justify electrification of this section not conforming to the prescribed break even level of traffic and the priorities set for high density routes connecting the metropolitan cities and/or carrying vital goods, what prevented its energisation in earlier years at comparatively less cost is not clear.

9.23 *Tundla-Agra-Bayana.*—Electrification of this short link (112 RKms.) between the trunk routes of Howrah-Delhi (electrified by 1977), Delhi-Bombay (via Western Railway) and Delhi-Madras taken up in 1985-86 at an estimated cost of Rs. 15.93 crores has been justified to avoid operational constraints and undue detention for change of traction for the traffic over this section after energisation of Delhi-Jhansi (422 RKms.) and Mathura-Gangapur City (153 RKms.) sections targeted for completion in 1985-86. Till energisation of this short link, for which no target has been set, change of traction will continue causing detention to stock (assessed at 22 and 5.3 wagon days per day for Western and Central Railways respectively) which could have been avoided if electrification of this section had been planned properly to synchronise with those of Delhi-Jhansi and Mathua-Gangapur City.

Locomotive planning

9.24 According to the norm of 0.17 loco per electrified route km. adopted for assessing the requirements of electric locomotives for the Sixth Plan, the holding of 974 locomotives at the end of March 1980 was surplus by 138 numbers to the requirements of 4918 electrified route kms. as on that date. The Sixth Plan envisaged acquisition of 316 additional locos keeping in view the requirements (476 locos) of the Plan target for energisation of 2800 Rkms. With actual production of 270 locos during 1980—85 and the surplus holding of 138 numbers the total availability became 408 locos as against the requirement of 258 locos for 1522 Rkms. energised during the Sixth Plan. This has resulted in a surplus holding of 150 locos worth Rs. 75.78 crores (at 1980-81 average production cost of Rs. 50.52 lakhs), contrary to the expectation of their being more or less even out by March 1985 (cf. para 1.16 of 167th Report of the Public Accounts Committee, 1983-84).

Non-provision of shunt capacitors

9.25 With progressive electrification of various sections on the Railways the absence/delayed provision of shunt capacitors to arrest the fall in power factor (ratio of energy available for consumption and actually consumed) below the prescribed level, for which penalty is payable under the tariffs of the State Electricity Boards, resulted in payment of penalties amounting to Rs. 4.41 crores by South Eastern, Eastern, South Central and Northern Railways during the period 1975-76 to 1983-84 as mentioned below.

9.26 For electric traciton on Howrah-Durg section of South Eastern Railway power supply is obtained mostly from Bihar State Electricity Board (BSEB) whose revised tariff (July 1970) provided for a penal clause for levy of low power factor surcharge. The provision of shunt capacitor at Bilaspur (later shifted to Manikui) proposed in August 1972 was sanctioned by the Railway Administration in November 1975 at an estimated cost of Rs. 7.99 lakhs. In December 1978 the Railway Administration placed orders on Bharat Heavy Electricals Ltd. (BHEL) for supply of the equipments (costing Rs. 7.06 lakhs) by 31st May 1980 which was extended to December 1981. The prices of inputs having nearly doubled in the meanwhile the estimate was revised to Rs. 17.29 lakhs and sanctioned by Railway Board in 1983. The shunt capacitor and its related oil circuit breakers received by the Railway Administration in June 1980 and April 1982 respectively was finally commissioned in January 1984. During the intervening period from 1975-76 to 1983-84, the payments for low power factor surcharge by the Railway amounted to Rs. 59.02 lakhs.

9.27 In para 26 of the Advance Report of the Comptroller and Auditor General of India for the year 1981-82—Union Government (Railways) a mention was made of the failure of the Eastern Railway to take cognisance of the tariff conditions of BSEB and their advice for installation of shunt capacitors, resulting in payment of Rs. 91.39 lakhs towards fall in power factor at Jamalpur (Rs. 4.48 lakhs), Chandauli/Gaya (Rs. 39.13 lakhs) and Sonenagar (Rs. 47.78 lakhs) grids during the period from 1977-78 to 1981-82. While necessary shunt capacitors (costing about Rs. 92,800) were provided at Jamalpur in April 1981, those proposed for Sonenagar and Chandauli in 1976 and February 1982 respectively at a cost of Rs. 8.5 and Rs. 17.72 lakhs still (January 1986) await installation. Consequently, the Railway had to pay penalty charges amounting to Rs. 81.13 lakhs during 1982-83 to 1983-84.

9.28 The South Central Railway Administration had estimated (1977) that power factor at five substations on the Vijayawada-Gudur section would be below the prescribed level, involving an annual penalty payment of Rs. 52.78 lakhs. However, for improving the power factor at the Railway installations shunt capacitor was commissioned in December 1982 at one substation (Krishna Canal) only at an estimated cost of Rs. 5.00 lakhs. The absence of shunt capacitor at this point till December 1982 and at five other substantions (including Gudur substation) sofar entailed payment of penalty amounting to Rs. 29.09 lakhs during the period September 1980 to June 1984.

9.29 Similarly, for the six substations on the electrified Mughalsarai-Kanpur section provision of shunt capacitors was sanctioned in February and May-June 1984 at an estimated cost of Rs. 103.18 lakhs. The installation work at four substations is expected to be completed by November 1985 after which work relating to other two stations is proposed to be taken up. Meanwhile, Railway Administration had to pay penalty charges amounting to Rs. 1.80 crores for the period February 1983 to July 1985.

9.30 *Summing up*

(a) Dispersal of available resources over a large number of projects resulted in 'patchy' electrification aggregating to about 1522 Rkms. against the target of 2800 Rkms. for the Sixth Plan (Paras 9.2 to 9.4).

(b) Delays in execution of electrification works in Waltair-Kirandul section resulted in cost escalation from Rs. 19.05 to Rs. 57.24 crores besides non-realisation of expected savings in working expenses amounting to Rs. 15.90 crores. The delays in completion of electrification work in Vijayawada-Gudur and Delhi-Mathura sections also resulted in non-realisation of savings in working expenses of Rs. 10.41 crores and Rs. 0.23 crore respectively (Paras 9.6, 9.7, 9.12 and 9.20).

(c) The objective of increasing line capacity through electrification of Waltair-Kirandul section remains unfulfilled (Para 9.8).

(d) Despite non-materialisation of anticipated traffic and adequate availability of electric locos costlier diesel haulage had been continued on the electrified Vijayawada-Gudur section entailing extra expenditure of Rs. 63 lakhs. (Para 9.12).

(e) Lack of proper planning for electrification of Ahmedabad-Sabarmati section resulted in additional expenditure of Rs. 31.80 lakhs and diesel haulage over electrified route involving additional operating cost of Rs. 53.60 lakhs . ((Para 9.13).

(f) Non-adoption of electric traction for Navajeevan and Trivandrum Express trains between Ahmedabad-Surat resulted in non-realisation of fuel saving of Rs. 3.12 lakhs per annum. (Para 9.14).

(g) Use of copper catenary in lieu of cheaper alluminium catenary in Delhi-Jhansi and three other sections involved non-realisation of savings of Rs. 4.11 crores (Para 9.16).

(h) Extra contractual supply of cement to the contractors on Delhi-Jhansi project gave an unintended benefit of Rs. 13.43 lakhs to the contractors. Dues amounting to Rs. 15.15 lakhs also remain unrecovered from the contractors (Paras 9.17 to 9.19).

(i) As a result of deferment of electrification of Sitarampur-Mughalsarai section sanctioned (1981-82) on operational necessity to the Eighth Plan (a) survey expenses of Rs. 1.87 lakhs may become infructuous, and (b) diesel/steam haulage on electrified route continues involving extra operating cost amounting to Rs. 2.92 crores for passenger services alone during 1982-83 and 1983-84. (Para 9.21).

(j) Kharagpur-Midnapore section, though not fulfilling the prescribed criteria for electrification and included in the approved Corporate plan, was energized out of turn (May-June 1984) by diversion of funds from other ongoing priority project. (Para 9.22).

(k) Lack of synchronised planning for electrification of Tundla-Agra-Bayana section with the energisation targets of Delhi-Jhansi and Mathura-Gangapur City sections will cause detention to stock for change of traction. (Para 9.23).

(l) Progress of electrification during the Sixth Plan having not matched even the scaled down acquisition programme of electric locomotives, resulted in surplus holding of 150 electric locos worth Rs. 75.78 crores. (Para 9.24).

(m) Non/delayed provision of shunt capacitors to arrest fall in power factor led to avoidable payment of penalty charges of about Rs. 4.41 crores to the State Electricity Boards. (Paras 9.25 to 9.29).

CHAPTER—IV

METROPOLITAN TRANSPORT PROJECT, CALCUTTA

10. Metropolitan Transport Project, Calcutta

Introduction

10.1 During the Fourth Plan period the Railways undertook techno-economic feasibility studies for Mass rapid transit system in Bombay, Calcutta, Delhi and Madras. Railway Metropolitan Transport Organisations were set up in Calcutta and Bombay in July 1969 and in Delhi and Madras in July 1971. A separate provision of Rs. 50 crores was made for these projects outside the Railways' Plan, which was reduced to Rs. 20 crores during mid term appraisal. However, only one project of rapid transit system (under-ground) between Dum Dum and Tollyganj (16.43 km.) in Calcutta estimated to cost Rs. 140.3 crores was sanctioned in June 1972 [cf. Para 7.25 of the Report of the Comptroller and Auditor General of India for the year 1973-74—Union Government (Railways)]. While sanctioning the project, the cabinet desired the Railway Board to investigate the possibility of setting up an independent Authority for Metropolitan Transport, Calcutta. The Railway Convention Committee (1971) too recommended (February 1973) constitution of necessary administrative authority who could also associate with the project during the period of its construction. However, even after a lapse of over 12 years, a final decision for constituting an independent authority is yet to be taken (November 1985). In the meantime the project continued to be executed by the Railways on agency basis.

10.2 *Project cost, Planning and Execution of work*

10.2.1 *Delays in preparation and sanction of detailed estimates*

The Railway Board had desired the Administration to submit detailed estimate for 'General Charges', 'Land' and 'Preliminary Expenses' by 31st December 1972, and for other capital heads in due course. The first revised abstract estimate (Rs. 249.54 crores) involving an increase of 78 per cent over the original estimated cost was submitted by the Administration only in 1974 and sanctioned by the Railway Board in December 1975.

The actual outlay by the end of the year 1980-81 was Rs. 95.70 crores only. A second revised abstract estimate for Rs. 559.14 crores submitted for sanction in December 1981 was returned (October 1982) by the Railway Board with the instructions to frame and submit detailed estimate by November 1982, based on the actual cost of completed works, the likely expenditure to be incurred on the works in progress at the accepted tendered rates, and evaluation of the balance works at the prevailing price level. As per projection of likely cost intimated to the Railway Board in March 1983 the project was expected to cost Rs. 764.83 crores. The required detailed estimate has not so far (November 1985) been submitted by the project Administration. The amount held under objection (March 1985) for want of estimate was Rs. 179.18 crores.

In the absence of sanctioned detailed estimates showing quantities, rates and costs based on realistic basis, the correctness of the quantities included in the tender documents and evaluation of the tendered rates could not be ensured. For instance in as many as 28 major contracts (each costing over Rs. 50 lakhs) awarded upto May 1983, the value of the accepted tenders was higher by 26 to 219 per cent than the estimated value shown in the tender documents. Besides, there were wide variations between the contracted quantities and the quantities actually executed. A review of 13 completed contracts in audit showed that such variations were as high as 240 to 1340 per cent over the contracted quantities.

These variations resulted in vitiation of the tenders as originally invited and the contracts as entered into. [A comment as to how the changes in the scope of work and construction methodology as well as extra contractual payments sanctioned during the execution of the contract vitiated the comparative evaluation of tenders made initially for the purpose of awarding contracts and led to additional liability, had been included in Para 13 of the Report of the Comptroller and Auditor General of India for the year 1978-79—Union Government (Railways), dealing with contract section 2 of the Metrol Railway].

10.2.2 *Operation of Non-Scheduled items*

A review of 35 completed contracts by Audit disclosed that 291 non-scheduled items had been

sanctioned during execution of the works upto December 1983 involving payments of Rs. 77 lakhs. The non-inclusion of these items in the original tenders/contracts resulted in depriving the Administration of the benefit of competitive rates.

10.2.3 *Delays in finalisation of tenders and awarding of contracts*

During the period June 1972 to June 1984 the Administration awarded 79 major contracts for structural Engineering Works (diaphragm walls, subway structures including tunnels, etc.) in 42 contract sections. Out of the total projected outlay of Rs. 764.83 crores (March 1983), the value of Civil structural works was estimated at Rs. 367.01 crores. A review of 16 major civil engineering tenders and contracts in audit revealed that delays in finalisation of tenders|contracts ranged between 12 and 34 months.

10.2.4 *Grant of extensions to contractors and Postponement of completion date*

2.4.1 For the major civil engineering contracts (diaphragm walls and sub-way structures, etc.), the Administration had fixed the period of completion between 18 months to 56 months, depending upon the magnitude of work involved. However, extensions ranging between 10 and 68 months were granted on the Administration's account for reasons like delay in handing over worksites, non-availability of steel and cement, etc. The grant of long extensions (10 to 68 months) with the attendant additional financial liability on account of escalations and contractors claims for extra charges for idling of labour, plant and machinery during the period of extensions not only resulted in slowing down the progress of work but also pushed up the cost of construction as mentioned in succeeding paragraph.

Between June 1972 (when the original abstract estimate was prepared) and March 1983 (when the latest projection was made) there had been steep increase in the estimated cost of Civil engineering works (359.4 per cent), Electrical engineering works (903.93 per cent), Signalling and Telecommunication engineering works (318.02 per cent), General charges (277.96 per cent) and Rolling Stock (820.53 per cent). This was mainly attributable to the escalation in the rates of material and labour (wages), change in the methodology of works from sheetpiles to diaphragm walls, introduction of new items, increase in quantities of work and the likely prices of rolling stock having become known after placement of orders on the suppliers, etc., etc.

2.4.2 In the course of execution of works in a number of contract sections disputes arose on account of claims preferred by the contractors for payment of extra charges for idle labour, plant and machinery as also for overheads, etc. As at the end of June 1984, 8 cases had been referred to arbitration for contractors' claims aggregating to Rs. 5.31 crores. These cases have not so far (January 1986) been decided.

2.4.3 The work on the project commenced in March 1973 and was expected to be completed by the end of 1978. Subsequently, the date of completion of the 1st phase of construction from Dum Dum to Shyam Bazar and from Esplanade to Tollyganj was fixed as 1984, which was later on changed to March 1985. The second phase from Shyam Bazar to Esplanade was scheduled to be completed by March 1987. However, the first phase was not completed due to various administrative delays/lapses, till March 1985 as stipulated. Only two stretches of it running from Esplanade to Bhowanipore (3.57 km.) and from Dum Dum to Belagachia (2.225 km.) were opened to traffic with limited service in October and November 1984 respectively.

10.2.5 *Grant of Advances*

For execution of underground construction work various utilities and service lines like telephone cables, electric power cables, gas, water and sewerage pipelines, tram lines, etc. passing through/across Merto Railway alignment had to be diverted or shifted by the utility agencies concerned. The expenditure for shifting was to be borne by the project Administration. Accordingly, advances as demanded by these agencies were paid by the Administration. Although in several cases the diversion or shifting of the utilities/service lines had been completed long ago, the completion reports thereof had not been drawn by the concerned utility agencies. Consequently, the actual expenditure incurred by the agencies out of the advances paid by the Administration, could not be known. A review in audit of the advances paid to the utility agencies showed that an amount of Rs. 1.91 crores pertaining to the period 1973-74 to 1981-82 was lying unadjusted at the end of January 1986.

Advances were also paid to suppliers of steel and cement for getting supplies of materials. Large amounts of such advances had been lying unadjusted since 1978-79 due to materials not having been supplied or short supplied. The amount of such advances lying unadjusted for over one year was

Rs. 1.41 crores as at the end of January 1986. The Administration stated (June 1985) that a special drive had been launched for clearance of such advances.

10.2.6 *Allocation of Funds and Progress of Expenditure*

According to the project Administration the prolongation of construction was, amongst other reasons also due to paucity of funds. A review of the position has revealed that whatever funds had been allotted through annual budgets upto the year 1975-76 had not been utilised fully, resulting in surrender of funds ranging between 29 and 51 per cent of the original allotments upto the year 1975-76. Even during the year 1981-82 the original allotment of Rs. 35.65 crores was revised to Rs. 32.60 crores during mid term appraisal. However, the actual expenditure was only Rs. 31.53 crores, resulting in surrender of Rs. 1.07 crores. Similarly, during the year 1984-85, while the original allotment was for Rs. 80.70 crores, the actual expenditure incurred was Rs. 70.44 crores, resulting in surrender of funds of Rs. 10.26 crores.

The Administration had attributed the surrenders, as mentioned above, to delays in finalisation of global tenders, unprecedented rains and consequent deluge resulting in slowing of the tempo of electrical works from June to October 1984, non-supply of steel by Steel Authority of India Ltd., non-clearance of Train Radio system under trial and reduced scope of signalling work.

10.2.7 *Financial Viability*

Based on the original estimated cost of Rs. 140.3 crores, the project was considered financially viable if an average fare of 32 paise per passenger trip (to break even with costs including 6 per cent interest charges) was adopted. Subsequently, on a long term economic view, 30 paise fare per passenger trip was recommended necessitating a subsidy of Rs. 1 crore per annum. In the context of increased capital investment over the years, the Project Administration suggested a fare of Re. 1 per passenger trip for the present. Even with the increased fare of Re. 1, an annual subsidy of Rs. 62 crores per annum would be needed if the Administration is required to pay dividend @6.5 per cent on the capital investment of Rs. 764.83 crores.

10.3 *Metro Coaches*

The manufacture of metro coaches was undertaken indigenously for the first time in the country. It was, therefore, decided that the Integral Coach Factory, Madras should supply 16 prototype coaches for carrying out trial runs over a period of 2 years or 2 lakh kms. whichever is earlier, to prove the reliability of design, workmanship and materials before starting series production. The first order for manufacture of 8 prototype coaches was placed on the Integral Coach Factory in August 1977 and the second order for series manufacture of 136 coaches inclusive of the second lot of 8 prototype coaches in July 1978. The manufacture of the prototype coaches was to be so planned that the field trials could start in December 1979/July 1980. The supplies of the traction equipments were given delivery terms to supply the equipments for prototype by July and August 1980. The prototype coaches were, however, received on Metro Railway during the period September 1981 to May 1983. Till July 1984 the coaches had covered trial runs as indicated below :

Rake (comprising 4 coaches each)	Type of equipments	Dates of receipt	Date of commencement of trial	Total Kilometerage of trial run done
1st	BHEL	4-9-1981	29-9-1981	16138
2nd	BHEL	5-6-1982	24-7-1982	17181
3rd	NGEF	31-1-1983	4-6-1983	16497
4th	NGEF	22-5-1983	10-6-1983	16930

In order to commence commercial operation of Metro Railway over a stretch of 1.74 km. approximately by 1984, the Administration approached the Railway Board in February 1982, to give clearance for undertaking series manufacture of 12 coaches out of the total number of 136 coaches to be supplied on the basis of trial run of BHEL type prototype. Formal order for manufacture and supply of 12 such coaches was placed by the Railway Board on the Integral Coach Factory in July 1982. All the 12 coaches were received from Integral Coach Factory during the period from March 1984 to July 1984 out of which 8 coaches were lowered into Metro Railway tunnel at Park Street station and the remaining coaches were kept stabled at Dum Dum. In the meanwhile apprehending that it may not be possible for the Integral Coach Factory to deliver the 12 coaches in time to enable the Administartion to commence the commercial operation, the project Administration decided with the approval of the Railway Board in June 1983 to withdraw the BHEL type prototype rakes, comprising 8 coaches from the trial run and send them to the Integral Coach Factory, Madras for carrying out rectifications and modifications based on the trial run undertaken till then. Consequently, the BHEL type rakes (8 coaches) were withdrawn from

the trial run eventhough the targeted period of 2 years or kilometerage of 2 lakh kms. of their trial run had not been completed. While the first rake was withdrawn in July 1983 after completing trial run for 21 months and 16138 kms., the second rake was withdrawn in September 1983 after completing trial run of 14 months and 17181 kms. It is not understood how the Administration has ensured the reliability of the design, workmanship and materials of the coaches without the scheduled trial runs.

10.4 *Damages due to heavy rains*

The Metro Railway tunnels including stations from Esplanade to Bhowanipore got completely submerged in June 1984 due to heavy rainfall. Subsequently, extensive damages were caused to rolling stock, electrical, signalling and tele-communication equipments. The air conditioning and ventilation, lighting and false ceiling works wherever completed or were in the advance stage of completion had been affected badly. The traction cum auxiliary sub-stations at Park Street, Maidan and Bhowanipore had also been affected. The laying of cables between Rabindra Sadan, Park Street/Bhowanipore had also been badly damaged. The value of the contracts awarded upto July 1984 for de-watering and immediate restoration work was of the order of Rs. 46.29 lakhs.

A high level Expert Committee appointed by the Railway Board in July 1984 assessed (September 1984) the damage at Rs. 1 crore. As per the project Administration's report submitted to the Railway Board in February 1985 the loss was assessed at Rs. 2.4 crores which included Rs. 1.5 crores on account of rehabilitation of the flood affected coaches. It was also mentioned therein that the Integral Coach Factory had indicated the cost of repairs for the rehabilitation of the flood affected coaches as Rs. 3.76 crores.

10.5 *Officers Rest House*

The project Administration had hired accommodation to be used as rest house for its officers. As this accommodation was found unsuitable and other rented accommodation was not available even after invitation of tenders, the Administration requested the Railway Board to approve the construction of an officers' rest house at an estimated cost of Rs. 4 lakhs over the second floor of the Judges Court Officers' Rest House of Eastern Railway. The work was sanctioned by the Railway Board in May 1981 and was entrusted to Eastern Railway Administration as a deposit work. Although, the rest house was initially proposed to have two suites, the number was revised to three suites on the plea of structural requirements for construction of an upper floor. However, the Railway Board's sanction for carrying out these major modifications was not obtained. The actual expenditure (upto June 1983) was Rs. 9.31 lakhs as against sanctioned cost of Rs. 4 lakhs. Detailed estimates for the work have not so far been prepared (December 1985). The Rest House, though completed in March 1983 has not been handed over to the Project Administration so far (December 1985). As a result, the Project Administration hired private accommodation in June 1983 on a monthly rental of Rs. 3 thousand for the use of Railway Officers visiting Calcutta in connection with Metro Railway's work.

10.6 *Summing up*

1. Although the Convention Committee recommended in February 1973 that the Government should take a decision in regard to the Administrative Authority for managing the Metro on proper lines and also associating it with the project during construction, a final decision has not been taken so far (December 1985). (Para 10.1).

2. The delays in preparation and sanction of detailed estimates and incurrence of expenditure without detailed estimates caused wide variations between the tendered quantities, contracted quantities and the quantities as actually executed. This resulted in vitiation of the tenders as invited and the contracts as entered into. (Para 10.2.1)

3. The operation of non-scheduled items (involving payments of Rs. 77 lakhs) deprived the Administration of the benefit of competitive rates. (Para 10.2.2)

4. There were delays of 12 to 34 months in finalising/awarding the tenders/contracts leading to delayed commencement of the works and surrender of funds. (Para 10.2.3)

5. The grant of long periods of extensions (10 to 68 months) with the attendant additional financial liability on account of escalations and contractors' claims for extra charges for idling of labour, plant and machinery, etc. slowed down the progress of the work and also pushed up the cost of construction over the years.

The various administrative delays/lapses were responsible for the postponement of the target date of completion of the project from end of 1978 to March 1987. (Para 10.2.4)

6. In the absence of completion report to be drawn by the utility agencies to vouchsafe the expenditure incurred by them against the advances of Rs. 1.98 crores paid by the project Administration during 1973-74 to 1981-82, it could not be known whether the advances had been spent in entirety or any amount is due for refund to the Administration. (Para 10.2.5)

Advances of Rs. 1.41 crores paid to suppliers of steel and cement are yet (January 1986) to be adjusted after taking into account the materials not supplied or short supplied. (Para 10.2.5)

7. The surrender of funds after allotment had the effect of prolonging the period of construction and the consequent escalation in the cost of the project and also showed lack of preparedness on the part of the Administration in executing the work according to the time schedule. (Para 10.2.6)

8. The cost of the project having gone up from Rs. 140.3 crores to Rs. 764.8 crores, the financial viability worked out at the time of submission of the project report is no longer relevant. (Para 10.2.7)

9. It is not understood how the Administration has ensured reliability of the design, workmanship and material of the Metro coaches without coverage of their scheduled trial runs. (Para 10.3)

10. Had the rest house completed in March 1983 been handed over to the Project Administration, the hiring of private accommodation by it in June 1983 at a monthly rental of Rs. 3 thousand could have been avoided. (Para 10.5)

CHAPTER V

PURCHASES AND STORES

11. Overpayment due to retrospective revision of price of Casnub Bogies

Cast Steel bogies (Casnub bogies 22 W) is one of the major components of wagon. The Railway Board procure the bogies and supply them free to wagon builders.

In November 1980, the Railway Board placed orders on firm 'A' of Bombay and firm 'B' of Calcutta for manufacture and supply of 154 bogies by each firm for broad gauge Hopper wagons with an option to increase or decrease the quantity on order by 30 per cent. The delivery was to be completed by 31st October 1981. The stipulated price as per contract was Rs. 37,400 per bogie with 24 springs. The Railway Board placed further orders in April 1981 on these two firms for manufacture and supply of 46 bogies each exercising option clause and extending the delivery date to 7th December 1981. Both the firms completed the supply within the stipulated date.

The Railway Board had invited another tender in April 1981 for similar bogies for BOXN wagons. When this tender was under consideration during April-May 1981 firms 'A' and 'B' who had also quoted their rates indicated to the Railway Board that they would be completing the orders on hand by July 1981 and further orders be placed on them to ensure the continuity in the production line. Firm 'A' also stated that the load situation was such that unless bulk production was continued the productivity gains achieved would become ineffective. Both these firms offered to supply further quantities on terms and conditions of November 1980 contracts stating that they would not ask for any increase in price of Rs. 37,400 on the quantities already delivered upto the date of the new contract against April 1981 tender if that price was higher and in the event of the forthcoming contract price being lower than Rs. 37,400 per bogie, they would refund the difference between the two prices.

The Railway Board placed ad hoc orders for 300 bogies on firm 'A' in November 1981 and for another 300 bogies on firm 'B' in January 1982 at the rate of Rs. 37,400 per bogie with the stipulation that "the price which would be finally settled against this Ministry's tender dated 28th April, 1981 presently under consideration would be applicable to the quantity outstanding on the date of the new contract. In case prices are lower in the new contract to be finalised in comparison to the subject contract the same lower price will apply to the entire '300 numbers' being additionally ordered."

The Railway Board finalised the new contract for bogies for BOXN wagons in December 1981 and issued advance letters of acceptance to firms 'A' and 'B' on 7th January, 1982 for supply of 3000 bogies each at the rate of Rs. 41,500 per bogie. However, the firms desired modifications of various terms such as wages escalation, scrap assistance, etc., besides technical deviations/relaxations, so as to enable them to give unqualified acceptance. Accordingly, the terms were modified (e.g. ceiling on wages escalation was revised from 10 per cent to 15 per cent, substantial revision of attendant conditions for supply of scrap, etc.) and contracts were entered into with these firms on 6th May, 1982. By that time, firm 'A' had completed the supply of additional quantity of 300 bogies and firm 'B' had supplied 200 bogies leaving a balance of 100 bogies.

Instead of making payment for 500 bogies supplied upto 6th May, 1982 at the rate of Rs. 37,400 each the Railway Board deleted the quantities ordered in November 1981 from the contract and amended the May 1982 contract, in November 1982, providing for the payment at higher price of Rs. 41,500 per bogie for 420 bogies (500−80 supplied upto February 1982) which resulted in an overpayment of Rs. 17.22 lakhs.

In reply to an audit observation, the Railway Board stated (September 1985) that the April 1981 tender was finalised in December 1981 and a letter of acceptance was issued to the above firms on 7th January, 1982; but due to some clarifications/amendments sought for by the firms the formal contracts were placed on 6th May 1982. Accordingly, it was decided that supplies after 1st February, 1982 i.e., after allowing a reasonable time for placement of formal contract (about 3 weeks from the date of acceptance) should be paid at higher prices.

It has, however, to be mentioned that the firms having sought for amendments, the acceptance of offer communicated on 7th January, 1982 did not come into effect till 6th May, 1982, the date of new contract. Therefore, the amendments of the orders in May 1982 enabling the firm to claim payments at higher rates were not in the interest of the Railway.

12. Excess payments to a foreign firm

In the context of contemplated high speed train operations, the Ministry of Railways (Railway Board) had approved (October 1966) procurement of a Track Recording-cum-Research Car (TRRC) at an estimated cost of Rs. 12 lakhs (later enhanced to Rs. 84.03 lakhs) for undertaking rational studies by the Research, Designs and Standards Organisation (RDSO), Lucknow of track structure, track vehicle interaction, etc. and laying down track tolerances as also for rationalisation of track maintenance and renewals. While the TRRC was manufactured (September 1974) in Integral Coach Factory (ICF) at a cost of Rs. 70.52 lakhs, supply of various equipments (aggregate value $ 7,53,440 equivalent to Rs. 54 lakhs) had been ordered (February 1972) by the Railway Board on an U.S.A. firm, stipulating delivery by 6th February 1973, finally extended upto 30th October 1975.

The contract provided for 90 per cent payment of net f.o.b. value of the equipments (less 5 per cent consultancy fee payable to the firm's Indian Agent) on proof of inspection and despatch and balance 10 per cent after successful commissioning of the equipments in India, subject to the contractor furnishing a bank guarantee to cover the warranty obligations. Final acceptance of equipments was subject to their commissioning by the supplier within a period of six weeks following complete installation in the integral vehicle with the advice and assistance of the contractor.

Of the supplies worth $ 7,26,738 received and paid for (90 per cent—5 per cent) by May 1974, equipments valuing $ 34,056.78 had to be returned for repairs in the firm's works as they were found to be defective during the process of commissioning. On the firm's expressing inability to complete the work of Absolute Vertical Profile (AVP—Cost $ 23,500 or Rs. 2.07 lakhs) in USA, the Railway Board permitted the firm (April 1974) to do the work in India on the condition that payment for this item would be made only after it had been inspected and passed in India.

While the equipments sent for repairs were not forthcoming resulting in idling of the items already received, the firm expressed (February 1976) reservations about its contractual obligations for commissioning of the TRRC. The Railway Board had, in the circumstances, to arrive (February 1976) at an agreement with the firm providing, *inter alia*, for payments of—

(i) 75 per cent of the balance 10 per cent withheld amount without bank guarantee; and

(ii) the cost of the AVP ($ 23,500) after commissioning of the TRRC or five weeks from the date of arrival of the firms service engineers at Lucknow, whichever was earlier. Thereupon, the firm was to provide a warranty for three months from the date of commissioning of the equipments and the balance 25 per cent of 10 per cent was to be paid within a week of expiry of the warranty period.

The firm's engineers arrived at Lucknow on 13th March 1976 and worked at the RDSO from 10th to 17th April 1976. In the invoice (17th April 1976) sent to the India Supply Mission (ISM), Washington by the RDSO certifying payments to be made to the service engineers to mention was made of the commissioning or otherwise of the equipments. The firm, however, advised (21st April 1976) the ISM, Washington that the plant had been commissioned by its service engineers.

Based on the unqualified report of the RDSO and on the firm asserting that the plant had been commissioned and also as the period of five weeks since the arrival (13th March 1976) of the service engineers at Lucknow was over by 17th April 1976, the ISM, Washington released (21st April 1976) payments of not only $ 54,505.35 towards 75 per cent of the balance 10 per cent but also the full value of the AVP ($ 23,500) without ascertaining whether firm's assertion about commissioning of the plant was correct. The payment thus released was $ 27,900.75 in excess of that ($ 50,104.60) authorised (9th June 1976) by the Railway Board towards 75 per cent of balance 10 per cent payments for other than the AVP, after providing deduction of $ 4,400.75 for the Measuring Wheel System (MWS-Cost $ 58,010) which during assembly/trials in India was found to be defective. The excess payment of $ 4,400.75 for the MWS was recovered (August 1976) by the ISM Washington while releasing $ 18,168.45 as 25 per cent of balance 10 per cent payments. However, the

information that the AVP had not been passed by the RDSO engineers and the service engineers did not rectify the equipments and, therefore, the payment of $ 23,500 was not due to the firm was, belatedly communicated (in June 1977) by the Railway Board to the ISM, Washington. It was further pointed out that the release of $ 13,767.70 towards 25 per cent of the balance 10 per cent of the value of other equipments also constituted overpayment to the firm as it was contractually due only after expiry of the warranty period of three months commencing from the date of commissioning of the TRRC which could not be taken as commissioned on account of improper functioning of the MWS.

The recovery of the total overpayment of $ 41,668.45 (Rs. 3.23 lakhs), as desired (June 1977) by the Railway Board, could not, however, be effected by the ISM, Washington because the firm contended (January 1978) that its technicians had commissioned the equipments to work properly but these were mishandled and abused by the Railway engineers for lack of sufficient qualification or expertise. The possibility of legal action, as suggested by the ISM, Washington, against the firm for obtaining payments by giving an incorrect statement of its having commissioned the plant was not pursued by the Railway Board. Of the equipments left (April 1976) uncommissioned by the firm's service engineers, while the AVP (cost Rs. 2.07 lakhs) was commissioned by the RDSO in May 1982 after rectification of the defects the MWS (cost Rs. 4.50 lakhs) could be commissioned as late as September 1985.

Lack of coordination between the RDSO, the Railway Board and the ISM, Washington coupled with the latter's reliance on the supplier's claim of having fulfilled its contractual obligations in absence of any confirmation from the beneficiaries led to avoidable payment of Rs. 3.23 lakhs for the equipments which remained out of commission over the years entailing an unproductive expenditure of Rs. 6.57 lakhs, besides rendering the TRRC non-functional for the purpose expected to be served by them.

13. Western and South Central Railways—Non-commissioning of electronic in-motion weighbridges

The Ministry of Railways (Railway Board) had been considering since August 1973, the installation of electronic in-motion weighbridges at important marshalling yards for ensuring faster weighment of wagons while in slow motion (without detaching them from the rake). In paragraph 5.7 of the Advance Report of the Comptroller and Auditor General of India for the year 1980-81—Union Government (Railways), it was mentioned that developmental orders for two electronic weighbridges with facilities of print out etc., had been placed by the Railways, one in February 1980 for installation at Hapa on Western Railway and the other in July 1980 for installation at Ramagundam on South Central Railway. These have not been commissioned so far (January 1986) resulting in an idle investment of a total sum of Rs. 13.95 lakhs on their procurement.

In November 1979, limited tenders were invited by the Western Railway Administration for supply, supervision of installation, commissioning etc., of an electronic weighbridge as per Chief Electrical Engineer Western Railway's specification. The offer of a firm of Bombay at Rs. 4.09 lakhs was accepted as technically suitable. Orders were placed in February 1980 with the date of delivery as 28th August 1980 and with the stipulation that erection and commissioning would be completed within 30 days thereafter. The electronic weighbridge was actually delivered in February 1982 duly inspected by the Chief Electrical Engineer of the Railway and was installed in March 1982. The total expenditure including freight and installation charges was Rs. 4.57 lakhs. This weighbridge did not give satisfactory performance. The foundation had sunk and the equipment had failed even after modification to suit the location. The matter had been under correspondence with the firm since December 1982 without any tangible results.

Thus the objective of developing a mechanism to ensure faster weighment of wagons and curtailing detention to them remains to be achieved.

The electronic weighbridge costing Rs. 9.38 lakhs was installed at Ramagundam in February 1983 but because of technical defects which the supplier has not so far been able to identify and rectify, it has not been commissioned.

The South Central Railway Administration stated (November 1985) that this being a purely indigenous development, a number of problems had to be overcome and that the firm hoped to commission the weighbridge by March 1986.

14. Integral Coach Factory—Delay in setting up the facilities for the Spring Shop Expansion Scheme

In order to augment the manufacture of springs to meet the demand of railways for maintenance, the Railway Board approved a scheme of expansion of coil spring manufacturing capacity of spring shop in the

Integral Coach Factory, in August 1978 at an estimated cost of Rs. 21.94 lakhs. The scheme was included in the Works Programme in 1979-80. It was expected that the outturn of springs would be increased from 24,000 to 30,000 per annum from February 1982 on completion of the expansion facilities.

The expansion scheme envisaged procurement of seven machines on additional account at an estimated cost of Rs. 12.61 lakhs (including erection and reconditioning charges) and one machine on replacement account at an estimated cost of Rs. 9.50 lakhs. Out of these eight machines two were manufactured at ICF itself and commissioned in December 1980 and April 1983. A review in audit of the procurement of the remaining six machines from trade showed that there were delays in placing indents (ranging from 5 months to 22 months) and purchase orders (ranging from 10 months to 30 months). All the machines were received from the suppliers between November 1981 and January 1984. Except one machine, *viz.*, oil-fired bar heating furnace the others were erected and commissioned on various dates between April 1983 and May 1984.

The firm had supplied the foundation drawing for the oil-fired bar heating furnace in May 1981. The furnace itself was supplied in November 1981. In June 1982 a sum of Rs. 2.24 lakhs representing 90 per cent cost of the machine had been paid to the firm. However, the machine could not be erected as the foundation (civil engineering works) were not ready. In February 1983, the Administration decided that no elaborate foundation was necessary and the furnace could be assembled on a base frame to be fabricated. The Administration issued a notice to the firm in February 1984, after completing the base plate, that if the erection work was not completed within 10 days it would be carried out by the Administration at the risk and cost of the firm. In the meantime, the guarantee period had expired in November 1983. There was also no response from the firm to the notice issued by the Administration. Ultimately the machine was erected departmentally at an estimated cost of Rs. 31,647 and commissioned in September 1985 after a delay of 3½ years which included a period of about 1½ years for taking a decision for the foundation to be provided for the machine. The Administration had withheld Rs. 51,641 due to the firm.

The delay in procurement of the machines and completion of the civil engineering and other ancillary works had resulted in escalation of coats. The estimated cost of the scheme was revised from Rs. 21.94 lakhs to Rs. 49.02 lakhs in May 1983. Also, because of belated commissioning of the oil-fired bar heating furnace all other equipments purchased/manufactured for the expansion scheme at a total cost of Rs. 44.94 lakhs could not be put to full and effective use. Consequently, against the expected outturn of 30,000 springs per annum from February 1982, the outturn was only 23,700 per annum on an average during the period 1982-83 to 1984-85. The shortfall in the manufacture of springs by ICF had to be made good by purchase of springs from trade at higher cost. The extra expenditure involved is estimated at Rs. 20.58 lakhs.

15. Southern Railway—Idling of machines in the cylinder liner plating shop

A cylinder liner plating shop was commissioned in the Ponmalai (Golden Rock) workshops in March 1977 for reclaiming used cylinder liners (a diesel engine component) received from Zonal Railways. The outturn initially fixed at 2400 cylinder liners per annum was raised to 4000 from 1980-81 onwards and to 6000 per annum from January 1985.

The inflow of used liners from the Zonal Railways for reclamation was around 5700 during 1979-80. As nearly 50 per cent of the old liners get condemned, in order to meet the targetted outturn of 4000 liners per annum, the Railway Board authorised the workshop to procure fully machined liners to the extent necessary. Accordingly, the Railway Administration had been purchasing fully machined liners since September 1980, electroplating them and supplying to Zonal Railways.

Meanwhile, by September 1978, the Administration had already initiated action to purchase three machines which would enable machining of 3000 proof machined liners into fully machined liners. The purchase of proof machined liners and machining them in the workshop was expected to cost less (a saving of Rs. 14 lakhs per annum) than the purchase of fully machined liners. Three machines *viz.*, milling machine, automatic lathe and grinder were purchased at a total cost of Rs. 38.9 lakhs and were commissioned in July 1980, November 1982 and August 1983 respectively after all the teething problems were overcome. These machines had not been used for machining liners except for trial runs although the Railway Administration had procured 1964 proof machined liners during August 1983 to April 1984 at a cost of Rs. 28.76 lakhs for machining. Consequently, the capacity created at a cost of Rs. 38.9 lakhs for machining 3000 proof machined liners per annum remained largely unutilised for a period of over 2 years ending November 1985.

The Railway Administration continued to purchase fully machined liners instead of proof machined liners.

Had the capacity created been utilised completely, the procurement of 2673 fully machined liners between August 1983 and June 1985 involving an additional expenditure of Rs. 12 lakhs approximately could have been avoided. Further out of 1964 proof machined liners, 485 only were utilised up to June 1985, another 539 up to November 1985 leaving a balance of 940 liners (cost Rs. 13.76 lakhs) in stock at the end of November 1985.

It will be observed that lack of adequate planning resulted in idling of assets created at a cost of Rs. 38.9 lakhs and continued incurrence of additional expenditure.

The Railway Administration stated (June 1985) that the machines could not be used for want of sufficient trained staff and sanction for additional posts. It further stated (December 1985) that this being a new line of production for the Golden Rock workshop, a proposal for creation of extra posts was sent to the Railway Board. However, due to ban on creation of posts, these posts were not sanctioned.

It is however, significant to mention that though administrative approval to staff proposals had been accorded by the Chief Workshop Engineer in November 1982, the Railway Board was approached for sanction to the additional posts as late as January 1985.

The Department of Railways (Railway Board) stated (February 1986) that full capacity of 250 liners per month could not be achieved straightaway in November 1983 itself as certain gestation period was required whenever new technology was introduced and specified outturn could be achieved only gradually. It further stated that capacity for machining proof machined cylinder liners increased to 80 per cent of installed capacity in November 1985 and to 100 per cent in December 1985.

16. Central and Northern Railways—Purchase of electricity

The Railways obtain supplies of electricity from State Electricity Boards and pay the energy charges at the tariffs notified by Electricity Boards from time to time. In the course of test audit certain cases of extra expenditure amounting to Rs. 57 lakhs owing to delay in segregation of industrial load from mixed load and payment of surcharge on account of low power factor were noticed. These are mentioned below :

I. *Delay in segregation of industrial load from mixed load*

The Central Railway Administration requested the Uttar Pradesh State Electricity Board (UPSEB) in April 1975 to increase power supply to Railway installations at Jhansi and in 1977 to segregate the industrial and mixed loads as the tariff for the former was lower than that for the latter and the Railway was being charged for the entire supply at the higher rate. The UPSEB agreed to the proposal in May 1978 and completed the erection and commissioning of a substation in March 1981, but the Railway Administration did not apply for the segregation of the load till August 1980 when the UPSEB advised the Railway Administration to file two applications, one for reducing the prevalent mixed load of 5.2 MW to 1.7 MW and the other for the fresh 3.5 MW for industrial loads. The Administration filed the applications in May 1982, *i.e.*, after a delay of 20 months. After protracted correspondence separate agreements for supply of power for domestic and industrial uses were entered into in December 1983. In the meantime, the Railway Administration had to pay energy charges at the higher rate, which resulted in an avoidable expenditure of Rs. 24 lakhs during the period March 1981 to November 1983.

II. *Payment of surcharge of account of low power factor*

(i) As mentioned in para I above, the industrial load and mixed load of electricity for Railway utilities at Jhansi were segregated from December 1983. Meanwhile, the UPSEB had revised its tariff with effect from 1st November 1982 providing for a levy of surcharge for low power factor. Accordingly, the agreement for industrial load stipulated that average power factor of the plant and apparatus operated by the consumer must not be less than 0.85 and for each 0.01 fall in power factor below 0.85 up to 0.80 a surcharge of one per cent would be levied.

The Electrical department of the Central Railway placed indents for 11 KV capacitors of 800 KVAR capacity on the Controller of Stores of the Railway in December 1983 who in turn, invited tenders in the same month but placed an order on firm 'A' as late as May 1985. The Railway Administration attributed (December 1985) the delay to various procedures, formalities and technical reference. In the meantime, the Railway Administration had incurred an avoidable expenditure of Rs. 5.32 lakhs on payment of surcharge due to delay in procurement and installation of capacitors and other equipments during the period December 1983 to March 1985.

The Railway Administration stated (December 1985) that commissioning of such capacitors would take some more time, particularly because they were

"custom-built", *i.e.*, manufactured to a particular specification of the indentor.

(ii) Similarly, the Northern Railway Administration had paid a surcharge of Rs. 27.69 lakhs to UPSEB on account of low power factor from February 1983 to March 1985 for power supply to the workshops at Charbagh and Alambagh, Lucknow. With a view to improving the power factor, the Railway Administration had entered into a contract with a firm 'B' of New Delhi as far back as June 1979 for supply, erection and commissioning of power capacitors. Though the work was to be completed by January 1980, it remained to be completed (January 1986). The Railway Administration had not levied any penalty on the contractor for the delay in completion of the work.

17. Central Railway—Avoidable expenditure on the the use of anti-friction white metal—grade 84

Anti-friction metal is used on several parts of locomotives to reduce friction. The composition of this metal consists of 80 per cent tin which is imported and is costly. To achieve economy, the Research, Designs and Standards Organisation (RDSO) devised another combination whereby the tin content was reduced to 20/10 per cent and lead substituted for tin. The Railway Board advised all the Railways in December 1972 to use lead based anti-friction bearing metal to RDSO's tentative specifications as a substitute for tin based anti-friction metal grade 84 for lining of crossheads of steam locomotives. In October 1973, the Railway Board asked the RDSO to advise the Railways and the Railway Production Units that similar practice (use of grade 10/20 white metal) be followed for electric locomotives and EMU bearings as well. The Railway Board simultaneously endorsed a copy of this communication to the Chief Electrical Engineers of the Railways.

During the period from 1973 to September 1978 use of anti-friction metal on EF/1 locomotives of Central Railway was under experimentation. In reply to an enquiry from Audit, the Deputy Chief Electrical Engineer stated in September 1978 that, in February 1974, EF|1 locomotive (then being used for shunting purposes) had been fitted with bearings lined with lead based metal as per RDSO's tentative specification for trial purposes and that there had been no report of any axle bearing running hot for about 9 months. However, in Parel workshop (Central Railway), where the EF/1 locos were given periodical overhaul, the Railway Board's instructions of October 1973 had not been implemented till July 1981. The tin based anti-friction white metal grade 84 continued to be used at Parel workshop till June 1981. On the basis of issues made to the shops, the extra expenditure for the period from October 1978 to June 1981 works out to Rs. 4.75 lakhs which would have been avoided if Parel workshop had switched over to lead based anti-friction metal as early as October 1978.

The Railway Administration stated (October 1985) that 372 kgs of grade 10 and 100 kgs of grade 20 antifriction metal would be required per locomotive against 472 kgs. of grade 84 after machining. Adopting the recovery rate of 80 per cent if grade 84 were to be used and 60 per cent if grades 10 and 20 were to be used, the difference of cost on account of utilising grade 84 at Parel workshop instead of grades 10 and 20 would work out to Rs. 1.41 lakhs. It has, however, not been possible to verify the rates of recovery as the connected records pertaining to the relevant periods were not available in the workshop.

18. Southern Railway—Purchase of brake blocks for EMU coaches

Brake blocks for Electric Multiple Unit (EMU) coaches are a vital safety item stocked in the Tambaram Depot of the Southern Railway. The approved drawing for this item is T. 3-1-605. However, alterations to this drawing had been made from time to time. The main modification which was made through 'Alteration G' indicated, *inter alia*, the material specification as I.S. 210 (70) grade 40 and brinell hardness 220—270 for EMU coaches. According to it the range of hardness to which the brake blocks must conform should be 220—270.

During May and June 1981, the Southern Railway Administration placed orders on three firms for supply of brake blocks conforming to the above specification for use in motor coach bogies as indicated below :

Firm 'D'	15,182 numbers at Rs. 32 each
Firm 'B'	7,590 numbers at Rs. 27 each
Firm 'BE'	2,200 numbers at Rs. 25 each (trial order).

The rates accepted were for fabrication and supply of brake blocks from pig iron to be supplied by the Railway.

During a review in audit of the purchase order placed on firm 'B' it was noticed that between September 1981 and February 1982, Rail India Technical and Economic Services (RITES) had inspected and passed 3,515 brake blocks. However, from March 1982 when a new Inspecting Officer had come, he declined to inspect further supplies unless the hardness range was clearly indicated. The former

Inspecting Officer had passed the supplies as per the lower hardness specification *viz.*, grade 25 which does not apply to EMU coaches. The firm prayed for alteration of the specification or closure of the order. In April 1982 the Deputy Chief Electrical Engineer (Traction) to whom the matter was referred stated that the requirement was for material with specification grade 40 with 220 to 270 brinell hardness. Thereupon, an amendment to the purchase order specifying grade 40 was issued on 29th April 1982 although there was no ambiguity in the purchase order and the correct specification (*viz.*, grade 40) had been mentioned in the drawing. The firm, however, stated (24th May 1982) that they were unable to supply the brake blocks as 40 grade material could not be taken in their furnace.

In July 1982, it was decided by the Railway Administration that the firm should be asked to improve upon the hardness and the supplies accepted as the brake blocks were urgently required. Accordingly, the brake blocks (7590 in all) supplied by the firm were accepted. It was also noticed that the supplies by the two other firms were also in the hardness range from 180 to 230 but had been accepted by the Tambaram Depot. The total value of supplies made by the three firms was Rs. 7.46 lakhs.

The Administration stated (May 1985) that as the order had been placed on a drawing which permitted alternative specifications, the firm could not be penalised for supplying the brake blocks to either of the specifications and that the brake blocks to grade 25 were accepted in view of urgency. The Administration also stated that there were no adverse reports on the use of brake blocks supplied by these firms.

The contention of the Railway Administration that the drawing permitted alternative specification is not, however, tenable as it clearly indicated the material specification for brake blocks for EMU coaches as I.S. 210 (70) grade 40 and brinell hardness 220—270.

19. South Central Railway—Loss due to purchase of sub-standard material

The Railway Administration placed an order in July 1981 on firm 'P' for supply of 50,000 universal couplings—value Rs. 6.45 lakhs, to the Deputy Controller of Stores, Lallaguda. The firm supplied 15,000 couplings within the stipulated delivery period, *viz.*, 20th April 1982. These were accepted by the Railway Administration and the period of delivery was extended upto 30th June 1982, for the balance supply. The firm supplied 25,000 couplings (15,000 in May 1982 and 10,000 in June 1982). Tests of the samples from these supplies conducted at the Railway Workshop laboratory revealed that the material did not conform to the prescribed specifications relating to phosphorous content and micro-structure. Rejection advices were, therefore, issued to the firm in July 1982 and September 1982 for supplies made in May 1982 and June 1982 respectively.

Firm 'P' informed (August 1982) the Railway Administration that the rejection was not acceptable as the material was passed by the Joint Director (Wagons) Research, Designs and Standards Organisation, Calcutta, the inspecting authority, (after normal routine tests) and the supplies made by them earlier had been accepted by the consignee. An offer of a rebate of 10 paise each on the rejected material made by the firm was not accepted by the Railway Administration. Thereafter, a joint inspection of the rejected material was conducted in October 1982 by the consignee and samples were got tested in the National Test House, Madras. The tests revealed that 16 of the 25 samples were not in accordance with the prescribed specifications. Thereupon, the Administration advised other zonal Railways (November 1982) to recover Rs. 3.17 lakhs from the pending bills of the firm towards advance payment and expenditure incurred on freight and testing. This amount could not, however, be recovered as no bills were stated to be pending with the other zonal Railways. The firm declined (January 1983) to accept the test results and the rejection of the material on the plea that the inspected materials were already mixed up after receipt at Lallaguda. The Railway Administration cancelled (April 1983) the order for the balance quantity of 35,000 couplings. On the question of recovery of the amount paid to the firm the Law Officer of the Railway opined (April 1984) that the Railway Administration would be entitled to recover the amount from the firm by filing a suit in a court of law. Enquiries made by the Railway Administration revealed (June 1984) that the firm 'P' was not in existence and that there was, therefore, no possibility of recovering the amount of Rs. 3.17 lakhs due from the firm.

The Rail India Technical and Economic Services Limited (RITES) had advised (March 1980) the General Managers and the Financial Adviser and Chief Accounts Officers of all Indian Railways that firm 'P' was repeatedly supplying sub-standard material to various Railways and resorting to submission of inspection certificates which were not genuine.

The Railway Administration was aware (June 1981) that universal couplings supplied by firm 'D', a sister concern of firm 'P', to Southern Railway, although inspected and cleared by the RDSO, Calcutta were rejected as the materials were found to be corroded and pitted. These facts were not taken into account by the tender committee while accepting the offer of firm 'P'.

The Railway Administration came to know, in December 1982, that certain investigations were going on against this firm by the Central Bureau of Investigation for alleged malpractice. Even then it did not take prompt action.

The Audit Paragraph was issued to the Railway Administration in August 1985; its reply is awaited (January 1986).

20. Southern Railway—Non-recovery of difference of cost of stores from a defaulting firm

Open tenders were invited in November 1977 for the purchase of 2596 numbers of coupling springs (MG) for stocking in the Ashokapuram Stores Depot serving the Mysore South workshops. Seven tenders were received and considered by a tender committee on 18th January 1978. The lowest tenderer, firm 'S' offered a rate of Rs. 86.75 per coupling stating that delivery would commence after 18—20 weeks from the date of receipt of order. The next higher tenderer firm 'O' quoted a rate of Rs. 97 per coupling and offered to commence delivery after 4 weeks and to complete the order within 3 months thereafter. The tender committee recommended splitting up the quantity between these two firms so that the supply would materialise early. Accordingly, orders were placed in February 1978 on firm 'S' for 1,000 springs at the rate of Rs. 86.75 each and for 1,596 springs on firm 'O' at the rate of Rs. 97 each. The firms were required to complete supply by 21st August 1978 and 30th June 1978 respectively.

Firm 'O' completed delivery as per schedule, but firm 'S' did not, and in January 1979, *i.e.*, five months after the expiry of the delivery date, sought extension of time by 20 weeks which was granted. The firm did not supply the springs and asked for further extension of time upto 15th October 1980 which too was granted. Finally, when in December 1980 the firm applied for yet another extension of time the request was turned down and the order was cancelled (January 1981). A fresh purchase order at the risk and cost of the defaulting firm was placed on 5th May 1981 on firm 'C' at the rate of Rs. 250 each. Firm 'S' was addressed on 14th May 1981 to pay the difference of cost which worked out to Rs. 1.65 lakhs, but it did not remit the amount. The matter was not pursued further.

In March 1985, the Railway Administration learnt that the firm had been liquidated "some four years back". The Railway Administration had advised (May 1985) the South Eastern Railway to nominate a competent advocate to file an application before the official liquidator to prefer the Southern Railway's claim.

As a result of the failure of the Railway Administration to pursue the matter about recovery of the difference in cost, the amount of Rs. 1.65 lakhs has not been recovered even after a lapse of a period of four years.

The Department of Railways (Railway Board) stated (January 1986) that while pursuing the matter it had been discovered that the firm had not been officially liquidated and the factory was locked.

21. South Central Railway—Avoidable procurement of passive reflector

The estimate (cost Rs. 88.47 lakhs) for the provision of a microwave link between Vijayawada and Waltair sanctioned by the Railway Board (April 1974) provided for a passive reflector of size 47.8′×26.2′ (14m×8m) being installed at Wynchpet at Vijayawada.

With reference to an indent (February 1979) of the Signal and Telecommunication Department, the Controller of Stores placed an order in March 1980 on a firm for fabrication and supply of the equipment at a cost of Rs. 5.27 lakhs (excluding taxes, etc.). Since the supply was not forthcoming even after expiry of the stipulated delivery period (26th September 1980), the firm was requested on 7th February 1981 by the Controller of Stores to intimate the probable date of execution of the order within a fortnight, failing which the order was liable to be cancelled at its risk and cost.

Later, on a review, the Signal and Telecommunication Department of the Railway proposed to eliminate the passive reflector and to provide an active repeater in lieu, considering that the propagation conditions on the coastal area were affected by high moisture content and changing temperature gradients which were responsible for fading of signals. Accordingly, the Controller of Stores was advised (September 1981) by the Signal and Telecommunication Department to cancel the order for passive reflector. This was, however, not done till the firm advised (January 1982)

that the reflector was ready for delivery. At the insistance of the indentor the Controller of Stores cancelled the order in March 1982.

The firm disputed (May 1982 and July 1982) the cancellation and also threatened legal action as the Railway officers had in discussions with its works officials approved the progress of manufacture/assembling from time to time and thus allowed the work to be completed at considerable cost. Ultimately, the Railway Administration decided (April 1983) to accept the reflector. The question of deployment of the reflector referred to the Railway Board in April 1983 remained undecided (January 1986). Meanwhile, the reflector was received (January 1984) and payment of Rs. 7.04 lakhs made to the firm. The reflector has been lying unused since January 1984.

22. Northeast Frontier Railway—Unintended benefit to a coal handling contractor

The Railway Administration entered into an agreement with a co-operative society on 31st March 1981 for handling coal at New Bongaigaon shed for a period of one year with effect from 1st April 1981. The contract provided for the following items of works :

Item of work	Quantity (Approximate)	Rate accepted in rupees
1. Rate per tonne for unloading coal from wagon for a distance of 100 M or less.	41,055 tonnes	0.73 per tonne
2. Rate per tonne for stacking and levelling for a distance of 100 M or less.	1,699.96 tonnes	5.03 per tonne

'Note' (1) below Schedule 'A' to the agreement stated that the rate quoted against item (1) above included the operation of levelling of surface where bins or coal godowns are provided.

The quantity to be handled for unloading operation and for stacking and levelling had been determined on the basis of quantities handled during the last three years. At New Bongaigaon shed there are two coal bins in which the coal was unloaded and the payment was to be made for unloading only. In May 1981, the Co-operative Society represented that they should be paid for stacking and levelling of coal in the bins also. Accordingly, they claimed separate payment at the rate of Rs. 5.03 per tonne in addition to payment for unloading of coal in coal bins.

The Railway Administration decided in May 1981 to negotiate reduction in rates with the contractor. During negotiations on 7th June 1981 the contractor offered reduced rate of Rs. 2.93 per tonne for stacking and levelling as against the contract rate of Rs. 5.03 per tonne. The revised negotiated rates were accepted.

The following points arise in this connection :

(a) In the past, payments for stacking and levelling had been made to the contractor only for quantity of coal stacked and levelled above bin height and on the ground. However, in the contract entered into in March 1981, Railway Administration agreed to pay for the same quantity of coal both unloading charges and stacking charges giving an unintended benefit to the contractor.

(b) The Co-operative Society, the contractor for coal and ash handling and cinder picking at New Bongaigaon Zone during previous year (1980-81), had not claimed for stacking and levelling of coal unloaded in bins in an earlier contract.

(c) In other divisions of this Railway payment for stacking and levelling of coal unloaded in bins had also not been made.

The contract for 1981-82 was extended upto 30th June 1983. During these two years and three months 72,474.32 tonnes of coal was stacked and levelled in coal bins by the contractor for which extra payment of Rs. 2,12,349.75 was made compared to the amount payable under the agreement entered into on 31st March 1981.

The Railway Administration stated (November 1983) that stacking (inside the bins) was extremely necessary in order to assess the actual receipts for day-to-day accountal as well as for the purpose of stock verification. The Administration further stated (January 1986) that the payment of stacking charges was inescapable primarily because the quantity of coal received at a time was not sufficient to fill a bin completely and it was necessary to stack and level coal for which the contractor's claim for revising the rates was accepted after negotiations and also partly due to the local conditions prevailing at that time.

The contention of the Administration is not however, found tenable as, in the contract for the next period (July 1983 to June 1985) the payment was

restricted only to unloading in the bins and on other divisions of the Railway no extra payment for stacking the coal inside the bins had been made.

23. **Handling and transit losses of coal on Railways**

In paragraph 65 of the Report of the Comptroller and Auditor General of India for the year 1970-71—Union Government (Railways), a mention was made of the heavy shortages in receipt and handling of coal in loco sheds of Railways. Taking note of the fact that the shortages might be attributable either to pilferage of coal in transit or underloading of the coal in the collieries, the Public Accounts Committee (1972-73—Fifth Lok Sabha), recommended that there should be no delay in fixing responsibility for the shortages and no leniency in taking action against those found responsible (cf. paragraph 3.46 of 79th Report of the Public Accounts Committee—Fifth Lok Sabha).

In February 1975, the Ministry of Railways (Railway Board) issued instructions to all the Railways to take effective and co-ordinated action to bring down the loss and to enforce reweighment of at least 5 per cent of loco coal wagons at destinations to estimate transit losses. In August 1975 the Chief Security Officers of zonal Railways were further instructed to take steps to arrest the losses of railway coal, both during transit and at loco sheds. The specific measures taken to minimise the losses were :

(a) weighment of coal at loading points;

(b) lime spraying at the loading points so that pilferage enroute could be detected and also at loco sheds on the stacks [this was discontinued from 1980 onwards as per terms of agreement between Ministry of Railways (Railway Board) and Coal India Ltd.];

(c) test weighment of wagons (5 per cent) at receiving stations;

(d) proper accountal so that shortages were assessed stackwise;

(e) security arrangements; and

(f) escorting of trains by Railway Protection Force (RPF) in vulnerable sections and organising raids as and when warranted.

A review by audit showed that these measures and the instructions issued from time to time by the Ministry of Railways (Railway Board) did not yield the desired results and losses had been increasing except during 1984-85 when the percentage of loss came down to 6.1 from 7.1 during 1983-84 as shown below :

Year	Total receipts (tonnes)	Total loss (tonnes)	Percentage of loss to total receipts
1977-78	12,719,365	296,299	2.33
1978-79	12,317,637	313,512	2.5
1979-80	11,923,279	346,315	2.9
1980-81	11,731,913	445,165	3.8
1981-82	10,447,427	507,570	4.86
1982-83	10,119,815	582,674	5.7
1983-84	9,833,504	701,608	7.1
1984-85	9,328,611	566,999	6.1

Although the total receipts of coal had come down from 12.7 million tonnes in 1977-78 to 9.8 million tonnes in 1983-84, the loss had risen from 2.3 per cent to 7.1 per cent during this period. The money value of loss during the year 1983-84 alone works out to Rs. 19.4 crores out of Rs. 266 crores being cost of coal consumed in that year. A further analysis showed that the losses were particularly heavy on Central, Eastern, South Eastern and Western Railways where the percentages ranged between 5 to 12.1 as shown below :

Railway	Year	Loss in tonnes	Percentage
Central	1981-82	72,133	5.00
	1982-83	73,016	5.30
	1983-84	114,641	8.80
	1984-85	67,811	5.60
Eastern	1981-82	140,948	8.73
	1982-83	137,411	9.30
	1983-84	174,407	11.30
	1984-85	132,026	9.70
South Eastern	1981-82	61,493	5.76
	1982-83	85,363	8.80
	1983-84	87,422	9.20
	1984-85	82,262	9.40
Western	1981-82	86,331	7.74
	1982-83	115,048	10.20
	1983-84	136,305	12.10
	1984-85	126,232	11.20

The percentages of losses on Northern, North Eastern, Northeast Frontier, Southern and South Central Railways during 1983-84 were 4, 4.1, 4.9, 2.7 and 3.1 respectively. However, the percentages of losses on Northern (5.1) and Northeast Frontier Railways (5.6) went up during 1984-85 while on North Eastern, Southern and South Central Railways there further fell down and were 3.3, 1.7 and 1.9 respectively.

The zonal Railways have been sending quarterly reports on losses of coal in transit and in handling to Railway Board. These reports show that the losses were mainly attributable to non-weighment of wagons, loss in transit, receipt of coal in BOXN wagons, under-loading of coal by collieries etc. The Western Railway Administration attributed about seven per cent shortages to receipt of coal in BOXN wagons which were over-invoiced. Similarly, on Central Railway, the loco sheds at Bina, Jhansi and Bhusawal had reported that the coal received in BOXN wagons were in the range of 44.5 to 48 tonnes per wagon against 52.3 tonnes per wagon for which bills were preferred by the collieries. However, the Central Railway Administration had been paying at the rate of 54 tonnes per wagon. The loss would be substantial as the Railway had received 5496 BOXN wagons of coal between August 1983 and March 1984.

Even though the Railway Board are seized of the problem of increasing loss of coal, through the periodical reports received by them, no effective measures have been taken to arrest the incidence of loss on the Central, Eastern and Western Railways excepting reiterating (July 1985) the steps to be taken by the zonal Railways to control the pilferage of coal and reduce transit and handling losses.

The Ministry of Transport (Department of Railways) stated (January 1986) that with the concerted efforts made by the Railways losses came down to 6.1 per cent during 1984-85 as compared to 7.1 per cent during 1983-84 and action was being taken to bring down the percentage of handling and transit losses within the permissible limit. They also stated that while the losses of coal in the Eastern sector were mainly related to law and order situation, losses in the Central sector were due to underloading and overinvoicing.

CHAPTER VI

WORKS

24. Central Railway—Consrtuction of third line on the South East Ghat Section between Karjat and Lonavla

Bombay is connected to the hinterland by the North East Ghat Line (NEGL) and the South East Ghat Line (SEGL). A Review on the NEGL appeared in para 2.2 of the Advance Report of the Comptroller & Auditor General of India—Union Government (Railways) for the year 1983-84.

To meet the increase in traffic as the existing line capacity of 26 trains (Up & Down) with speed restrictions of 40 Km. (ascending) and 16 Km. (descending) between Karjat and Lonavla (served by double line since 1930) in the South East Ghat Section was saturated, a third line of 28.54 Km. was sanctioned by the then Ministry of Railways (Railway Board) at an estimated cost of Rs. 23.42 crores (January 1978). Expenditure upto 1984-85 amounted to Rs. 35.24 crores. A revised estimate for Rs. 39.31 crores submitted in September 1984 to the Railway Board is awaiting approval (December 1985).

2. The anticipated cost over-run in Karjat-Lonavla Third Line Project amounts to Rs. 15.89 crores. The details of items where the anticipated excess was more than 200 per cent are indicated in the Annexure IX.

3. During the review of the execution of the project the following points were noticed :

(i) *Delay in completion of work*

As per original assessment, the work of construction of third Ghat Line was to be completed within 5 years from the date on which it was sanctioned by the Railway Board *i.e.*, January 1978. Accordingly, the work should have been completed in January 1983. However, physical progress of the work was to the extent of 83 per cent to the end of July 1984 and 93.5 per cent to the end of July 1985. The extension in the duration of construction by two years had already resulted in extra expenditure of Rs. 1.93 crores on account of fixed overheads like supervisory establishments, etc. The execution of the work may be prolonged for another two years.

(ii) *Opening of line*

Out of the total length of 28.54 Km., a portion of 1.36 Km. from Karjat to Palasdhari and another stretch of 17 Km. from Palasdhari to Monkey Hill were completed and opened for traffic from 29th August 1984. The remaining portion of 10.18 Km. from Monkey Hill to Lonavla was opened for traffic in July 1985. But the opening of this line did not have any impact on the increase in the line capacity to handle more trains as the yards at Karjat and Lonavla at the two ends are not yet (December 1985) ready for this purpose. The Railway Board stated (February 1986) that the non-completion of yards at Karjat and Lonavla is not causing any bottleneck. But the fact remained that there was no significant increase in the number of trains run on the section and hence there was no question of any bottleneck. The signalling of the middle line in both directions is also not yet completed to make the line operative in an optimal manner.

According to the traffic projections 39 trains per day were expected to be moved on South East Ghat Section in 1986. However, this is not likely to materialise, considering that even after opening of the entire length of the third line in July 1985, the number of trains run on the section remained almost the same as with the previous two lines (26 trains).

The survey report had anticipated that the addition of the third line in South East Ghat section would bring in net incremental revenue (after setting off working expenses) as indicated below :

Year	Amount (Rs. in crores)
1983-84	3.30
1984-85	3.30
1985-86	4.59

These anticipations did not materialise, nor are likely to materialise in the near future for want of traffic even after opening of the line.

(iii) *Provision of additional tunnel*

Under the contract agreement of 6th November 1982 construction of one tunnel across the Hillock between Thakurwadi sub-station and Nagnath Cabin

for running 1500 V.D.C. positive and negative feeders had been entrusted to a contractor at an estimated cost of Rs. 7,39,014.

This tunnel was not covered by project estimate/ detailed sanctioned estimate.

(iv) *Acceptance of higher rates in the subsidiary agreements*

(a) An agreement was executed (June 1979) with a contractor for construction of tunnels Nos. 15-C and 16-C and earthwork and bridges, etc., at the rate of 145 per cent above SSR-76 for scheduled items and 120 per cent above SSR for non-scheduled items.

While the work was in progress, the necessity of constructing a retaining wall and two minor bridges between tunnel No. 15-C-I and 15-C-II had arisen. The Railway Administration executed two subsidiary agreements wherein the contractors were allowed the rate of 500 per cent above SSR-76, though the standard scheduled items of work were already existing in original agreement. As the contrctors were paid at higher rates than provided in the original agreement, the Railway Administration had to incur extra expenditure of Rs. 5.15 lakhs. Since these items of work consisted of scheduled items and were provided in the agreement, there was no need to enter into subsidiary agreement and pay higher rates.

According to the Railway Administration the original agreement did not include the work of retaining wall and two minor bridges. This argument is not tenable, considering that even though this work was not specifically included in the agreement, the individual items required for this work were scheduled items and were covered by the original agreement. The rate accepted in the subsidiary agreements (500 per cent above SSR) was too high in comparison to the rate available as per original agreement (145 per cent above SSR).

(b) The retaining wall constructed in mass concrete by the contractor in summer, 1982, collapsed in July 1982 due to land slides caused by heavy rains. The same had been got re-constructed in RCC through another contractor under contract agreement dated 22nd April 1983 at the rate of 450 per cent above SSR-76 and at an estimated value of Rs. 11.61 lakhs.

The height of the retaining wall reconstructed in summer, 1983 is being raised to 10 metres (3 metres more) and one more retaining wall above the existing one is being constructed (December 1985) through a third agency under contract agreement of 12th April 1984 of the rate of 415 percent above SSR-76.

The rates for the same work accepted later on were less than the rates at which the earlier contractors were paid in 1982.

(v) *Extra expenditure due to drilling of holes*

The fish plates received for this project were without drilled holes at the ends. The holes had to be drilled at site as joining of rail with fish plates would not be possible otherwise. The Railway Administration had to incur expenditure of Rs. 1.51 lakhs for drilling holes. Knowing that the cost of drilled and undrilled fish plates was the same and that in Ghat Section welded rails could not be used, this expenditure could have been avoided.

(vi) *Blocking of capital*

The Route Relay inter-locking cabin buildings were constructed by the Civil Engineering department at Lonavla and Karjat at a cost of Rs. 3.90 lakhs and Rs. 3.43 lakhs in December 1980 and June 1982 respectively. The material required for Route Relay inter-locking cabins costing Rs. 2.24 crores had been procured by the Signal and Telecommunication Department as mentioned below :

Year	(R . in lakhs)
1980-81	34.01
1981-82	41.64
1982-83	40.99
1983-84	58.69
1984-85	48.95
TOTAL	Rs. 224.28

However, due to non-completion of civil engineering works like yard remodelling, etc., at Karjat and Lonavla, the Route Relay interlocking cabin work could not be processed by the Signal and Telecommunication Department. Consequently, these costly equipments had been lying unutilised over the years.

(vii) *Extra clearance of tunnels*

The Final Location Survey Team had stated (November 1974) that the tunnels should be cut to cater to the type of traction (AC or DC) to be used actually. Though, the South East Ghat line is being wired with D.C. traction, the tunnels had been given extra clearance by about 18", required for AC traction. This entailed an extra expenditure of Rs. 23.61 lakhs. There is no possibility of converting the existing D.C. traction to A.C. traction in the foreseable future as 54 D.C. electric locomotives (WCG-2) having average life of 35 years each were procured during 1970-71 to 1975-76 at a cost of Rs. 16.21 crores for use in ghat sections on Central Railway [(cf. Paragraph 9.8 of the Report of the Comptroller and Auditor General of India for the year 1975-76—Union Government (Railways)]. Provision of A.C. profile in these tunnels, therefore, does not serve any purpose whatsoever.

4. *Summing up*

1. The extension in the duration of construction of the project by two years resulted in an extra provision of Rs. 1.93 crores on account of fixed overheads, like the cost of supervisory establishments, etc. [Para 24.3(i)].
2. The revised estimate (September 1984) of the project exceeded the original estimate (January 1978) by Rs. 15.89 crores, the percentage increase being 68. (Para 24.2)
3. A net incremental revenue of Rs. 4.59 crores was expected to accrue in 1985-86. There is little prospect of its materialisation as the number of trains run in South East Ghat Section after opening of the third line in July 1985 has not increased substantially. [Para 24.3(ii)].
4. Signal & Telecommunication Equipment costing Rs. 2.24 crores has been idling over the years. [Para 24.3(vi)].
5. The extra expenditure incurred on various items of the project aggregated to Rs. 41.88 lakhs. [Paras 24.3(iv) (a&b), 24.3(v) and 24.3(vii)].

25. Northeast Frontier Railway—Overpayments to contractors due to irregular execution of works

The Railway Administration entered into thirteen contracts (April—June 1984) providing, *inter alia*, for 1,00,900 cum of earthwork by truck from private land 'in all classes and conditions of soil including all lead, descent, dressing, royalty etc'., at rates ranging from Rs. 253 to Rs. 255 per 10 cum, in connection with construction of new B.G. line from Eklakhi to Balurghat.

During execution of the works, it came to the notice of the Railway Administration that in the case of nine contracts earthwork had been executed 78 to 3325 per cent above the contracted quantities without formal approval of the competent authority. The sizeable variation of 3325 per cent in one contract was attributed (December 1985) to a mistake made when calculating the quantity for tender. Besides, in all the thirteen contracts the contractors had actually done a part of the earthwork by headleads from borrow-pits in private land within 100 metres from the site of work although as per terms of the contracts the entire earth was required to be carried by truck. The quantities of earthwork as assessed by the Railway Administration (March/April 1985) worked out to 83542 cum by head lead plus 93351 by truck lead aggregating to 1,76,393 cum as against 1,00,900 cum originally contracted.

The Railway Administration entered into subsidiary agreements with four contractors during April to June 1985 after negotiating the rate for 'earthwork by head lead for distance within 100 metres' at Rs. 171/Rs. 180 per 10 cum as against the earlier rate of Rs. 254 per 10 cum applicable to earthwork by truck lead for 'all leads, descents etc.'. The remaining contractors did not turn up for negotiation. On a review of the payments already made to them upto November 1985 on the basis of truck/headlead rate, an overpayment of Rs. 5.54 lakhs was found to have been made to nine contractors against which an amount of Rs. 3.31 lakhs is available with the Railway Administration as security deposit/earnest money.

The following points arise in this case :

(i) The railway officials at the site of the work allowed earthwork to be executed by the contractors far in excess of the contracted quantities, without formal approval of the competent authority. In one case there was a mistake in the assessment of the earthwork quantity for tender which resulted in sizeable variation of 3325 per cent.

(ii) The concerned railway officials failed to conduct a realistic survey of the extent of lead involved in carrying earth from the private land in the vicinity of the work site before the work was awarded to the contractors.

(iii) The railway officials in charge of supervision of the work failed to take timely notice of the earthwork being done by the contractors by head lead within a distance of 100 metres while payments were being made at the rates of truck lead for all leads.

(iv) The responsibility of the defaulting railway officials is yet (December 1985) to be fixed.

26. **Southern Railway—Provision of additional lines in a marshalling yard**

The Railway Administration entered into (March 1979) a contract (value : Rs. 3.96 lakhs) for execution of earthwork (by railway's means and contractor's means separately), masonary (drain) and supply of ballast in connection with the provision of additional receiving and despatching lines at Marshaling Yard, Bayyappanahalli.

The contractor informed the Railway Administration in September 1979 (after expiry of the due date of completion in August 1979) that the work had been stopped due to his inability to carry private earth/cut spoils to the work site as a result of the Indian Oil Corporation not allowing his vehicles to ply through their yard. In December 1979, the contractor demanded higher rates for the balance work or else desired that the contract be finalised. The value of the work done by that time was Rs. 0.55 lakh only. The Railway Administration terminated the contract in May 1982 on the consideration that further work could not be done under the same circumstances and *modus operandi* as was existing at the time of original agreement; and entered into another contract in September 1982 (three years after the original date of completion) for Rs. 4.24 lakhs, allowing higher rates for all items (except 'earthwork with contractor's means' which was dropped) and increase in quantities of earthwork with railway's means except earthwork in cutting in hard rock requiring intensive blasting where the quantity was reduced to 200 cum. The contractor was then allowed to pass his vehicles through the land belonging to the Defence Department and the work was to be completed by March 1985.

During execution of the work, increase in quantities in respect of earth work with railway's means excluding 'earthwork in hard rock requiring intensive blasting' and masonry (drain) resulted in further enhancement of the cost of the work from Rs. 4.24 lakhs to Rs. 4.81 lakhs. Had the entire work been executed at the rates provided in the original agreement, it would have cost Rs. 2.94 lakhs only. Thus, the extra expenditure works out to Rs. 1.87 lakhs.

Considering that in terms of the tender conditions the contractor was supposed to know the nature and extent of accessibility of the work site and he would have in fact provided a sufficient cushion in his rates to cover this element, it was inappropriate on the part of the Railway Administration to have terminated the contract without any liability on the part of the defaulting contractor. Had the work been got done at his risk and cost in September 1979 itself instead of delaying it till September 1982, not only the extra expenditure of Rs. 1.87 lakhs would have been avoided but it would have been much less due to non-accretion of the escalation element for three years.

27. **South Central Railway—Overpayment to a contractor—bridge construction work**

Pursuant to the decision of the State Government of Karnataka to construct a dam across the Krishna river near Almatti Railway Station, a portion of the Railway line between Baralkot and Basayanna Bagewadi Road stations in the Gadag-Sholapur section had to be diverted. The work of diversion (estimated cost, Rs. 9.86 crores) included construction of a bridge across Parvati Katti Nallah which was undertaken by the South Central Railway Administration on behalf of and at the cost of the State Government.

The Railway Administration entrusted the bridge construction work to contractor 'A' in December 1972. While the diversion work was in progress (48 per cent) the Government of Karnataka advised the Railway Administration to stop the work because of paucity of funds. The Railway Administration, therefore, terminated the contract in June 1974. Subsequently, at the instance of the state Government (March 1977) the diversion work was resumed and the balance bridge work was entrusted (August 1977) to contractor 'B'. The work was completed by 'B' in November 1978. Final payments to contractors 'A' and 'B' were made in November 1977 and March 1982 respectively.

A review by Audit (August 1983) of the execution of the bridge construction work revealed that the measurements for the work in wing walls were recorded incorrectly, resulting in payment for an extra quantity of 1446.18M^3. The overpayment involved has been assessed at Rs. 2.03 lakhs.

The Railway Administration stated (December 1985) that the exact amount of overpayment and

the value of cement issued in excess, if any, would be known after the investigation being carried out by the Railway's vigilance Department is completed.

28. South Eastern Railway—Blocking of capital due to injudicious commencement of work on a road overbridge

The cost of construction of a road overbridge (including approaches) in replacement of an existing level crossing is shared between the Railways and the State Government. However, the cost of land for approaches is borne exclusively by the State Government. While the Railway undertakes construction of the bridge proper, the State authority is responsible for constructing the approaches.

At the request (November 1971) of the State Government of Madhya Pradesh, the Railway Administration obtained Railway Board's approval (July 1975), for construction of a road overbridge in lieu of the existing level crossing at Telghani Naka in Raipur station yard. As per original estimate sanctioned by the Railway Board in April 1977 the cost of the road overbridge was Rs. 71.37 lakhs (Railway's share Rs. 29.70 lakhs, State Government's share Rs. 41.67 lakhs).

The Railway Administration started construction of the bridge (January 1980) even before the Gazette notification for land acquisition was published by the State Government in April 1980. The overall progress of the bridge work as on 13th July 1984 was 60 per cent. The expenditure booked to the work by January 1985 was Rs. 34.46 lakhs. The State Government, however, has not even commenced (January 1986) its portion of the work (relating to approaches) due to its inability to acquire required land for the purpose.

The execution of the bridge work by the Railway Administration without ensuring that the State Government was in possession of land for construction of the approach roads resulted in blocking of Railway's capital to the extent of Rs. 34.46 lakhs.

The draft para was issued to the Railway Administration in October 1985; its reply is still awaited (January 1986).

29. Western Railway—Payment of price escalation at a higher rate

The Railway Administration invited tenders in July 1979 for construction of a shed with structural steel or prestressed/RCC members (with contractor's own design), inspection pits, office accommodation, etc., at Kandivali in connection with intensification of suburban services between Churchgate and Virar. The tender conditions did not provide for any variation in the rates on account of increase|decrease in the cost of materials and labour. However, the Railway Administration accepted (February 1980) a firm's offer of Rs. 58.38 lakhs subject to the following price escalation clause stated by the firm to be in vogue with the Bombay Municipal Corporation (BMC) and other government departments :

$$\text{Percentage increase payable in each bill} \quad \frac{Ic - Io}{Io} \times 100$$

('Io' is the average consumer price index for the month of August 1979 as applicable for Bombay and 'Ic' is the average consumer price index for the month previous to the month during which measurements are taken)

On verification by Audit in June 1984, the escalation clause as adopted in BMC contracts was found to be different inasmuch as it required escalation to be computed on only 88 per cent (as against cent per cent allowed by the Railway) of the cost of the work done by the contractor. The overpayment made on this account was assessed by Audit at Rs. 2.55 lakhs.

The Railway Administration awarded the following works also to the same contractor with the same price escalation clause :

Name of work	Date of tender	Value of contract (Rs. in lakhs)
1. Providing super structure consisting of prestressed concrete girders, etc. Road over bridge at Bulsar.	February 1980	5.45
2. Providing Road-over-bridge at L. C. No. 45 Dohad.	March 1979	12.16

The amount of price escalation paid in excess in these two cases worked out to Rs. 0.23 lakh.

The Railway Administration's acceptance of the price escalation clause without verifying the extent of escalation allowed by the BMC, resulted in an extra expenditure of Rs. 2.78 lakhs.

The Railway Administration stated (December 1985) that it had not been felt (February 1980) necessary to verify the actual formula being adopted by the Bombay Municipal Corporation as the formula quoted by the contractor was the one to be considered. This view is not tenable as the firm had stated that the formula proposed by it was also in vogue with Bombay Municipal Corporation but actually it was different. This being so, it was incumbent on the Railway Administration to have checked up the position from the Corporation.

30. **Western Railway—Avoidable expenditure on additional traffic facilities**

The Ministry of Railways (Railway Board) sanctioned (April 1972) an abstract estimate amounting to Rs. 12.75 crores for Bassein Road (on Western Railway)—Diva (on Central Railway) broad guage link (42 km) and directed that the construction should be carried out by the Central Railway Administration. In September 1972 it was jointly decided by the Central and Western Railway Administrations that the works relating to the junction arrangements and quarters at Bassein Road station which fell within the jurisdiction of Western Railway would be carried out by the latter. These works, *inter alia*, provided for an additional loop at Bulsar (now Valsad) and Baroda (now Vadodara) costing Rs. 4.22 lakhs each. The Western Railway Administration justified provision of the additional loops on the consideration that the wagons for Bombay area including those that are diverted to Central Railway via Dadar junction were being grouped at Baroda for loads arising at Baroda and coming from North of Baroda and at Bulsar for loads arising North of Bulsar. The marshalling of the wagons to be diverted to Central Railway via Dadar was done in Bandra Marshalling Yard. After commissioning of Diva-Bassein Road link, the load meant to be diverted via this link would have to be separated from the wagons meant for Bombay area for which a separate line each at Baroda and Bulsar had been provided in the estimate.

During the inspection of the project in December 1975, the Chairman, Railway Board, desired the Western Railway Administration to re-examine the necessity of the additional loops to be provided at Bulsar and Baroda. The Railway Administration did not give any reply to the inspection note. These loops were, however, included by the Administration in the revised estimate prepared in April 1976 at the enhanced cost of Rs. 13.60 lakhs (as against the earlier provision of Rs. 8.44 lakhs) on account of general increase in prices. Thereupon, the Ministry of Railways (Railway Board) observed (August 1977) that Diva-Bassein Road link would serve as a bye-pass line for the traffic moving via Dadar and that it would not result in any additional traffic at Bulsar/Baroda. Accordingly, they instructed the Administration to delete these items from the revised estimate. The Administration maintained in November 1977 that these works were justified on the same grounds as mentioned in the original estimate.

A detailed estimate amounting to Rs. 7.29 lakhs for providing an additional loop at Bulsar was sanctioned by the Administration in June 1979. Till December 1980 an expenditure of Rs. 5.05 lakhs was incurred on earth work, extension to culverts in the yard and procurement of permanent way materials.

The work for providing an additional loop at Baroda yard was abandoned in September 1979 for want of facilities in the yard to accommodate a full length line after incurring an expenditure of Rs. 9,949.

In a meeting held on 24th March 1980, the General Managers of both the Railways decided that the Western Railway would hand over traffic to the Central Railway in the manner specified below :—

"(a) Traffic for Kalyan and beyond at Bassein Road.

(b) Block loads of rock phosphate, etc., to Trombay subject to traffic offering in block loads at Bassein Road.

(c) Remaining traffic at Dadar."

The Western Railway Administration gave up the work at Bulsar finally in July 1981 on the plea of change in the pattern of traffic. However, there had actually been no such change and the pattern of traffic essentially remained the same. The traffic was earlier being diverted from Western Railway to Central Railway at Dadar and now it is being diverted at Dadar and Bassein Road (via new Link). The diversion of traffic at the latter point did not justify any additional loops at Bulsar and Baroda, particularly when there was no increase in traffic.

The Railway Board stated (February 1986) that according to the information received from Western Railway Administration in November 1985 permanent way materials worth Rs. 3.97 lakhs had been diverted from Bulsar to other works.

The Western Railway Administration's insistence to provide loops at Bulsar and Baroda in disregard of the Railway Board's instructions resulted in infructuous expenditure of Rs. 1.18 lakhs (Rs. 5.05—3.97 + 0.10 lakhs).

31. **Southern Railway—Delays in execution of staff welfare works**

A review of three staff welfare works sanctioned in Tiruchirappalli Division revealed abnormal delays in their execution due to changes in site, plans and quantities after the award of the contract and indecision in sanctioning revised estimates|higher rates demanded by the contractors, etc. The details of the cases are as under :—

1. *Staff quarters for Railway Protection and Security Force (RPSF) personnel*

In March 1979, the Railway Administration sanctioned construction of 38 staff quarters of different

types, at an estimated cost Rs. 28.93 lakhs including Rs. 4.59 lakhs for water and drainage arrangements. However, only the work of construction of staff quarters was awarded to contractor 'A' in June 1979 for Rs. 15.66 lakhs (89 per cent above BSR-1976) with stipulated date of completion as 8th July 1980. Subsequently, at the suggestion of the RPSF Commandant, the site of Type I quarters and barracks was changed and the final location was made available to the contractor in September 1979. There were also changes in the items of work, viz., in the size, type and number of doors and in the masonry work relating to type I quarters due to use of rubble in foundations for want of conventional type bricks. The contractor did not complete the work by the stipulated date (July 1980) and demanded (August 1980) higher rates for work done after the due date. The work on type III quarters was completed by December 1981, and the work on types I & II was completed by September 1984. The contractor's claim for payment of higher rates for work executed after July 1980 was referred to a pre-arbitration committee in April 1984 (over 3½ years after the date of claim) and based on its recommendation additional rates involving an extra amount of Rs. 4.88 lakhs were paid to the contractor in July 1984.

Although the provision of external water supply and drainage services formed an essential part of the work sanctioned in March 1979, tenders for the same were invited only in March 1983 and the work was allotted to the same contractor in June 1983 at a cost of Rs. 4.4 lakhs (172 per cent above BSR-1976). The delay was due to non-finalisation of plan/detailed estimates and in decision in regard to the type of water arrangements to be made. This resulted in extra expenditure of Rs. 1.13 lakhs due to cost escalation during the period from June 1979 to June 1983 (difference between the rates of 89 per cent and 172 per cent above BSR-1976). The loss of revenue on account of non-allotment of quarters in the absence of the above services during the period from March 1983 to September 1984 works out to Rs. 14,400.

2. *Improvements to water supply arrangements at Sarcarpalayam in Tiruchirappalli*

Against an estimate for Rs. 9.49 lakhs sanctioned by the Railway Administration in January 1975, tenders for the contractor's portion of the above work (Rs. 4.82 lakhs) were invited in February 1978 Besides other items, the work involved construction of two presedimentation tanks. The lowest offer received for the work was at 47 per cent above Basic Schedule of rates (BSR) of 1976. It was, however, discovered that the tender notice erroneously catered to one tank only. Accordingly, the tenders were cancelled. Revised tenders were invited in June 1978 and the lowest offer of contractor 'J' for Rs. 6.66 lakhs (23 per cent above BSR of 1976) was accepted in September 1978. The work was started in November 1978.

Meanwhile, in the light of quotations received in the first tender, the estimate for the work based on 1970 BSR was revised on the basis of 1976 BSR. This increased the cost of the work to Rs. 16.2 lakhs (70.15 percent over the original cost) which needed Ministry of Railways (Railway Board) sanction. In order to bring the cost within the power of sanction of the Railway Administration, the estimate was reduced to Rs. 10.78 lakhs (13.18 per cent over the original cost) after dropping the second presedimentation tank and the contractor was asked (December 1978) to take up construction of one tank only. The contractor demanded (April 1979) increase in rates from 23 per cent to 50 per cent above BSR or else requested for termination of his contract without liability (June 1979). The Railway Administration did not respond to this demand. The contractor demanded higher rates at 141 per cent above BSR in December 1980, 90 per cent above BSR in May 1981 and 136 per cent above BSR in August 1982. In the meantime work had remained at a stand-still since June 1979. The expenditure booked on this work upto August 1983 was Rs. 85.4 thousand. In addition, liability had been incurred on account of claims made by the contractor but not settled by the Administration so far (November 1985).

The Railway Board stated (January 1986) that the sedimentation work had been deleted from the Works Programme and that the amount of Rs. 80 thousand already spent had become a waste.

Thus, a work sanctioned in January 1975 but started in November 1978 (after a delay of more than 3 years) and scheduled to be completed by August 1979 was finally abandoned in 1986 (after a lapse of over 6 years).

3. *Improvements to water supply arrangements at Tiruchirappalli Goods yard, station and colony*

Against an estimate for Rs. 1.1 lakhs sanctioned by the Railway Administration in July 1974, open tenders for the above work were invited in October

1975. The lower of the two tenders received from contractor 'M' was for Rs. 1.6 lakhs which was in excess of the amount of Rs. 0.69 lakh provided for in the contractor's portion in the estimate. On the Railway Adminsitration's request, the contractor agreed to extend the validity period of his offer from February to May 1976. After negotiations with the tender committee, he also agreed to a small reduction of Rs. 2233 in his offer. The tender committee recommended acceptance of his revised offer with the stipulation that the estimate should be revised before issuing letter of acceptance. Although the contractor kept his offer open till February 1977 through three successive extensions of the validity period, the Railway Administration failed to revise the estimate even by that date.

Meanwhile, a revised estimate for the work based on BSR 1976 was sanctioned by the Railway Administration in November 1978 for Rs. 3.46 lakhs. The Railway Administration floated (March 1979) a limited tender for the work and out of four offers received, the lowest offer received from contractor 'J' for Rs. 4.47 lakhs (86 per cent above BSR 1976) was again found to be in excess of the amount of Rs. 1.76 lakhs provided for contractor's portion in the revised estimate. The contractor agreed to keep the offer open till November 1979. However, tender had to be cancelled again as the Railway Administration failed to revise the estimate owing to many modifications to the plans having been done at various stages.

Limited tenders were again invited in December 1979 without revising the estimates. The lowest offer of Rs. 2.7 lakhs (132 per cent above BSR) was again from the contractor 'J', which was accepted by the Railway Administration. The scheduled date of completion was 21st January 1981. However there was very little progress on this work due to site conditions necessitating re-alignment of the pipe line and the contractor was given extension upto 30th July 1981. The matter thereafter remained under correspondence with the contractor till 17th May 1982 when a notice was sent to the contractor. After granting two further extensions till 31st December 1982, the contract was finally terminated on 24th March 1983. The total expenditure booked on this work upto August 1982 is Rs. 1.11 lakhs out of which Rs. 36,653 pertain to the contractor's bills, and the balance represents the cost of Railway materials already used for construction of RCC tanks. The work is presently not progressing due to difficulty in getting an electric booster pump.

Thus, a work sanctioned in July 1974 has made no tangible progress in its execution (till November 1985) due to repeated failures of the Railway Administration to invite tenders based on a realistic estimate, and in the meantime funds of over Rs. 1 lakh remain sunk in it.

32. **Southern Railway—Construction of staff quarters at Podanur**

A contract for construction of 16 units type I quarters was awarded to Contractor 'A' for Rs. 3.13 lakhs in August 1978. The work was to be completed by May 1979. The Railway Administration changed the site twice (October 1978 and April 1979) within eight months of the award of the contract. The second site was made available to the contractor only one month before the stipulated date of completion. At the request of the contractor the Railway Administration granted extensions of time on four occasions, the last extension being up to 31st March 1981, on grounds like delay in finalisation of the site plan, difficulty in procurement of materials and labour and heavy rains. The contractor failed to complete the work and finally abandoned the work in February 1981. By this time an amount of Rs. 1.79 lakhs had been paid to the contractor.

The Railway Administration served notice on the contractor on 16th February 1981 stating, *inter alia,* that joint measurement would be done on 20th February 1981 and balance work got done by some other agency at his risk and cost. The work was measured on 5th March 1981 and the contractor did not present himself. It was found that the contractor had been overpaid Rs. 0.33 lakh due to wrong measurements recorded by the Inspector of Works, but a sum of Rs. 22,231 only was available with the Railway Administration in the form of earnest money and security deposit.

A contract for the left over works (value : Rs. 1.67 lakhs) was awarded to contractor 'B' at risk and cost of the Contractor 'A' in November 1982 for Rs. 3.34 lakhs. The work was completed for Rs. 2.87 lakhs in February 1984. The Railway Administration incurred an additional expenditure of Rs. 1.20 lakhs in getting the left over work completed through Contractor 'B'.

Thus, there was a delay of over 4½ years in the construction of 16 units type I quarters mainly because of delay in finalisation of site plan, failure of contractor 'A' to complete the work within the stipulated time and delay of over 20 months (February 1981 to November 1982) in awarding the left over work to another contractor. Further, though

the contract was rescinded in February 1981, the recovery of the risk cost (Rs. 1.20 lakhs) from the defaulting contractor is yet to be made (October 1985).

The Railway Administration stated (November 1985) that action to recover the risk cost (Rs. 1.20 lakhs) from the defaulting contractor was initiated in November 1983 by addressing the Tehsildar of Coimbatore to furnish full particulars of the defaulting contractor's immovable properties. The Tehsildar, Coimbatore issued notice to the defaulting contractor in May 1985 to remit the amount on or before 12th June 1985. However, the party has not remitted the amount so far (December 1985).

33. South Central Railway—Delay in construction of staff quarters and recovery of risk cost

The Railway Administration awarded (November 1978) three contracts (value : Rs. 31.4 lakhs) to contractor 'A' for construction of quarters for the staff of the wagon repair shop at Rayanapadu (near Vijaywada)—one for 64 units of Type-I (value : Rs. 9.6 lakhs) and the remaining two for 64 units of the type-II each (value : Rs. 10.9 lakhs each) to be completed by 29th November 1979.

The contractor commenced work in January 1979 but his performance was unsatisfactory owing to insufficient employment of labour and delayed procurement of building materials. At the request of the contractor extensions were granted on 5 occasions starting from 30th November 1979 and ending on 31st December 1981, 28th February 1982 and 31st March 1982 after certifying that the delay in completion of the work would not result in any loss/damage to the Railway Administration. During the period December 1981 to December 1982 '7 days' and '48 hours' notices for termination of the contracts were issued by the Railway Administration on 5 occasions (in one case on 6 occasions). Further extensions in piece meal upto 31st December 1982 were also granted on the contractor's plea that there was dislocation of labour following cyclone and scarcity of diesel and building materials.

All the three contracts were ultimately terminated in January 1983 at the risk and cost of the contractor. Fresh contracts for the left over works (value Rs. 6.70 lakhs) were awarded to three other contractors at Rs. 15.38 lakhs in August 1983. The left over work was completed in March 1984.

The Administration assessed (September 1984) Rs. 8.68 lakhs as recoverable from the contractor towards risk and cost and Rs. 1.57 lakhs towards the cost of cement and steel issued in excess. After adjusting Rs. 3.25 lakhs against security deposit and unpaid bills of the contractor, a balance of Rs. 7 lakhs remained to be recovered. The Railway Administration filed (November 1984) a civil suit for recovery of Rs. 2.58 lakhs towards risk and cost in respect of one of the three contracts, the claims of the contractor in all the three cases totalling Rs. 13.01 lakhs were also referred to Joint Arbitrators (June 1985).

The certificates given by the Railway Administration while granting extensions of time viz., the delays in completion of the work did not result in any loss/damage were factually not correct in as much as the Administration had sustained a loss of Rs. 6.05 lakhs by way of payment of house rent allowance to the employees (Rs. 2.90 lakhs) and loss of rent (Rs. 3.15 lakhs) during the period January 1980 to March 1984.

The Administration stated (December 1985) that extensions were granted after considering merits of each request from the contractor; notices were issued to get the work expedited and the railway's restricted supply of cement affected the progress of the contractor's work adversely. These contentions of the Railway Administration are not tenable since extensions for a total period of 37 months against the period of completion of 12 months would hardly be justified and the supply of cement had been restricted only for a period of 3 months (May 1979 to July 1979) before the original scheduled date of completion (November 1979).

34. South Eastern Railway—Non-utilisation of an assisted siding

A firm requested the Railway Administration (January 1962) to provide assisted-cum-private siding facilities to serve its glass and ceramic works at Barang (Orissa). According to the firm's projections 610 tonnes (30 four wheeler wagons) of traffic were expected to be offered per day (both inward and outward). The traffic was further expected to be doubled in five years. The Railway Administration initially accepted (March 1963) the proposal of the firm on private siding terms. Subsequently, the firm requested (May 1963) to extend the facility of assisted siding within the Railway land. This was agreed to by the Railway Administration in September 1963. Accordingly, an estimate for Rs. 3.03 lakhs (Rs. 2.39 lakhs chargeable to 'Deposits' and Rs 0.64 lakh chargeable to 'Capital') was sanctioned (October 1967) by the Railway Administration for providing assisted-cum-private siding faciilties. As per sanctioned estimate, party's share for the

assisted portion of the siding was Rs. 0.46 lakh. Subsequently, the party was allowed to do the earthwork etc., amounting to Rs. 0.37 lakh. As a result, party's share for assisted portion stood at Rs. 0.09 lakh, which was deposited by the firm.

The Railway Administration incurred (1967-68) an expenditure of Rs. 62 thousand on construction of the assisted siding. The firm did not undertake the construction of the private portion of the siding and although more than 18 years have since elapsed, that portion of work has not so far (December 1985) been executed. In consequence it has not been possible to open the assisted siding to traffic. The traffic offered (both inward and outward) by the firm at Barang Railway Station during 1982-83 was even less than one wagon per day (against the anticipated traffic of 60 wagons per day). As a result, the investment of Rs. 62 thousand made by the Railway Administration in the construction of the assisted siding had remained unproductive. In the meantime interest, maintenance and depreciation charges recoverable at the rate of 11.5 per cent on this investment have been accumulating for the last 18 years, and the total dues as on 31st December 1985 stood at Rs. 1.30 lakhs. There is no prospect of any recovery being made from the firm on this account as the siding has not been opened to traffic. Besides, dividend paid to general revenues on the capital investment of Rs. 62 thousand over the last 18 years amounted to Rs. 0.69 lakh.

The following points arise in this case :—

(1) The Railway Administration failed to make a realistic assessment of the traffic projections given by the firm.

(2) Though the siding has been lying unutilised for the last 18 years, the Railway Administration has not taken any action to dismantle it, avail of the credits from its released materials and write down its capital cost.

(3) The loss suffered by the Railway so far (December 1985) aggregated to Rs. 1.99 lakhs.

35. Southern Railway—Non-utilisation of goods shed facilities

The new broad guage (B.G.) line Trivandrum-Nagercoil-Kanniyakumari was opened to traffic in April 1979 and the section between Nagercoil-Tirunelveli in February 1981. Certain ancillary facilities like goods sheds, goods shed placement lines and approach roads were provided at seven stations—4 on the former section and 3 on the latter at a cost of Rs. 5.47 lakhs.

Though the two sections of the new line were opened for traffic in April 1979|February 1981, three stations on Kanniyakumari-Trivandrum section, viz., Kanniyakumari, Eraniel and Neyyattinkara are yet to be opened for goods traffic. At Kulitturai which was opened for traffic in October 1980, the goods earnings (inward traffic) had shown steep fall as indicated below :—

Year	Earnings Rs.
1981-82	10,293
1982-83	5,644
1983-84	360

On Nagercoil-Tirunelveli section, goods earnings at Nanguneri station opened for goods traffic in April 1980 were nil during the years 1981-82 to 1983-84. At Valliyur also opened in April 1980, though the earnings during 1981-82 were Rs. 18,842 there were no earnings during 1982-83 and 1983-84. At Aralvaymoli, no goods shed has been constructed and an expenditure of Rs. 75,952 incurred mainly for providing earthwork for the same has been rendered infructuous.

Evidently, the goods traffic potential had not been properly assessed at the time of provision of goods sheds and facilities excessive to requirement had been created, resulting in an avoidable expenditure of Rs. 5.47 lakhs.

The Railway Administration stated (February/November 1985) :

(1) the goods traffic potential had been assessed during the sixties and no industries or manufacturing units had since come up in the area to generate traffic in raw materials and finished goods; there was also diversion of traffic to road which had inherent advantages besides being cheaper; and

(2) piecemeal loading at wayside stations declined with the change in operating strategy to move more and more block rakes.

These arguments are, however, not tenable as the Railway Administartion, while updating the preliminary survey had informed the Railway Board in August 1970 that the existence of a well organised road transport had been duly taken into account while making the traffic assessment. Further, the changes in operating strategy to move traffic in block rakes is not relevant, considering that the traffic offering at the stations in question was either nil or too meagre to be diverted to block rakes.

CHAPTER VII

LAND

36. Central Railway—Licensing of railway land for shops at Pune

With a view to earning revenue by utilising surplus railway land for commercial purposes, the Railway Administration licensed (May and October 1980) land to various parties for construction of 35 shops at Pune on a monthly license fee of Rs. 300/350 per shop.

However, the Municipal Corporation, Pune did not permit the licensees to do their business in these shops as these had been constructed in contravention of the municipal bye-laws which required them to be located at a given distance from the centre line of the road. On complaints from the licensees the matter was discussed by the Railway Authorities with the Municipal Authorities in January 1982. During discussion the Railway Administration explained that it would take them at least two years to get the structures shifted in order to conform to the municipal bye-laws. In the meantice, the licensees field (September 1981) a suit against the Municipal Corporation/ the Railway Administration and obtained (September 1983) a stay order against the proposed demolition of the shops by the Municipal Corporation. The stay order was vacated by the Court in April 1984 and the Municipal Corporation demolished the shops in April 1984.

According to the terms of the agreement between the Railway Administration and the parties the shops were to be constructed by the licensees according to the Railway's drawing and under the Railway's supervision. The agreement further provided that the Railway Administration would erect rail|tubular posts for the structures of the shops and the remaining work of asbestos cement sheet roofing, side sheeting|walling and flooring, etc. would be done by the licensees themselves. The Railway Administration did not maintain any separate account of expenditure incurred by them on the portion of work done by them. However, according to an assessment made by them in December 1985 this expenditure worked out to Rs. 21,785.

All the licensees were in possession of the shops till their demolition in April 1984, but no one has paid any licence fee from October 1981 onwards (after the suit had been filed by the licensees in September 1981). The total dues on this account are assessed at Rs. 3.98 lakhs for the period October 1981 to March 1984. Against the Railway's dues of Rs. 3.98 lakhs, a sum of Rs. 1.19 lakhs only recovered from the licensees by way of security deposit, licence fee and cost of forms/agreements, plants etc., is available for adjustment. Thus, an amount of Rs. 2.79 lakhs is still due for recovery. There is little possibility of any recovery being effected. According to the Railway Administration the shopkeepers had not been able to make use of the land licensed to them as shop licences were not given to them by the Municipal Corporation.

The Railway Administration's failure to have the shops constructed in conformity with the municipal bye-laws in the first instance and again to shift the shops as required by the Municipal Corporation, resulted in loss of earning potential of Rs. 1.27 lakhs per annum. The railway land is presently lying vacant and no revenue is being earned therefrom (October 1985).

37. Central Railway—Non-recovery of rent of commercial plots leased to outsiders

Commercial plots of land are leased out to outsiders by the Railway Administration for stacking rail borne goods. Station Masters are required to maintain lease registers showing the particulars of such plots of land. Monthly statements showing particulars of recovery of licence fee are required to be submitted to the Accounts Office for keeping a watch over correct and timely realisation of the fees in all cases.

In February 1968, the Divisional Accounts Officers were made responsible to ensure timely recoveries of rent and its periodical revision. In August 1976, it was decided that the work relating to recovery of licence fee from Commercial plot holders should be transferred to Traffic Accounts Office from September 1976. The periodical revision of rent was, however, left to be watched by the Divisional Accounts Officers themselves.

The Railway Administration decided (September 1979) to classify all the stations on the Railway into number of groups depending on their commercial

importance and to fix the licence fees separately for each group. The licence fee so fixed was to be escalated at the rate of 10 per cent every year.

In April 1981, it was noticed in Audit that the recovery of licence fee was not being effectively watched. The Accounts Office advised in February 1982, that a system had been introduced under which the Travelling Inspectors of Accounts concerned had been asked to give a report covering all aspects, i.e., recovery effected, arrears in recovery, vacant position of the plots etc., while conducting inspection of stations. In December 1982 it was again pointed out to the Accounts Office that the plot rent registers were not properly posted.

A review of the plot rent registers conducted by Audit in September 1985 revealed that rent dues amounting to Rs. 7.47 lakhs for the period 1977 to 1982 were outstanding at the end of July 1985. However, no reasons for the arrears were recorded in the plot registers.

In January 1985 the Railway Administration attributed the outstandings to :

(a) the cases pending in courts; and

(b) want of whereabouts of the parties. Notices served on the parties had been returned by the postal authorities.

However, as seen from the records of Traffic Accounts Office in April 1985 there was only one case, involving Rs. 0.11 lakh (approximately), pending in a court.

The Railway Board stated (March 1985 and 1986) that particulars (addresses, etc.) were not traceable in respect of dues amounting to Rs. 5.17 lakhs and that the amount due on account of pendency of cases in court was Rs. 0.27 lakh, while the amount not paid by plot holders was Rs. 2.03 lakhs.

38. **Central Railway—Licensing of railway land under tehabazari scheme**

With a view to augmenting railway revenues, the Administration issued instructions in March 1979 for licensing of railway land for various purposes like cultivation, fishing rights, growing grass or commercial use.

Accordingly, on Bombay Division, hawkers were given (May 1979) land near railway stations on 'Squatter license' for 'Tehabazari' purpose i.e., selling without roof either by squatting on ground or by Cycle, Thella, etc. The hawker-licensees, however, infringed the conditions laid down in 'Squatter license' and erected wooden cabins/booths/stalls.

The Divisional Authorities had been initially considering (May 1980) regularisation of these cabins/booths/stalls by entering into agreements with the hawkers. However, in January 1981 the General Manager issued instructions that no shops should be permitted in the circulating area in front of any station as a general rule. Consequently, the Divisional Authorities did not renew the 'Squatter licences' of 198 hawker licensees operating in the circulating area, terminated their licences with effect from 1st April 1981 and initiated eviction proceedings against them under the public premises (Eviction of Unauthorised Occupants) Act, 1971. The hawkers continue to occupy unauthorisedly the space (initially licensed to them) free of charge from April 1981 onwards.

Licence fees to the extent of Rs. 11.52 lakhs due upto 31st March 1985 from 343 hawkers including 198 hawkers against whom eviction proceedings are in process, were awaiting recovery (December 1985).

CHAPTER VIII
EARNINGS

39. Western and Eastern Railways—Tourist special trains—the 'Palace on Wheels' and the 'Great Indian Rover'

With a view to promoting tourism and increasing country's foreign exchange earnings, the Railway Board approved in September 1981 a scheme to introduce a special tourist train 'Palace on Wheels' in collaboration with the Rajasthan Tourism Development Corporation (RTDC), a public sector undertaking of the Government of Rajasthan. A scheme of running another tourist special train the 'Great Indian Rover' was also approved by the Railway Board in July 1982 and an agreement was entered into by the Eastern Railway Administration in February 1983 with the India Tourism Development Corporation (ITDC).

A review by Audit of the working of these tourist special trains revealed that total running cost was not commensurate with the earnings, these schemes had not been commercially successful and detailed economics of their operation had neither been worked out before the services were introduced nor during their operation from January 1982 and November 1983 respectively as described in the succeeding paragraphs. In consequence, no steps were taken to find out ways and means to make these schemes profitable.

(i) *Palace on Wheels*

In June 1981, the Railway Board decided that the special train would consist of saloons preferably those built for the use of former Maharajas and hauled by a vintage class of steam engine. One MG special train consisting of 18 bogies including 12 saloons, two modified first class coaches, one lounge car, one restaurant car and two sitting-cum-luggage-cum-brake vans (SLRs) was, therefore, formed with a view to providing accommodation for 102 passengers. The train was to be hauled by a steam engine between Delhi Cantt. and Agra Fort via Bandikui and Agra Fort—Jaipur—Delhi Cantt. and by a diesel engine for journey beyond Jaipur. The existing carriages and saloons forming 'Palace on Wheels' were overhauled and provided with additional fittings at a cost of Rs. 136.91 lakhs (booked expenditure upto 1984-85). The accounts of the work have not so far been closed (December 1985).

The agreement executed in January 1982 between Western Railway and the RTDC which was valid till 25th January 1985 and further extended upto 31st March 1988 provided, inter-alia, that Railways would be responsible for the operation and maintenance of the train and the RTDC for providing house keeping including the provision of lines, its replacement and laundry services, catering (on board and on ground) local sight seeing and entertainment of guests and selling the tickets which would be inclusive of the tariff and also catering, house keeping, sight seeing and entertainment services. The RTDC would be working as a nodal agency for marketing promotion and publicity and the Railway would reimburse their share of expenditure, to be mutually agreed, on publicity, both domestic as well as international, in equal share Initially, 30 members of staff and officers of RTDC were to travel in this train to look after the management, but the number was increased to 48 in November 1982 and 55 in January 1983.

The tariff which included cost of travel, catering charges, conducted sight seeing tours in deluxe buses at the places of tourist interest, elephant and camel rides, cultural entertainment, etc., in force from October 1984 to March 1985 was as under :

	Total charges per person per night	Railways' share	R.T.D.C.'s share
	Rs.	Rs.	Rs.
Coupe	1290	765	525
Single supplement in coupe	2125	1525	600
Two persons in 4-berth luxury cabin.	2125	1525	600
Three persons in 4-berth cabin.	1620	1020	600
Four persons in a 4-berth cabin.	1250	745	505

(Half fare for children between 5 and 12 years).

The tourist train was to operate between October to March each year. Five promotional tours were programmed between 26th January to 31st March

1982. The first spell of its itinerary commenced on 26th January 1982. On commercial basis, the train operated as mentioned below :

Year	No. of tours	No. of passengers carried	Average occupation per trip	Minimum occupation required to break even per trip	Percentage utilisation of the capacity
1982-83	26	1056	41	89	40
1983-84	26	951	37	77	36
1984-85*	21	781	37	89	36

*Full capacity of train was 98 only as against 102 originally provided.

Out of the total earnings collected by RTDC by the sale of tickets, the Railway's share and the amounts actually remitted by the RTDC were as under :

Year	Amount of Railways' share	Amount remitted by RTDC	Amount outstanding
	Rs.	Rs.	Rs.
1981-82 1982-83	129759.65 3566380.08	3077465.45	6,18,674.28
1983-84	4315728.73	4264367.49	51361.24
1984-85	3573457.89	3573457.89	..
TOTAL	11585326.35	10915290.83	670035.52

The economic viability of this scheme had not been worked out before the special train was introduced. However, an appraisal made by the Railway Administration in March 1985 revealed that the loss sustained by the Railway in operating this train during 1982-83, 1983-84 and 1984-85 was to the tune of Rs. 42.35 lakhs, Rs. 47.66 lakhs and Rs. 50.61 lakhs** respectively as detailed below :

	1982-83	1983-84	1984-85
	Rs.	Rs.	Rs.
Total direct cost	57,39,878	63,01,854	60,38,604
Total indirect cost	7,55,167	13,97,997	11,96,915
Other incidental cost	13,05,881	13,81,555	12,92,417
Total cost	78,00,926	90,81,406	85,27,936
Total gross earnings	35,66,380	43,15,729	34,66,888**
Loss	42,34,546	47,65,677	50,61,048**

NOTE : **Figures of earnings (provisional) as adopted by the Railway Administration in March 1985. Amount of Railway's share was Rs. 35,73,457.89 and on this basis loss would be Rs. 49.54 lakhs during 1984-85.

(ii) *The Great Indian Rover*

This special train was to run to a specified schedule to cover places of interest to Buddhist pilgrims in India and abroad.

The agreement entered into between the Eastern Railway Administration and the India Tourism Development Corporation (ITDC) in February 1983 was valid for three years in the first instance and provided, *inter alia*, that the train would consist of fully air-conditioned vestibuled passenger coaches with a capacity of 14 passengers per coach. Besides, facilities of inter-communication, a sound system for music and announcements, one air-conditioned lounge car with a separate compartment to be used as a prayer room, one air-conditioned dining car, and one luggage-cum-brake van as mutually agreed upon by the Eastern Railway Administration and the India Tourism Development Corporation, would also be provided. The itinerary would be fixed for a round trip of 5 days/5 nights duration in consultation with the ITDC and train would operate only between November and March of a year. The operation and maintenance of the train would be the responsibility of the Railway Administration. The ITDC would be responsible for the sale of tickets, rendering accounts therefor and remitting Railways' share of earnings.

An all inclusive tariff of Rs. 5,100 per passenger for round trip of 5 days/5 nights duration was fixed by the Railway in July 1983 out of which Railways' share was Rs. 2,160 per passenger and that of ITDC Rs. 2,940 per passenger.

The Railway Administration specially renovated 14 coaches belonging to different Railways (viz., Western, Central and Eastern Railways) at a cost of Rs. 45.32 lakhs to constitute the special train. A further sum of Rs. 1.94 lakhs was spent on providing telecommunication facilities. The accounts of the work have not so far (November 1985) been closed. The cost of operation per round trip from Howarh to Gorakhpur (touching Gaya and Varanasi) was estimated to be Rs. 96 thousand. The special train was put into commercial operation on a weekly basis from November 1983.

During the first spell (between November 1983 and March 1984) it performed 13 weekly trips as against 22 trips due to be undertaken and carried 423 passengers against 1078 that ought to have been carried. Likewise, during the second spell (between November 1984 and March 1985) it undertook only 8 trips with only 176 passengers. The operating cost of these 21 trips had been

estimated (February 1984) at Rs. 20.16 lakhs. Against this, Railways' share of earnings was only Rs. 12.94 lakhs but the ITDC had remitted only Rs. 9.96 lakhs upto November 1985 without the connected passenger manifest and the accounts of each trip.

This train also undertook two special trips during September and October 1984 for the travel of New York Philharmonic Orchestra Group and the Universal Federation of Travel Agents Association from New Delhi to Agra and back. An amount of Rs. 77,250 was realised as Railways' share. The details of expenditure incurred on this trip was not available (November 1985).

In view of continued poor patronisation, the Railway Board decided (March 1985) to revise the itinerary for this train as "See India" on Delhi-Agra-Khajurao-Varanasi circuit and base the train in Delhi area for running mostly on the Northern and Central Railways. The economics of the scheme of running 'Great Indian Rover' had not been worked out before the scheme was introduced. It had not been done subsequently though the train operated for over two years. The economics of operating "See India" has also not been worked out (November 1985).

40. **North Eastern Railway—Loss of revenue due to short calculation of distance and non-revision of siding charges**

For dealing with Petroleum Oil Products (POL) of Indian Oil Refineries Ltd., Barauni, there are two assisted sidings, one on the metre gauge (MG) of North Eastern Railway served by Barauni Junction station for traffic booked to metre gauge destinations of that Railway and another on the broad gauge (BG) provided by Eastern Railway served by Simaria station (on Barauni Junction-Mokama-ghat Broad Gauge route). Both the sidings are independent booking points though their booking offices are in the same building.

Consequent upon the conversion of the MG sections of North Eastern Railway between Barauni and Gonda via Samastipur, Muzaffarpur, Sonpur, Chapra, Bhatni and Gorakhpur into BG between April 1981 and June 1981, the booking of POL traffic from the MG siding to the stations on the above section was discontinued and instead, the same was booked from BG siding of Eastern Railway from May 1981 and hauled over this siding and a bye-pass BG line upto Barauni Junction station involving a detour over the BG siding upto Simaria station (5 km) and over the BG bye-pass line (7 km) (total 12 km). However, siding charges on such traffic had been realised for a distance of 5 km. upto Simaria station and freight from Barauni Junction station to destination stations on the above BG section. No charges had been realised for the haulage of wagons over the BG bye-pass line (7 km). This anomaly was pointed out by Audit (April 1984) to the Railway Administration but the siding charges for the actual distance over which the wagons were hauled have not been fixed so far (December 1985). The loss of revenue on this account on the POL traffic booked to only 2 stations viz., Gorakhpur during April 1983 to November 1983 and Gonda during April 1983 to May 1984 had been assessed by Audit as Rs. 2.45 lakhs. Since remedial measures have not been taken so far (January 1986), the loss of revenue continues to occur.

Incidentally, it is mentioned that for the traffic of Fertilizer Corporation of India booked by Eastern Railway to the same BG stations of North Eastern Railway on the above section and hauled upto Barauni Junction station by the same route, siding charges for 5 km upto Simaria station and freight for extra 7 km i.e., for 12 km had been realised by that Railway.

The draft paragrapn was issued to the Railway Administration in August 1985; its reply is still awaited (January 1986).

41. **Western and North Eastern Railways—Loss of revenue due to adoption of incorrect distance for levy of freight**

Consequent upon the conversion of metre gauge (MG) line to broad guage (BG) from Chapra to Malhaur *via* Gorakhpur and Gonda (North Eastern Railway), the chargeable distance for traffic booked from Western Railway (MG) to the MG stations on the non-converted MG portion of North-Eastern Railway by all MG route increased by 60 to 369 kms. Necessary notifications rationalising the routing of traffic by the all MG route (for carriage as well as for freighting) were issued in August 1981 by the Western and North Eastern Railways.

During audit inspection of Mehsana station in July 1982 and again of Mandsaur station in September 1984 (both on Western Railway), it was noticed that freight on traffic booked to MG stations on North Eastern Railway had been charged on the basis of the old distances resulting in short realisation of freight amounting to Rs. 5,977 and Rs. 1,12,301

respectively. The Administration stated that undercharges of Rs. 449 and Rs. 1,11,535 respectively out of the above had already been detected in internal check and included in the incorrect statements of respective months. However, the entire amount of Rs. 1,18,278 (Rs. 5,977 plus Rs. 1,12,301) is still (December 1985) outstanding. It was suggested to the Railway Administration that the position might be reviewed at other stations, but no action was taken for conducting the review till June 1985 when instructions were issued by it to the Divisions to undertake the review.

In March 1985, during inspection of Sabarmati station, Audit again pointed out undercharges of Rs. 3.80 lakhs comprising :

(i) Rs. 41,074 on food grains traffic of Food Corporation of India booked from Sabarmati to Azamgarh on account of charging freight for 1753 kms. instead of 2122 kms.

(ii) Rs. 7,731 on cement products booked to Azamgarh, Balrampur and Saidabad.

(iii) Rs. 3.31 lakhs on aviation turbine fuel (ATF) traffic booked from Indian Oil Corporation (IOC) siding, Sabarmati, to Military siding, Gorakhpur, on account of charging freight for 1636 kms. instead of 1696 kms.

The Railway Administration recovered Rs. 47,598 (June 1985) out of the undercharges of Rs. 48,805 on foodgrains and cement traffic and stated (July 1985) that the traffic in ATF was not covered by the rationalisation scheme and, therefore, this traffic had to be routed by the shortest route and charged by the cheapest route under Rule 125 of the IRCA Goods Tariff. However, it has been noticed that with effect from April 1985 freight on this traffic booked from IOC siding Sabarmati (MG) to Military siding Gorakhpur (MG) had been charged for 1696 kms.

The Railway Administration stated (December 1985) that the station staff had been charging freight on ATF booked from the above mentioned siding by the longer all MG route for a distance of 1696 kms. as a precautionary measure and that as per correct procedure the traffic was chargeable by the cheaper route. In this connection it is significant to mention that the traffic had been booked by the I.O.C. from one MG siding to another MG siding; however, on the shorter MG-cum-BG route facilities for transhipment at the break of gauge point did not exist. Besides, traffic in liquids in bulk involving transhipment is not to be accepted for despatch except under special arrangement (cf. Rule 180 ibid). Therefore, MG-cum-BG route could not be said to be available for carrying P.O.L. traffic and for that matter, for determining the shortest and the cheapest route for this type of traffic. Accordingly, P.O.L. traffic had necessarilly to be charged via all MG route. The Railway Administration have, however, not taken steps to recover the undercharges amounting to Rs. 3.31 lakhs.

42. Western Railway—Non-recovery of charges for excess loading of animals

Prior to 1st June, 1981, calves and sucklings of horned cattle, when carried by goods or mixed trains, were to be charged at the wagon rates notified in the Goods Tariff, the permissible number of animals being 20 calves and sucklings in one four wheeled Broad Gauge wagon. BCX and CRT wagons were to be treated and charged as for 2 and 1.10 four wheeled Broad Gauge wagons respectively. Excess load was to be recovered at 15 paise per head per kilometre.

For want of conventional four-wheeled wagons, the Railways had supplied, new types of wagons such as BCX and CRT wagons. In such cases the number of animals loaded were far in excess of the permissible number. But the additional freight for such excess number of animals loaded was not levied as per rules. During internal check of invoices, the Traffic Accounts Office initially detected an undercharge of Rs. 22,805 in respect of such traffic booked from Sawai Madhopur and raised debits for the same in April 1981. A test check by Audit (January 1982) of the invoices of such traffic booked from the same station for the period from December 1980 to March 1981 revealed that charges for excess loading had also not been realised resulting in a loss of revenue amounting to Rs. 1.45 lakhs.

Although a complete internal check of the rate on invoices of freight value of Rs. 50 and above has been prescribed, the short collection of freight on booking from December 1980 to March 1981 was not detected. When the irregularity came to notice in April 1981, the position was not reviewed for the past period to determine the extent of undercharges.

A sum of Rs. 6,350 had been recovered upto September 1985 from the Assistant Goods Clerk, Sawai Madhopur who was held responsible for the

short levy of freight charges to the extent of Rs. 1,34,778. At the present rate of recovery of Rs. 350 per month an amount of Rs. 41,300 may only be recovered by July 1995 i.e., the date of superannuation of the official concerned leaving a balance of Rs. 0.87 lakh. A further sum of Rs. 7,835 had been withheld from the settlement dues of another Goods Clerk held responsible for short recovery.

The draft paragraph was issued to the Railway Administration in October 1985; its reply is still awaited (January 1986).

CHAPTER IX

OTHER TOPICS OF INTEREST

43. Delay in recabling of electric locomotives and failure of power cables in locomotives

Electric Locomotives are required to be recabled after an interval of 12/15 years. According to the instructions issued by the Ministry of Railways (Railway Board) complete recabling of electric locomotives should be done as a normal schedule during the third Periodical Overhaul (POH) at Bhusaval and Kancharapara workshops which cater to POH of electric locomotives. The work of recabling of locomotives was not, however, undertaken by these workshops. Consequently, 253 locomotives became overdue for recabling at the end of March 1984 of which 130 locomotives were on Northern Railway. Failures of over-aged cables, their short circuiting, insulation failures, etc., had caused failures of equipments leading to failures of locomotives on line. Besides, immobilisation of locomotives, these damages had resulted in substantial losses as in some cases the locomotives themselves had to be condemned. Between 1979 and 1984 there were 41 cases of cable failures and 23 fire accidents on account of perished insulation in these locomotives. Eight locomotives (Eastern Railway-4, Northern Railway-4) in which fire had occurred were condemned by the railways between 1977 and 1984. Of these, in three locomotives, the fire was attributable to perishing of insulation due to overaging of cables. These locomotives had been in service for periods ranging from 20 to 22 years *i.e.*, approximately two-thirds of the prescribed life of 35 years and had to be condemned 10 years prematurely. The cost of replacement of these 8 locomotives is of the order of Rs. 6 crores approximately.

The enquiry conducted by the Northern Railway regarding two cases of fire in electric locomotives which occurred on 26th March, 1983 and on 23rd December, 1983 clearly established the cause of fire as due to short circuiting on account of overaged cables with perished insulation.

The Ministry of Railways (Railway Board) decided in September 1983 that, as the two workshops at Bhusaval and Kancharapara might not be able to carry out the recabling work on a regular basis, the Railways should plan to do the work in their electric loco sheds during the interim period. Accordingly, the Western Railway and Northern Railway Administrations had sanctioned estimates for Rs. 1.54 crores and Rs. 3.12 crores for recabling and repiping of the locomotives which should normally have been done during periodical overhauls.

Thus on account of inadequate planning and failure to carry out the recabling of electric locomotives according to schedule, the railways had incurred substantial losses due to fire accidents, loco failures, etc.

44. Eastern, Northern, Central, South Central, Southern and Western Railways—Working of Railway Hospitals

Introduction

44.1 Medical facilities are made available by the Railways to employees and their families through a net work of hospitals/health units spread over the divisions, workshops, etc., of each Zonal Railway. The main functions of the Railway hospitals are to provide institutional and domicillary medical care besides promotional health care. The hospitals at the Headquarters and divisional/workshop level of the Railways provide curative and diagnostic treatment in 'out' and 'in' patients departments, besides specialist services. The dispensaries, however, provide only outdoor treatment to the patients. A limited review was carried out in audit of the working of the medicare units on Eastern, Northern, Central, South Central, Southern and Western Railways. The result of this review is given in the succeeding paragraphs :

Purchase of medicines

44.2 Under the extant rules, the requirement of medicines including instruments, dressings, etc., is to be worked out before the commencement of the financial year on the basis of actual consumption during the previous year. The main sources of procurement are the rate contract holders of the D.G.S.&D., firms on which orders are placed centrally by the Chief Medical Officers of each Railway on tender basis and direct/local purchases of such items as are not readily available in hospitals, health units, etc.

44.3 The annual indents due to reach the concerned agencies in the month of August were submitted belatedly by B. R. Singh Hospital of Eastern Railway on different dates between September and December or even later for the years 1982-83 to 1985-86. The delayed placement of indents and consequent non/delayed availability of supplies led to this hospital resorting to extensive local purchases, defeating the objective of securing competitive rates through centralised bulk purchases. The value of local purchases ranged between Rs. 6.89 lakhs and Rs. 16.64 lakhs during the period 1982-83 to 1984-85 and constituted 31 to 35 per cent of the total procurement of medicines by this hospital from all sources as mentioned below :

Year	Total value of purchases	Local purchase	Percentage
	(Rupees in lakhs)		
1982-83	22.17	6.89	31.08
1983-84	34.80	11.56	33.20
1984-85	47.19	16.64	35.26

44.4 Medicines worth Rs. 42,750 were declared surplus by B. R. Singh Hospital of Eastern Railway. The Railway Administration stated (January 1986) that efforts to utilise them in other hospitals were being made.

44.5 On Northern Railway the local purchases of medicines amounted to Rs. 30 to Rs. 33 lakhs during the period 1982-83 to 1984-85 and constituted 17 to 13.6 per cent of the total procurement from all sources as detailed below :

Year	Total value of purchases	Local purchase	Percentage
	(Rupees in lakhs)		
1982-83	172.27	29.91	17.36
1983-84	193.40	32.49	16.8
1984-85	243.94	33.16	13.6

44.6 Time expired (October 1984) capsules of Spectrum (500 nos.) and injection of Gesicail (5 per cent) were issued by Jodhpur Hospital for consumption in October 1984, posing threats to the lives of the patients.

44.7 Time expired medicines worth Rs. 24,776 were in stock on Western Railway also. The Railway Board stated (January 1986) that the drugs in question were Procaine Penicillin which were not used to avoid complications in view of the reaction it produced in some patients.

44.8 An order for supply of 28,026 packets of cotton wool absorbent at the rate of Rs. 7 per packet was placed by Northern Railway Administration on a firm of Indore through D.G.S.&D., Madras in May 1979, stipulating delivery by 31st December 1980. The entire supply was declared substandard and rejected by the Railway Administration in May 1981. The Railway Administration took up the matter with D.G.S.&D. (July 1984) either to get the defective materials replaced by the firm or obtain refund of 95 per cent payment amounting to Rs. 1.88 lakhs made to them on proof of despatch. The D.G.S.&D. informed the Northern Railway Administration in October 1985 that the Pay and Accounts Officer, Department of Supply had been asked to withhold the 95 per cent payment from the pending bills of the firm, if any.

44.9 The tender enquiries for purchases of drugs and dressings were issued in certain cases by the Central Railway Administration without specifying the brand or quality required. While acepting the tenders the quantities required were split up between different tenderers, keeping in view the brand/quality offered for supply. This resulted in an extra expenditure of Rs. 2.17 lakhs.

44.10 The Railway Administration stated (December 1985) that splitting up of tendered quantity often becomes necessary in view of the urgency and past experience with the suppliers and it was a better strategy to make purchase of more than one brand of medicine from suitable higher tenderers depending upon the local circumstances, as it would enable the Railways to have prompt supplies from the firms concerned and also better clinical response from the patients.

44.11 *Non-utilisation/non-commissioning of equipments*

(a) *Artificial Kidney Dialyser*

In July 1982 an order was placed by the Western Railway Administration on a Belgium firm through their Indian agent for supply of an Artificial Kidney Dialyser with accessories at a cost of Rs. 1.32 lakhs. The equipment was to be installed and commissioned in Jagjiwan Ram (J.R.) Hospital, Bombay by the local agent at their cost. The equipment received in India in March 1983 was not taken delivery of from the port till 16th July 1983 as the cartridges supplied by the firm were not conforming to the specification nor was any technical literature furnished. On the supplier having assured that the cartridges would meet the required standard, the delivery of the equipment was taken by the Railway after payment of demurrage charges of Rs. 43,100. The equipment was not commissioned till December 1985 as the related blood pump was not in working

condition and needed replacement. Meanwhile, the warranty period of 18 months from the date of supply expired. The dialyser machine costing Rs. 1.75 lakhs had thus remained uncommissioned for over two years, depriving the patients of the benefits for which it was procured.

The Railway Administration stated (December 1985) that the blood pump had been got repaired in September 1985 and efforts to instal the equipment were in progress.

The blood pump stated to have been repaired had again gone out of order and remained to be installed (January 1986).

(b) The Fast Medical Scanner (cost Rs. 4.29 lakhs) and a Medical Spectrometer (cost Rs. 1.10 lakhs) received by J. R. Hospital, Bombay in March 1983 and April 1984 respectively were awaiting (December 1985) installation due to non-finalisation of sites. Meanwhile, the warranty period of 12 months from the date of despatch expired.

The Railway Administration stated (December 1985) that efforts were being made to instal them as early as possible.

(c) A telemetry transmitter-cum-receiver set (cost Rs. 36,319) purchased for J. R. Hospital in March 1980 had been in use with occasional breakdown till December 1983 when it went out of order. Efforts to get it repaired by the supplier and/or from alternative sources having been proved futile and erroneous/unpredictable results of the equipment having posed threat to patients' life, the equipment was condemned in May 1985 and a provision for its replacement at a cost of Rs. 4 lakhs (including Rs. 2 lakhs in foreign exchange) was made in the M & P Programme 1986-87. The hospital is without this equipment since May 1985.

(d) One X-Ray tube of an imported (July 1979) Mobile Image Intensifier having burnt down in December 1981 its replacement (Rs. 96,673) was ordered by J. R. Hospital after one year in March 1983 and supply received in February 1985. The delayed replacement rendered the main equipment costing Rs. 5.20 lakhs idle for three years.

(e) One Demineralisation Plant (cost Rs. 37,464) had not been giving satisfactory service since its installation in December 1979 in B. R. Singh Hospital of Eastern Railway and went out of order in April 1982. The Railway Administration stated (January 1986) that the machine needed re-charging of resins frequently by common salt and its repairs and maintenance periodically was beyond departmental capacity. Open tenders had been called for this purpose and were in process of finalisation. The Eastern Railway Administration further stated that the present day cost of this equipment was Rs. 70 thousand and with proper expert maintenance the same would be utilised for the purpose it was procured.

(f) A gas plant (cost Rs. 17,500) procured in October 1979 as a stand-by arrangement in case of failure of the electric chulla in B. R. Singh Hospital was not utilised till December 1985 as the purchase of necessary fuel for its running (at a cost Rs. 36,000 per annum) was not approved by the Associated Finance.

(g) At different hospitals on Northern Railway the following medical appliances had been lying out of order for long periods as indicated below :

Hospital	Particulars of the Machine	Cost	Period for which out of order	Remarks
Jodhpur . . .	COELAC Camera X-Ray.	Not available	98 months during July 1979 to July 1984	—
Central hospital. New Delhi	Defibrilator/ECI	Not available	Since September 1979.	The equipment was sent for repair on 17th December 1984 and is stated to be still under repairs.
Lucknow . . .	ECG recorder	Rs. 11,911	Since January 1983	Went out of order within one month of its receipt, got repaired and again went out of order; lying idle since February 1985.
Lucknow . . .	ALTOP Portable X-Ray.	Rs. 22,260	August 1983 to January 1985.	Repaired in February 1985 but again went out of order from the same month.
Bikaner . . .	Distillation Plant	Rs. 25,000	1963 to 1985.	Received in defective condition. Loss estimated at Rs. 60,298 inclusive of interest for 21 years @ Rs. 5.75 per cent per annum, etc.

44.12 *Non-utilisation of assets*

(a) Intensive Care Unit constructed in January 1984 at the Railway hospital, Allahabad at an estimated cost of Rs. 2.26 lakhs had been lying unutilised want of sanction to creation of posts for necessary staff. The Railway Administration stated (January 1986) that this had been commissioned in December 1985.

(b) A building (estimated cost Rs. 50 thousand) was constructed in 1978 for canteen in the J. R. Hospital campus (Western Railway) without obtaining Railway Board's sanction as required under extant rules. When approached in May 1980 for *ex-post facto* sanction, the Railway Board did not approve (March 1982) the proposal of the Railway and directed them to put the building to alternative use. The canteen which had started functioning since September 1981 had, therefore, to be closed in early 1983.

The Railway Administration stated (December 1985) that the building was being utilised for keeping hospital records and would be used for a mechanical laundry proposed in 1986-87 Works Programme.

(c) For bringing accident cases and patients suffering from serious ailments the hospitals are provided with ambulances. Two ambulances costing Rs. 1.47 lakhs were procured in 1982 for the proposed extension and upgradation of the health units at Ludhiana and Jalandhar (Northern Railway). The upgradation of the health units having not materialised so far (December 1985) for want of sanction of staff, the ambulances could not be put to use for the purpose for which these were procured. Another ambulance procured in April 1978 at a cost of Rs. 65 thousand for the Divisional Medical Hospital, Delhi remained out of order mostly during the period 1980 to 1984 and was awaiting repairs since April 1984.

44.13 *Uneconomical use of ambulances*

An ambulance (cost Rs. 45,549) procured (October 1977) for Divisional Hospital, Jodhpur (Northern Railway) was condemned in April 1985 before expiry of its normal life (10 years) on the ground of uneconomical repairs. Another ambulance (cost Rs. 40 thousand) of Jamalpur Hospital (Eastern Railway) procured in July 1970 was also prematurely recommended for condemnation in September 1977, even though it was in working condition and entailed repair charges of only Rs. 20 thousand till January 1985 since its purchase.

In contrast, two ambulances (cost Rs. 1.16 lakhs) of B. R. Singh Hospital (Eastern Railway) which had been repeatedly going out of order since procurement in September 1977 were being continued in service by incurring heavy expenditure on their repairs aggregating to Rs. 1.29 lakhs upto February 1985.

44.14 *Damages/losses/shortages of stores*

(i) Medicines and stores worth Rs. 27 lakhs stored in the basement of Baba Sahib Ambedkar (B.A.) Hospital, Byculla, Bombay were damaged due to heavy unprecedented rains (25th June 1985). The Central Railway Administration stated (January 1986) that Byculla area was not considered to be low lying and this basement depot built along with the main hospital building was never affected by rain all these years. The reason for flooding appeared to be gradual changes in the pattern of the natural drainage in Bombay rendering this part of the city prone to flooding. A proposal for obtaining write off sanction of the Railway Board for the entire amount of loss of Rs. 23.43 lakhs was being processed and that "the basement is not being used for storing drugs".

(ii) Stock verification (August 1975) of stores under the custody of a Matron of Divisional Hospital, Allahabad (Northern Railway) revealed shortages of stores valuing Rs. 49,328. The shortages were (December 1985) to be regularised while the Matron had been allowed to retire (July 1980) in the meantime.

44.15 *Overstocking of hospital linen*

While preparing yearly indent the closing balance of linen on hand had not been taken into account by the Railway hospital, Bhusaval. This resulted in over stocking worth Rs. 48,972 at 1978-79 price. The stock holding was large enough to cater to the requirements for three to seven years at the present rate of consumption. In J. R. Hospital of Western Railway also there was overstocking in about 38 items of linen worth Rs. 2.18 lakhs.

While the Central Railway Administration stated (December 1985) that the excess stock had been taken into account in indenting for 1985-86, the Western Railway Administration contended that holding of sufficient stock was necessary due to delay in getting the supplies, washing the linen during the monsoon, etc.

44.16 *Delay in revision of rates/non-recovery of diet charges*

The Railway hospitals supply diet to inpatients and recover charges at rates fixed by the Railway

Administration from time to time. As per extant orders diet charges are to be revised after every three years. Action for revision is to be initiated one year in advance and diet charges so fixed are to be made effective prospectively.

On Northern Railway the diet charges had not been revised (December 1985) since the last revision in July 1980, in spite of Railway Board's directives (September 1984) for ensuring prompt revision. Non-revision of diet charges involved considerable recurring loss on account of escalation in prices of diet ingredients. On Southern Railway the revision of diet charges due in February 1983 was done as late as March 1984 resulting in a loss of Rs. 2.14 lakhs.

Further, recovery of diet charges amounting to Rs. 35.68 lakhs pertaining to various periods between May 1980 and March 1985 had been outstanding on the Eastern, Western, South Central, Northern and Central Railways hospitals as detailed below due to arrears in and/or non-preparation of diet charges bills.

Railway	Amount due (Rs. in lakhs)	Period
Eastern (Sealdah & Liluah hospitals).	32.52	May 1980—December 1984.
Western (All Divisional hospitals).	1.34	April 1981—March 1985
South Central (Divisional hospital Vijayawada).	1.13	April 1981—September 1984.
Northern (Central and Divisional hospitals).	0.43	April 1982—March 1985
Central (Hospitals at Headquarters and Bombay & Jabalpore divisions)	0.26	1980-81 to 1984-85
Total	35.68	

44.17 *Family welfare activities*

The targets for family welfare activities are fixed annually by the Ministry of Health and Family Welfare for various departments/Ministries which are to claim reimbursement of the expenditure incurred by them from the former. The targets set for the Department of Railways are distributed by the Railway Board to the Zonal Railways. During the period 1982-83 to 1984-85 the targets fixed for different family welfare methods (Sterilisation, IUD and Contraceptives) remained unachieved on Northern, Eastern, Central and Western Railways to the extent of 68 to 80 per cent (Annexure X). While bulk of the expenditure of about Rs. 18.49 lakhs incurred by Central Railway on this account during 1984-85 had not been claimed from the Ministry of Health and Family Welfare, similar outstanding on Northern Railway amounted to Rs. 9.16 lakhs.

The shortfall in achievement on Western and Central Railways has generally been attributed by the Administrations to the targets being fixed too high.

44.18 *Operation of excess number of posts*

In the Divisional Railway Hospital, Lucknow (Northern Railway) as many as 29 posts in various categories (like Health Assistants, Nurses, Pharmacists, etc.) were being operated in excess of the sanctioned strength since 1979 entailing a total expenditure of Rs. 12 lakhs upto 1985, which had remained unregularised over the years for want of sanctions based on proper justification for operation of these extra posts.

The Railway Administration stated (January 1986) that after reconciliation and proper linking only 11 excess posts were being operated for which action for obtaining *ex-post facto* sanction had been initiated.

44.19 *Summing up*

(a) Delayed placement of indents by B. R. Singh Hospital of Eastern Railway for supplies of medicines necessitated local purchases during 1982-83 to 1984-85 ranging between Rs. 6.89 and Rs. 16.64 lakhs which constituted 31 to 35 per cent of the total value of purchases made by that hospital and defeated the objective of securing competitive rates through centralised bulk purchases. On Northern Railway also local purchases of medicines were done to the extent of Rs. 30 to Rs. 33 lakhs per annum during corresponding period and these constituted 13 to 17 per cent of the total purchases. (Paras 44.3 and 44.5).

(b) Medicines worth Rs. 42,750 had been lying unutilised in B. R. Singh Hospital (Eastern Railway). Besides, non-utilisation of medicines within the validity period entailed losses of Rs. 24,776 (Western Railway). (Paras 44.4 and 44.7).

(c) Defective supply of cotton wool absorbent against direct purchase orders resulted in extra expenditure of Rs. 1.88 lakhs. (Para 44.8).

(d) Splitting up of purchases of medicine by Central Railway resulted in an extra expenditure of Rs. 2.17 lakhs.(Para 44.9).

(e) Delays in installation/commissioning of certain equipments (5 items costing Rs. 8.47 lakhs on Western Railway, 2 items costing Rs. 0.55 lakh on Eastern Railway and 5 items 3 of which cost Rs. 0.59

lakh on Northern Railway) resulted in their prolonged idling, depriving the patients of the benefits expected of them. (Para 44.11).

(f) Intensive Care Unit (cost Rs. 2.26 lakhs) lying unutilised since its construction in January 1984 at the Railway Hospital, Allahabad for want of staff. (Para 44.12).

(g) A canteen building (costing Rs. 50 thousand) constructed (1978) by Western Railway without proper sanction had been lying unused since closure of the canteen in early 1983. (Para 44.12).

(h) Upgradation of health units at Ludhiana and Jalandhar (Northern Railway) having not materialised two ambulances (cost Rs. 1.47 lakhs) could not be utilised for the intended purposes since their procurement in 1982. While one ambulance each in Jodhpur and Jamalpur hospitals costing Rs. 45,549 and Rs. 40 thousand respectively was prematurely condemned, 2 ambulances (cost Rs. 1.16 lakhs) were being continued in service on Eastern Railway at the cost of heavy repair charges (Rs. 1.29 lakhs). (Paras 44.12 and 44.13).

(i) Improper storage of medicines in the basement of B. A. Hospital resulted in loss of Rs. 27 lakhs due to heavy rains. (Para 44.14).

(j) Defective indenting procedure led to overstocking of linen worth Rs. 48,972 and Rs. 2.18 lakhs respectively in Railway Hospital,, Bhusaval (Central Railway) and J. R. Hospital (Western Railway). (Para 44.15).

(k) Recovery of diet charges amounting to Rs. 35.68 lakhs pertaining to various periods since May 1980 remained outstanding on Eastern, Western, South Central, Northern and Central Railways. Besides, there were delays in revision of diet charges on Northern and Southern Railways. (Para 44.16).

(l) Family welfare activities on Northern, Eastern, Central and Western Railways lagged behind the targets set for them. Reimbursement of expenditure of Rs. 18.49 lakhs on Central Railway and Rs. 9.16 lakhs on Northern Railway had not been claimed from the Ministry of Health and Family Welfare. (Para 44.17).

(m) Expenditure of Rs. 12 lakhs due to operation of posts in excess of the sanctioned strength of the Divisional Hospital, Lucknow since 1979 remained (December 1985) unregularised. (Para 44.18).

45. Central, South Central and Western Railways—Working of Public Relations Organisation

The Public Relations Organisations (PRO) of the Railways are entrusted mainly with the task of projecting the image of the Railways and commercial exploitation of their publicity potential. A review in audit of certain selected aspects of the working of the PROs of Central, South Central and Western Railways revealed that there had been inordinate delay in revision of rates for advertisement charges resulting in loss of revenue, fall in the number of advertisement contracts on the Central Railway besides avoidable expenditure on an inauguration function as mentioned in the succeeding paragraphs.

Delay in revision of rates for advertisements

The schedule of rates for advertisements through the media of posters, plates, cinema house poster boards, etc. are fixed by the Railway Board to facilitate execution of bulk contracts for more than one Railway and ensure uniformity of rates. The advertisement rates for other media like hoardings, show cases, neon signs, etc., are fixed by the Railways themselves depending upon the rates for similar advertisements charged by the Municipalities, Corporations, Public transport undertakings, etc. As per extant orders of the Railway Board the advertisement rates for different media are to be revised once in five years.

In May 1973 the Railway Board had contemplated upward revision of the rates fixed by them in June 1970 for display of posters, etc. However, such a revision was not done till the Chief Public Relations Officers|Public Relations Officers in their conference of January 1978 recommended 25 per cent *ad hoc* increase of the June 1970 rates in keeping with the all round increase in costs. The conference also recommended that the rates for other media of advertisements should straightaway be revised by the Zonal Railways and brought into force from 1978-79. However, as late as September 1981, the Railway Board decided almost cent per cent upward revision of the rates for display of posters, etc., taking into account the rise in wholesale price indices since 1970. The rate revision due in 1975 was thus delayed by about six years. While advising the revised rates effective from 1st November 1981 instead of retrospectively, the Railway Board directed (September 1981) the Railways to revise the rates for other media of advertisements also. Before this belated directive of the Railway Board, the Western Railway Administration had revised the rates for hoardings in April 1981. The South Central Railway Administration, however, carried out the rate revisions for different media of advertisements in January 1984. On Central Railway, the rates for advertisements in EMU Coaches and illuminated signs and show cases were reviewed and revised between December 1982 and September 1985. The delays ranging between four and seven years in revision of the rates for various

media of commercial advertisements resulted in loss of earnings which, even at the liberal rate of 25 per cent increase over the then existing rates for bulk contract items and the actual percentage increase envisaged in the revised rates for other items, would work out to Rs. 73.95 lakhs—for South Central (Rs. 5.43 lakhs), Western (Rs. 58.63 lakhs) and Central (Rs. 9.89 lakhs) Railways, during the period 1978-79 to 1983-84.

Declining trend in advertisement contracts

The number of advertisement contracts entered into by Central Railway progressively came down from 2000 in 1980-81 to 1465 in 1983-84, except for a marginal increase to 1534 in 1984-85. On South Central Railway there was a marginal decline in the number of contracts; it came down from 1146 in 1979-80 to 1128 in 1983-84 and picked up to 1138 in 1984-85. Fall in the number of contracts involved corresponding loss of revenue, which is not susceptible of precise qualification.

The Central Railway Administration attributed (October 1985) the drop in the number of contracts to upward revision of rates from November 1981. It is, however, significant to mention that after similar rate revisions on Western Railways the number of contracts increased from 2457 in 1981-82 to 2552 in 1983-84 and 2597 in 1984-85 suggesting thereby that the above reason is not tenable and with proper canvassing and contacts by the Public Relations Officials the level of advertisement contracts could have been maintained.

Outstanding rental charges

The display of audio-visual advertisements through a closed circuit colour television system was introduced at Secunderabad station of South Central Railway early in 1984. The work was entrusted to an advertising agency for one year from 25th February 1984 on payment of rental charges at Rs. 4 thousand per month besides electricity consumption charges, etc. The contract expired in February 1985 but the advertising agency was allowed to continue. The recovery of rental charges of Rs. 24 thousand (from 26th August 1985 to 25th February 1986), ground rent of Rs. 7,500 (from 26th February 1985 to 25th February 1986) and electricity charges of Rs. 2,827 aggregating to Rs. 34,327 were awaiting recovery (January 1986).

Unnecessary expenditure on an inauguration function

For inauguration of the Bombay-Gandhidham Express and Bombay-Indore Express trains introduced with effect from 2nd October 1984 and 1st May 1985 respectively the Western Railway Administration conducted a Press party tour providing rail travel, retiring room accommodation and catering arrangements (all free of charge). Besides, expenditure of Rs. 22,336 was incurred on printing of brochures and invitation cards. As these trains were introduced on public demand the incurrence of the above expenditure was hardly justified.

It is significant to mention that the General Managers of the Railways have been authorised to incur expenditure on inaugural functions upto Rs. 2,500 on each occasion except in case of important functions to be inaugurated by the President/Prime Minister and Minister for Railways in respect of which the limit has been fixed at Rs. 5,000 in each case.

The Railway Administration stated (December 1985) that while it was necessary to keep the public informed of the facilities/amenities made available to them, the main purpose of taking the Press party to inauguration was to project the image of the Railway through their write up.

These purposes could, however, have been well served by adequate coverage through the Press and other media like All India Radio and Doordarshan, besides the Railways' own publications (e.g., News letter, handouts, etc.).

46. Southern Railway—Avoidable expenditure on maintenance of crew rest vans

In order to provide rest to the second set of crew travelling with slow moving goods trains, train crew rest vans used to be attached to such goods trains. There were 36 such train crew rest vans on the metre gauge system of Southern Railway at the end of December 1984. These had been turned out by the Railway workshops at Mysore and Jodhpur in 1962-63, 1963-64 and 1965 except one which was manufactured in 1956, at a cost of Rs. 14.69 lakhs.

The utilisation of these vans after 1980 was seen to be very poor for the following reasons :—

(i) due to progressive dieselisation/electrification of the services, slow moving goods trains were no longer run on most of the metre gauge sections;

(ii) even in the sections in which slow moving goods trains were run, the crew preferred to travel by faster passenger trains; and

(iii) provision of additional running rooms in different locations.

Consequently, 28 crew rest vans remained idle at Tiruchchirappalli Junction station for over 4 years thus blocking one line completely. The remaining vans

were lying stabled at various stations *viz.*, Madurai, Villupuram, Mysore, and Manamadurai. Some of the useful parts like wheelsets, draw bars etc., had been cannibalised in the sick line at Tiruchchirappalli itself for use in other stock. Besides, seats, side panels, etc., had been pilferred.

The Chief Workshop Engineer suggested in November 1980 that these could be converted into goods brake vans. Only in November 1984, the Operating department agreed to the conversion of 30 crew rest vans into brake vans to meet the acute shortage. The Administration, however, stated in July 1985 that it would be uneconomical and the vans would have to be condemned.

Though these coaches had not been used, they were taken up for regular POH in workshops and an expenditure of Rs. 3.28 lakhs approximately had been incurred during the period from January 1981 to January 1985 unnecessarily.

The Administration stated (December 1985) that POH was undertaken as and when due though the stock had not been put to use. This expenditure could, however, have been avoided had the Administration taken into account the fact that the suggestion for conversion had been under consideration separately.

47. **South Eastern Railway—Payment of penalty charges due to delay in remittance of road tax**

Under the provisions of West Bengal Motor Vehicles Tax Act, 1979, motor vehicles belonging to the Railways are not exempted from the payment of road tax. In the event of delay in payment of road tax penalty is leviable at prescribed rates depending upon the period of default from within 30 days to over 60 days allowing a grace period of 15 days after expiry of the due date. The Regional Transport Officer is empowered to waive the tax for the period for which a vehicle is immobilised, provided the relevant records are produced to him.

For tractors and trailors based at Shalimar for operating the Railway's container service, road tax had not been paid for the period from September 1981 to April 1985 due to the ignorance of rules on the part of the concerned officials. The Railway Administration had to pay penalty charges amounting to Rs. 1.36 lakhs for belated payments of tax. Besides, road tax amounting to Rs. 12 thousand had been paid for one vehicle lying out of order from 1st November 1976 to 31st October 1981 but the Railway Administration have not so far (January 1986) claimed remission.

The Railway Administration is yet (January 1986) to fix staff responsibility for the avoidable expenditure of Rs. 1.48 lakhs.

The draft paragraph was issued to the Railway Administration on 9th August 1985; its reply is still awaited (January 1986).

48. **Recoveries at the instance of Audit**

During the year 1984-85, Rs. 3.54 crores were recovered or agreed to be recovered at the instance of Audit. Further, an amount of Rs. 0.07 crore was also recovered as a result of review made by the Railway Administrations of these and similar cases.

P. C. Asthana

New Delhi,
Dated the 29th April 1986
9 Vaisakha

(P. C. ASTHANA)
Additional Deputy Comptroller and
Auditor General of India
(Railways)

Countersigned

T. N. Chaturvedi

New Delhi,
Dated the 29th April 1986
9 Vaisakha 1908

(T. N. CHATURVEDI)
Comptroller and Auditor General of India

ANNEXURE I

(*cf.* Para I)

Summary of the salient indicators of the financial and operating performance of the Railways for each of the years 1980-81 *to* 1984-85

1	2	1980-81 3	1981-82 4	1982-83 5	1983-84 6	1984-85 7
1.	Capital-at-charge at the end of the year (Rupees in crores)@	6096.35	6698.05	7251.09	7567.80	8285.65
2.	Total Block assets (Rupees in crores)@	7448.39	8164.30	8882.2	9401.4	10377.15
3.	Revenue Receipts (Rupees in crores)	2703.48	3627.76	4483.32	5089.06	5469.09
4.	Revenue Expenditure (of which amount appropriated to Funds is indicated in brackets) (Rupees in crores)	2575.99 (315.50)	3224.70 (461.06)	3929.03 (715.89)	4710.11 (1044.26)	5198.99 (1084.09)
5.	Net Revenue (Gross surplus before dividend) (Rupees in crores)	127.49 (58.87)*	403.06 (325.31)*	554.29 (457.64)*	378.95 (285.95)	270.10 (169.67)
6.	Revenue surplus after providing for due dividend (Rupees in crores)	(—)197.87	(+)46.59	(+)118.31	(—)44.75	(—)195.59
7.	(*a*) Return on Capital-at-charge (Percentage of item 5 over item 1)	2.09 (0.96)*	6.01 (4.95)*	7.64 (6.31)*	5.01 (3.78)*	3.26 (2.05)*
	(*b*) Return on Block assets (percentage of item 5 over item 2)	1.71 (0.79)*	4.93 (4.06)*	6.08 (5.02)*	3.91 (2.95)*	2.52 (1.58)*
8.	Total indebtedness for want of adequate revenue surplus of the year (Rs. in crores) :					
	(*a*) On account of shortfall in dividend liability	379.29	376.77	304.82	349.57	545.16
	(*b*) On account of deferred dividend payable in respect of new lines which have completed moratorium	39.20	47.73	58.61	60.05	63.49
	(*c*) On account of shortfall in Development Fund	224.16	224.16	224.16	273.75	336.36
	TOTAL (a to c)	642.65	648.66	587.59	683.37	945.01
9.	Revenue earning Goods traffic in million tonnes (Total traffic in brackets)	195.9 (220.0)	221.20 (245.80)	228.76 (256.0)	230.12 (258.0)	236.44 (264.17)
10.	Passenger km. in millions	208558	220787	226930	222935	226582
11.	(*a*) Earnings from Goods Traffic (Rs. in crores)	1617.52	2357.14	2972.12	3353.50	3602.42
	(*b*) Earnings from Passenger traffic (Rs. in crores)	827.47	988.56	1161.65	1353.55	1458.82
12.	Fuel consumption by locos (per 1000 GT km) :					
	(*a*) Passenger Service : (*i*) Coal (kg)	77.6	79.0	79.2	77.3	82.3
	(*ii*) Diesel (litre)	5.3	5.3	5.3	5.40	5.25
	(*b*) Goods Service : (*i*) Coal (Kg.)	88.9	92.4	95.0	98.5	97.0
	(*ii*) Diesel (Litre)	3.6	3.7	3.6	3.6	3.6
13.	No. of staff (in thousands)	1572	1575	1584	1593	1603
14.	Average annual wage per employee (Rupees)	8435	9263	10846	12390	14797
15.	Operating ratio (per cent)	96.1	89.40	88.34	93.5	96.3

*Excluding subsidy.

@Excludes expenditure on Metropolitan Transport Projects.

S/14 C&AG/85—11

ANNEXURE II

(*cf.* Para 1.1)

Statement showing details of subsidy under specific heads received from General Revenues on account of various concessions in the payment of dividend during the year 1984-85

(In units of Rupees)

		Commercial Rs.	Strategic Rs.
1.	Capital cost of strategic lines		6,89,13,225
2.	Capital cost of Ore Lines	1,06,70,098	
3.	Capital-at-charge of non-strategic portion of N.F. Railway	15,68,47,195	
4.	Capital cost of unremunerative branch lines	5,43,51,975	
5.	Capital cost of New Lines constructed on or after 1-4-55 on other than financial consideration	9,30,54,194	
6.	Capital cost of New Lines other than those mentioned in (5) above	21,34,16,654	
7.	Outlay on Works-in-Progress for a period of three years	39,74,83,529	12,82,118
8.	Capital cost of Ferries	22,69,481	
9.	Capital cost of Welfare buildings	57,24,684	
10.	Arrear adjustment	3,16,465	
	TOTAL	93,41,34,275	7,01,95,343
	GRAND TOTAL (Commercial & Strategic)	100,43,29,618	

ANNEXURE III

(*cf.* Para 6.2)

Statement showing savings in Grants

(Rupees in crores)

Grant No.	Name of Grant	Original Grant	Supplementary Grant	Final Grant	Actual	Saving	Percentage
1	2	3	4	5	6	7	8
1.	Railway Board	4.66	0.27	4.93	4.82	0.11	2.23
2.	Miscellaneous Expenditure (General)	32.03	..	32.03	28.09	3.94	12.30
3.	General Superintendence and Services	230.57	12.33	242.90	233.63	9.27	3.81
4.	Repairs and Maintenance of permanent Way and Works	467.10	40.52	507.62	504.75	2.87	0.57
5.	Repairs and Maintenance of Motive Power	381.97	..	381.97	374.87	7.10	1.86
6.	Repairs and Maintenance of Carriage and Wagons	555.41	..	555.41	527.05	28.36	5.11
7.	Repairs and Maintenance of Plant and Equipment	246.16	17.12	263.28	256.22	7.06	2.68
8.	Operating Expenses—Rolling Stock and Equipment	428.21	10.42	438.63	426.54	12.09	2.76
9.	Operating Expenses—Traffic	471.32	20.52	491.84	490.01	1.83	0.37
10.	Operating Expenses—Fuel	939.60	45.42	985.02	977.98	7.04	0.07
11.	Staff Welfare and Amenities	164.15	4.20	168.35	166.66	1.69	1.01
12.	Miscellaneous Working Expenses	233.99	18.19	252.18	239.32	12.86	5.1
14.	Appropriation to Funds	1084.63	..	1084.63	1084.09	0.54	0.04
15.	Dividend to General Revenues, Repayment of loans taken from General Revenues and Amortisation of over capitalisation	438.93	..	438.93	291.32	147.61	33.63

ANNEXURE IV

[*cf.* Para 6.2]

Details of Grant No. 16 — *Assets — Acquisition, Construction and Replacement*

(Rupees in thousands)

		Budget Estimate 1984-85	Supplementary Grant	Final Grant	Actual Expenditure	Excess (+) Saving (—)
1		2	3	4	5	6
Capital	Voted	28,06,86,45	80,00	28,07,66,45	27,47,53,30	(—)60,13,15
	Charged	1,28,50	19,80	1,48,30	1,20,59	(—)27,71
D.R.F.	Voted	8,72,86,02	1,00	8,72,87,02	8,97,99,46	(+)25,12,44
	Charged	20,00	(—)19,00	1,00	..	1,00
D.F.	Voted	39,99,00	..	39,99,00	37,79,01	(—)2,19,99
	Charged	1,00	(—)80	20	48	(+)28
A.C.S.P.F.	Voted	25,19,53	10,00	25,29,53	23,62,48	(—)1,67,05
O.L.W.R.	Voted	14,99,50	..	14,99,50	11,41,49	(—)3,58,01
	Charged	50	73	1,23	1,23	..
TOTAL	Voted	37,53,90,50	91,00	37,54,81,50	37,18,35,74	(—)36,45,76
	Charged	1,50,00	73	1,50,73	1,22,20	(—)28,43

ANNEXURE V

(*cf.* Para 6.2)

Statement showing excess over Grants

(Rupees in crores)

Number and name of the Grant	Original Grant	Supplementary Grant	Final Grant	Actuals	Excess	Percentage
1	2	3	4	5	6	7
13. Provident Fund, Pension and other Retirement Benefits .	233.62	35.31	268.93	275.20	6.27	2.33
	233.62	35.31	268.93	275.20	6.27	

ANNEXURE VI

(*cf.* Para 8.13)

Dimensions and other features of BOXN wagon compared with the existing BOXC type of bogie open wagon

		BOXC	BOXN	BOXN (Proposed in 1974)
1.	Length over buffers/coupler faces	13730 mm	10713 mm	
2.	Body height (inside)	1880 mm	1950 mm	2460 mm
3.	Body width (inside)	2852 mm	2950 mm	2852 mm
4.	Number of doors for unloading	5 on each side	3 on each side	
5.	Approximate tare	25.08 tonnes	22.47 tonnes	24.28 tonnes
6.	Pay load	56.28 tonnes	58.81 tonnes	57.0 tonnes
7.	Number of wagons in existing loop of 686m (585m effective length)	43	55	
8.	Gross load per train	3495 tonnes	4470.4 tonnes	4470.4 tonnes
9.	Approximate pay load per train	2420 tonnes	3235 tonnes	
10.	Axle load	20.32 tonnes	20.32 tonnes	
11.	Track loading density	5.93 tonne/metre	7.59 tonne/metre	
12.	Type of bogie	UIC fabricated type	Cast steel	
13.	Type of bearing	Cylindrical bearing	Cartridge tapered roller bearing	
14.	Type of coupler	Standard non-transition Centre buffer coupler	Enhanced capacity non-transition Centre buffer coupler	
15.	Type of brake	Vacuum brake	Air brake	

ANNEXURE VII

(*cf.* Para 9.2)

Year-wise programme for electrification during the period from 1980-81 *to* 1989-90 *to achieve* 1000 *RKms. per annum in VII Plan*

Year	Total RKm. in progress	Section where work to be commenced	Route Km.	Section to be energised	Route Km.
1	2	3	4	5	6
1980-81	1297	1. Mathura-Jhansi	276	1. Gummudipundi-Gudur	83
		2. Mathura-Gangapur city	153	2. Gudur-Chirala	204
		3. Colliery lines in Chandrapura Complex	134	3. Kirandul-Jagdalpur	151
			563		438
1981-82	1422	1. Sitarampur-Mughalsarai	557	1. Jagdalpur-Waltair	321
		2. Vijayawada-Balharshah	454	2. Trivellore-Arakkonam	28
		3. Jhansi-Bina-Bhopal	381		
		4. Gangapur city-Kota-Ratlam	437		
		5. Bhusaval-Nagpur	393		
		6. Arakkonam-Jolarpettai-Erode	324		
		7. Arakkonam-Renigunta-Tirupati-Gudur.	160		
			2706		349
1982-83	3779	1. Mughalsarai-Lucknow	319	1. Delhi-Mathura	170
		2. Durg-Nagpur	265		
			584		170
1983-84	4193	1. Varanasi-Sultanpur-Lucknow	291	1. Vadodara-Ratlam	340
		2. Bina-Katni	263	2. Mathura-Jhansi	276
				3. Mathura-Gangapur city	153
				4. Colliery lines in Chandrapura	134
			554		903
1984-85	3844	1. Balharshah-Wardha	133	1. Sitarampur-Danapur	354
		2. Bhusaval-Itarsi	301	2. Vijayawada-Kazipet	220
		3. Jolarpettai-Bangalore	144	3. Jhansi-Bina	151
				4. Arakkonam-Renigunta-Gudur-Tirupati.	160
			578		885
		Total during VI Plan	4985		2745
1985-86	3537	1. Nagda-Bhopal	239	1. Kazipet-Balharshah	234
		2. Vijayawada-Waltair	350	2. Bina-Bhopal	132
		3. Katni-Anuppur	327	3. Ratlam-Kota	266
				4. Bhusaval-Nagpur	393
				5. Arakkonam-Jolarpettai-Erode	144
			916		1169

1	2	3	4	4	6
1986-87 . .	3284	1. Tundla-Agra-Bayana	106	1. Kota-Gangapur city	171
		2. Delhi-Ambala	198	2. Durg-Nagpur	265
		3. Sonnagar-Barkakana-Gomia	344	3. Balharshah-Wardha	133
		4. Nagpur-Itarsi	298	4. Jolarpettai-Erode	180
				5. Bhopal-Itarsi	92
				6. Danapur-Mughalsarai	203
			946		1044
1987-88 . .	3186	1. Garwa Road—Chopan-Chunar	245	1. Mughalsarai-Lucknow	319
		2. Moradabad-Ambala-Jullundur City.	448	2. Varanasi-Sultanpur-Lucknow	291
		3. Kharagpur-Khurda Road	340	3. Bina-Katni	263
				4. Jolarpettai-Bangalore	144
			1033		1017
1988-89 . .	3202	1. Barsuan-Bimlagarh-Bondamunda-Hatia.	232	1. Nagda-Bhopal	239
		2. Lucknow-Kanpur	72	2. Katni-Anuppur-Bilaspur	327
		3. Lucknow-Moradabad	326	3. Bhusaval-Itarsi	301
		4. Renigunta-Guntakal-Hospet	421		
			1051		867
1989-90 . .	3386	1. Hatia-Muri	72	1. Tundla-Agra-Bayana	106
		2. Guntakal-Sholapur	378	2. Delhi-Ambala	198
		3. Sholapur-Pune	264	3. Nagpur-Itarsi	298
		4. Khurda Road-Waltair	421	4. Vijayawada-Waltair	350
			1135		952
		Total during VII Plan	5081		5049

ABSTRACT TABLE

	VI Plan (1980—85)	VII Plan (1985—90)
Work in progress at the beginning of plan period	1297	3537
Work commenced during the plan period	4985	5081
Work completed in the plan period	2745	5049
Work thrown forward at the end of the plan period	3537	3569
Investment required during the plan period (Rs. crore)	450	750

ANNEXURE VIII

(*Cf.* Para 9.4)

Details of sections energised during 1980-81 *to* 1984-85

Year	Sections	Railway	RKms. energised
1	2	3	4
1980-81	1. Gummudipundi-Gudur	Southern	83
	2. Gudur-Chirala	South Central	204
	3. Kirandul-Jagdalpur	South Eastern	151
		TOTAL	438
1981-82	1. Jagdalpur-Koraput	South Eastern	106
	2. Ahmedabad-Sabarmati	Western	8
		TOTAL	114
1982-83	1. Trivellore-Arakkonam	Southern	28
	2. Arakkonam-Chiteri	Southern	9
	3. Waltair-Koraput	South Eastern	215
	4. Okhla-Shakurbasti (Ring Railway)	Northern	35
	5. Tilak Bridge—Ballabhgarh (Delhi-Mathura).	Northern	33
	6. Diva-Vasai Road	Western	42
		TOTAL	362
1983-84	1. Ballabhgarh-Mathura (Bad)	Central	117
	2. Arakkonam-Tiruttani	Southern	13
	3. Chitteri-Walajah Road	Southern	27
	4. Gudur-Venkatgiri	Southern	38
	5. Anand-Godhra (excl.)	Western	78
		TOTAL	273
1984-85	1. Bad-Dhaulpur	Central	91
	2. Tiruttani-Renigunta	Southern	53
	3. Walajah Road-Katpadi	Southern	26
	4. Venkatgiri-Tirupati	South Central	55
	5. Vadodara-Godhra	Western	74
	6. Santaragachi-Bankrana-Yabaj	South Eastern	22
	7. Kharagpur-Midnapore	South Eastern	14
		TOTAL	335
	Total energisation during VIth Plan		1522 RKms.

ANNEXURE IX

(*Cf.* Para 24)

Details of items where the anticipated excess was more than 200 per cent

(*In lakhs of Rupees*)

Sr. No.	Description	Sanctioned Estimate	Revised Estimate	Excess	Percentage	Remarks
1	2	3	4	5	6	7
1.	Preliminary Expenditure . .	7.08	22.33	15.25	215.5	The cost of preliminary surveys for other works now included (line capacity work).
2.	Walling	14.79	80.92	66.13	447	Increase in length of retaining wall.
3.	P. Way	93.70	472.56	378.86	404.35	Increase in cost, provision of ballastless track.
4.	Siding (P. Way)	26.44	121.01	94.57	357.63	Increase in cost of P. Way material.
5.	Points & Crossings (P. Way) .	14.12	118.40	104.28	738.47	Increase in number of Turn outs, cost of points and crossings and increase in labour charges.
6.	Residential Quarters . . .	15.03	68.19	53.16	353.70	Increase in cost, deeper founds etc.
7.	Feeder lines	6.12	26.39	20.27	331.21	Increase in cost of material.
8.	Supervisory Remote Control Equipment.	11.07	33.35	22.28	201.26	Increase in cost and reprovision of this item which was once deleted.
9.	General Electrification and Air-conditioning.	1.57	13.01	11.43	725.89	Change over to Central Air-conditioning.

ANNEXURE X

(*Cf.* Para 44.17)

Statement showing the performance of family welfare activities by zonal Railways from 1982-83 *to* 1984-85

Railway	1982-83			1983-84			1984-85		
	Target fixed	Achieved	Percentage	Target fixed	Achieved	Percentage	Target fixed	Achieved	Percentage
				STERILISATION					
Northern	6070	3355	55.27	7733	3053	39.48	7749	2483	32.04
Western	5423	2334	43.04	6934	1920	27.69	6900	1519	22.01
Eastern	6343	3915	61.72	8013	3011	37.58	7914	2419	30.57
Central	5581	2855	51.16	7020	2762	39.34	7039	2392	33.98
				I U D					
Northern	1377	1319	95.80	2082	1565	75.17	2503	1738	69.44
Western	1230	257	20.89	1867	345	18.48	2229	501	22.48
Eastern	1439	576	40.03	2157	501	23.23	2557	502	19.63
Central	1266	513	40.52	1890	612	32.38	2274	569	25.02
				CONTRACEPTIVES					
Northern	26278	57159	217.52	30144	38679	128.02	44510	48130	108.13
Western	23477	15678	66.78	27028	11517	42.61	39636	20849	52.60
Eastern	27462	30156	109.81	31235	28481	91.18	45462	29365	64.59
Central	24160	16806	69.56	27366	15567	56.88	40436	23309	57.64

MGIPRRND—S/14 CAG/85—TSS II—7-4-86—2100