ADVANCE REPORT

OF

THE COMPTROLLER AND AUDITOR GENERAL OF INDIA

FOR

THE YEAR 1983-84

UNION GOVERNMENT (RAILWAYS)

ERRATA

Page No.	Column No.	Line No.	*For*	*Read*
1	1	9 from bottom	consumption, indicating a small decline in railways	only. The rate of growth of POL traffic on railways
3	1	27 from bottom	FG	BG
5	1	5	The fact	In fact
5	2	16 & 15 from bottom	movement-ing	movement resulting
7	1	6	liquified	liquefied
8	2	2	Delete (*) asterisk appearing	against Manmad
8	2	16	supply of	supply by
9	2	6 from bottom	comprises	comprise
12	2	10 from bottom	resultd	resulted
13	1	17 from bottom	wagon	wagons
13	1	13 from bottom	decided to	decided in
17	1	27	330	243
17	1	30	150	50
19	1	21 from bottom	54	34
19	2	4 from bottom	stretures	structures
19	2	3 from bottom	strutcures	structures
20	1	12	Annexure I	Annexure VI
21	1	11 from bottom	reason	reasons
21	2	25	Rs. 65.33 lakhs	Rs. 63.33 lakhs
22	1	13	Coalfields	Coalfield
22	2	18	Outstanding	outstandings
22	2	18 from bottom	have	had
24	1	24	overheads	overhauls
26	1	4 (Table Col. 2)	uf	of
26	1	6 from bottom	retainig	retaining
26	1	6 from bottom	walls'	walls/
29	1	4	350 per cent	330 per cent
29	2	16 from bottom	manily	mainly
29	2	10 from bottom	drawing	drawing,
30	1	11 from bottom	week	weak
32	2	9	expe-diture	expenditure
32	2	7	Cenral	Central
34	1	17 from bottom	far which	for which
37	1	25 from bottom	(Railways for 1972-73)	for 1972-73—Union Government (Railways)
37	2	11	(Railways) for 1982-83	—for 1982-83—Union Government (Railways)
38	1	27 from bottom	33¼	33⅓
39	1	8	October 1973—January 1974)	(October 1973—January 1974)
39	1	9 from bottom	ihe	the
40	1	17 from bottom	(CBOL)	(COBOL)
40	2	13 from bottom	Nos	number
42	1	Table item 3	795.95	796.95
43	2	8	firms's	firm's
43	2	25	per cent of payment	per cent payment
44	2	4 from bottom	4.3 M.G.	4.3 lakh M.G.
45	1	12	demands	demand

S/20 CAG/84

Page No.	Column No.	Line No.	*For*	*Read*
47	2	13	erronecus	erroneous
47	2	24	railaways	railways
49	2	18 from bottom	pice	price
51	1	19	progress machining	progress of machining
54	1	3rd from bottom	sent	seen
63	1	30	SSR	BSR
72	2	11	Balhalshah	Balharshah
73	2	29	Rs. 5.0*	Rs. 5.01*
74	1	3 from bottom	oil has	oil which had
76	1	4	Jalagaon	Jalgaon
78	1	7 from bottom	was	were
78	2	12	available	avoidable
81	2	3 from bottom	para 10 the	para 10 of the
81	2	16	concerned	concerted
82	1	2	shift assessed	shift as assessed
82	2	25 from bottom	Southr Eastern	South Eastern
82	2	9 from bottom	was	is
83	1	11	flash but	flash butt
83	1	29 from bottom	Baudel	Bandel
83	1	6 from bottom	measure up	measure up to
84	2	7 & 8	South Eastern	Eastern
86	1	22 from bottom	runnning	running
87	1	2nd table 2nd column	wurk	work
88	2	21	recommened	recommended
88	2	29	Drawat	Drawal
88	2	34	Ticked	Ticket
94	2	13 from bottom	conversion	conversion)
104		Col. 3 of Table	Balance due	Balance due Rs.
105	Annexure VIII	S. No. 3	premises	premises, Panipat
107	Annexure X		Insert the word 'crores' after the figures :	Rs. 1.16, Rs. 1.32, and Rs. 1.46 in column 1 of table
109	Annexure XII	Heading above columns 5 & 6	Silica & Sand	Silica sand
109	,,	In (7A)	Cost of consumption	Cost of excess consumption
110	Annexure XIII	under Col. Name of item	Air Duck Assembly	Air Duct Assembly
110	,,	,,	Exhausted Bend Assembly	Exhaust Bend Assembly
110	,,	under Col. (C) of Revised time	085.00	058.00
110	,,	under Name of item	Arm Sheeve	Arm Sleeve

ADVANCE REPORT

OF

THE COMPTROLLER AND AUDITOR GENERAL OF INDIA

FOR

THE YEAR 1983-84

UNION GOVERNMENT (RAILWAYS)

TABLE OF CONTENTS

PREFATORY REMARKS

This Report has been prepared pending submission of the Appropriation Accounts of the Union Government (Railways) for the year 1983-84. The Appropriation Accounts of the Union Government (Railways) for the year 1983-84 are under preparation/finalisation by the Ministry of Railways (Railway Board). Since their submission is likely to take a little more time, this Advance Report is being submitted.

2. This Report relates mainly to points arising from test audit of the financial transactions of the Railways and includes, among others, Reviews on procurement and utilisation of tank wagons, construction activities on Railways, welding of rail joints, and Chittaranjan Locomotive Works, and comments on purchases, stores, execution of works, rating and routing of traffic, etc.

CHAPTER I

PROCUREMENT AND UTILISATION OF TANK WAGONS

1. Procurement and utilisation of tank wagons

Introduction

1.1.1 Petroleum products constitute an important high rated freight traffic carried by the Indian Railways and are an essential input for industry and agriculture in the country. These account for 7.6 per cent of total traffic in tonnes and 12.5 per cent of revenue from goods. Unlike general goods, the transport of petroleum products (POL) requires use of special type of tank wagons.

The total fleet of such tank wagons (including those for carriage of vegetable oils, molasses, etc.) owned by Railways at the end of 1983-84 was 30,666 (BG) and 4,901 (MG).

1.1.2 The transport of POL products also involves investment in exclusive terminal facilities which can not be utilised for other commodities. Optimisation of the investment, and intensive utilisation of tank wagon fleet and the facilities created become essential to ensure productive employment of capital. The procurement of tank wagons, for the Sixth Plan period was not, however, done by the Ministry of Railways (Railway Board) in a realistic manner and consequently a large number of tank wagons had remained surplus and idle.

1.2 *Growth of POL traffic*

1.2.1 The table below gives details of growth of petroleum products and Railways' share of traffic during the years 1977-78 to 1983-84.

(Figures in thousand tonnes)

Year	Production	Imports	Consumption*/Sales	Percentage increase	Transported by				
					Rail @	Percentage increase	Pipe line	Coastal liners	Road
1	2	3	4	5	6	7	8	9	10
1977-78	23,219	2,879	25,539	..	13,062	..	..	2,300	..
1978-79	24,193	3,878	28,241	10.6	14,302	9.5	..	2,800	..
1979-80	25,794	4,724	29,833	5.8	14,266	0.3	4,501	2,850	..
1980-81	24,123	7,289	30,896	8.4	14,954	4.8	4,650	2,654	8,216
1981-82	28,182	4,884	32,523	5.3	16,955	13.4	4,906	3,171	7,250
1982-83	31,067	5,028	34,657	6.6	17,342	2.3	5,030	2,789	8,780
1983-84	32,886	4,052	35,601	2.7	17,949	3.3	6,730	3,630	6,436

*Excludes refinery fuel.

@Revenue earning traffic only.

1.2.2 It will be observed that while the consumption of petroleum products increased by 39.4 per cent during the period 1977-78 to 1983-84, the POL traffic carried by Railways increased by 37.1 per cent consumption, indicating a small decline in railways was 6.2 per cent simple (5.4 per cent compound) against the rate of 6.6 per cent (5.7 per cent) in consumption, indicating a small decline in railway' share of traffic. The Railways' share of traffic had increased from 51.1 per cent in 1977-78 to 52.1 per cent in 1981-82, but declined to 50.3 per cent in 1983-84. A statement showing the share of Railway traffic product-wise is given in Annexure—I.

1.2.3 The growth of traffic on Railways has not been steady and corresponding to the growth in consumption. For instance in 1979-80, the POL traffic was stagnant while the consumption increased by 5.8 per cent. Similarly in 1982-83 the traffic increased by 2.3 per cent only against 6.6 per cent increase in consumption.

1.2.4 The transport of POL products through pipelines was below the rated capacity (except Koyali-Ahmedabad) as indicated below and to that extent the traffic carried by Railways was higher.

Pipe line	Capacity (million tonnes per annum)	throughput (million tonnes)				
		1979-80	1980-81	1981-82	1982-83	1983-84
1. Koyali—Ahmedabad	0.70	0.90	0.93	0.94	0.86	1.11
2. Gauhati-Siliguri	0.56 0.82 (from 1982-83)	0.28	0.26	0.37	0.49	0.63
3. Haldia-Barauni-Mourigram-Rajbandh	2.65	1.86	2.53	1.89	1.50	1.50
4. Barauni-Kanpur	1.8	1.46	0.93	1.80	1.40	1.61
5. Mathura-Delhi-Ambala -Jalandhar	3.7 2.2 1.35	..	..	..	0.79	1 76
		4.50	4.65	5.0	5.04	6.61

1.2.5 In addition, the traffic which was normally required to be carried by rail (excluding the road fed traffic) between rail heads but was carried by road (being short lead traffic) was about 2.5 million tonnes in 1979-80, 1.75 million tonnes in 1980-81 and 1.5 million tonnes in 1981-82 and 1.8 million tonnes in 1983-84.

1.3. *Transport capacity*

1.3.1 As mentioned in the earlier paragraph (para 1.2.2) the POL traffic had increased at an average rate of 6.2 per cent per year. However, the holding of tank wagons had increased at a much faster rate as indicated below :

Year	Broad gauge		Metre gauge	
	Traffic originating* (thousand tonnes)	POL tank wagon holdings	Traffic originating* (thousand tonnes)	POL tank wagon holdings
1978-79	11,871	19,951	2,829	4,573
1979-80	12,027	21,104	2,674	4,622
1980-81	12,667	23,047	2,706	4,747
1981-82	14,441	25,999	2,750	4,629
1982-83	15,316	28,101	2,741	4,376
1983-84	16,122	28,702	2,681	4,162

*Includes diesel for railways.

(Note :—The traffic shown above includes traffic moving by conventional wagons. Such traffic is approximately 10 per cent of total traffic).

1.3.2 It will be seen that between 1978-79 and 1983-84, on the broadgauge (which carries about 85 per cent of POL traffic) the tank wagon holdings had increased by 44 per cent against 35 per cent increase in traffic. The capacity created by way of addition to the tank wagons fleet in successive years was far ahead of the materialisation of traffic. Besides, even in the years 1979-80 and 1980-81 the utilisation of tank wagons was not intensive. There were excessive detentions as explained later and the turn-round was 13 days. Considering that 90 per cent of the traffic was moving in closed circuit and in block rakes, the turn-round days could have been reduced further by avoiding terminal detentions. Even assuming a turn-round of 11 days on BG and 13 days on MG, the transport capacity was 17 million tonnes (13.5 BG and 3.5 MG) against 14 million tonnes carried in 1978-79. The capacity at the end of 1983-84 was about 22 million tonnes (19 BG and 3 MG) against 17 million tonnes carried in 1983-84. Thus, the capacity created was far in excess of the materialisation of traffic.

1.4 *Ownership of wagons*

1.4.1 The tank wagons are special type wagons used exclusively for movement of POL traffic (except for about 1000 tank wagons used for edible oils, etc.) of oil companies. However, the ownership of tank wagons rests with Railways and the investment for procurement of tank wagons is made in Railway Sector. At present-day costs the total investment is of the order of Rs. 350 crores. However, LPG tank wagons numbering about 700 are jointly owned—the railways owning the underframes and the Oil Companies owning the bullets. The other special types of wagons like TOH wagons (with heating elements) used exclusively for transport of Residual Fuel Oil (or LSHS) are, however, owned by the Railways only.

Procurement of tank wagons during Sixth Plan

1.4.2 (i) A study of requirement of tank wagons for handling POL traffic during the period 1978—83 was done by Railway Board in September 1979. Taking into account, the average annual growth rate of around 7.7 per cent (simple) in the POL traffic, it was expected that 18 million tonnes would be required to be handled by Railways in 1982-83. The growth was primarily expected to be on BG.

(ii) The study assumed that with the commissioning of Mathura Refinery there would be a reduction in lead and the turn-round would be 11.2 days on

BG. The additional tank wagons required over the fleet on 31st March 1979, to carry the anticipated 18 million tonnes of POL traffic in 1982-83 and additional traffic in edible oils, molasses etc., requiring use of tank wagons were assessed as :

(wagons in units)

	BG	MG
(a) Additional tank wagons required for POL traffic	4,824	321
(b) For traffic anticipated in edible oils, molasses etc.	1,150	—
(c) On replacement account	116	151
Total	6,090	472

The assessment made in the study report was accepted by the Railway Board.

1.4.3 The outstanding orders on the wagon industry at the end of March 1979 was for 3,439 BG and 350 MG wagons leaving a balance of 2,651 BG and 122 MG wagons to be procured by 1981-82. No provision was, however, made in the Rolling Stock Programme of 1979-80. A provision of 640 BG and 50 MG tank wagons was made in the Rolling Stock Programme of 1980-81.

1.4.4 While considering the placement of orders against 1979-80 and 1980-81 Rolling Stock Programmes for wagons, the Railway Board decided (December 1979, May 1980 and August 1980) to place orders for 6,828 FG tank wagons *i.e.,* 4,177 wagons in excess of assessment made. Formal orders on the wagon builders were placed in October 1980 bringing the total tank wagons on order to 10,617. Of these, 8,036 wagons were received by 1981-82, and another 1,668 in 1982-83 and the balance in 1983-84 and 1984-85.

1.4.5 The decision to place orders for 6,828 wagons *i.e.* 4,177 wagons in excess of the assessment made lacked justification and resulted in idle investment of Rs. 46 crores. These are explained below :

(a) Though no provision had been made in the Rolling Stock Programmes except for 640 BG tank wagons, the Railway Board converted the provision made for other wagons to enable placing orders for tank wagons.

(b) The decision to place orders for tank wagons was taken in November 1979 (2,650 wagons), May 1980 (4,033 wagons) and again in August 1980 (170 wagons). At no stage, the Railway Board reviewed the justification for ordering such large number of tank wagons nor was the number to be ordered correlated with the conclusions of study made in September 1979.

(c) The assessment itself did not take into account correctly the effect of commissioning Mathura Refinery and Mathura-Jalandhar pipe line. Even in 1978, the Railway Board had assessed that with the commissioning of Mathura refinery and Mathura-Jalandhar pipe line about 3,866 wagons would be rendered surplus. The study, in September 1979, however merely assumed that with the commissioning of Mathura Refinery the turn-round would be reduced by one day (from the level of 12.2 days to 11.2 days). No allowance was made for the traffic to be diverted to Mathura-Jalandhar pipe line and consequent shift in pattern of traffic. On the other hand the Railway Board took the view that reduction in lead might not be realistic should there be slippage in the commissioning of the Mathura Refinery.

(d) It was also known to the Railway Board, in 1979, that Hindustan Petroleum Corporation's (HPC) proposal for pipe-line between Bombay and Pune was pending with Government. The project was cleared by Government in September 1980. With the commissioning of the project about 500 tank wagons would be rendered surplus. This aspect was also not taken into account while working out the requirement of tank wagons. The Ministry of Railways have now (August 1984) calculated that after the pipe line is commissioned (expected in December 1984), the loss of freight to railways would be around Rs. 8 crores per annum besides the facilities at Bombay becoming surplus for quite some time.

(e) The turn-round of 11 days assumed was also high as discussed in the section on Performance—c.f. para 1.5 below. A reduction of even 2 days in turn-round, by improving operational efficiency as pointed out in para 1.5.57 *et seq.* could have reduced the requirement by 4,500 tank wagons at the quantum of 16 M.T. of traffic. In other words, with the existing tank wagons additional 3.5 million tonnes of traffic could be carried.

(f) As already mentioned in para 1.3.2, the transport capacity existing in 1978-79 was about 17 million tonnes. This was understated because the actual utilisation was poor (the turn-round being high at 13 days).

(g) Even during 1978-79, the tank wagons were idling/surplus. The daily average idling was 427 BG (cost Rs. 4.7 crores at the average cost per wagon) and 155 MG wagons (cost Rs. 1.7 crores) indicating surplus capacity. The number of tank wagons idling/stabled were as under :

Year	BG	MG
1979	518	150
1980	506	101
1981	1401	169
1982	1327	196
1983	2099	424
1984	1362	411

The idling of BG and MG wagons were mostly in Western region (Central and Western Railways) Mathura Refinery was commissioned in January 1982 and the Mathura-Jalandhar pipe-line in April 1982—

December 1982. Thus the surplus arisings started even before commissioning of the refinery, indicating imbalance in assessment of requirements.

(h) The requirement of additional tank wagons for edible oils, molasses, etc., assessed at 1,150 (for the period up to 1982-83) was again *ad hoc* and was not based on past data or the growth of traffic.

1.4.6 The holding of tank wagons (BG) for vegetable oil, molasses, etc., was about 1,800 on 31st March 1979. The traffic in edible oils, molasses etc., had not shown any growth. The traffic carried was

(Thousand tonnes)

Year	Edible oil	Molasses	Alcohol	Acids
1977-78	754	235	17	16
1978-79	606	252	16	15

(Note :—The traffic carried shown above includes packed consignments moving in conventional wagons. The traffic in tank wagons was much less).

1.4.7 The daily average loading of edible oils, etc., was only 68 tank wagons. However, it was assumed that the daily average loading would go up to 110 tank wagons. Thus, there was no basis for assuming that additional 1,150 tank wagons would be required for the increase in traffic. Actually the traffic carried in 1980-81, 1981-82 and 1982-83 was much less than that in 1977-78.

1.4.8 In February 1982 the Railway Board realised that in view of large scale idling of tank wagons, the orders placed for manufacture should be curtailed. The tank wagon orders expected to be outstanding on 1st April 1982 was 2,141 (In fact manufacture against the orders placed on M/s. Jessop—800 TORXC wagons and M/s. Cimmco—400 TPRC wagons had not been commenced by these firms). Meetings with wagon builders held in February 1982 and August 1982 were of no avail. The Railway Board decided (November 1982) to continue with the manufacture of tank wagons as inputs (such as wheelsets, couplers, etc.) valued at Rs. 5 crores had already been procured and cancellation of tank wagon orders might result in surplus inventory.

1.4.9 The large scale idling of tank wagons even before the comissioning of Mathura Refinery and the belated efforts by Railway Board to cancel the order clearly show that the orders placed in October 1980 for 6,828 tank wagons were excessive. The transport capacity created would seem to be adequate to carry the anticipated traffic in 1987-88 (assuming 5 per cent growth). The premature procurement of tank wagons has resulted in idle investment of Rs. 46 crores and a burden on Railways' capital-at-charge. The expenditure on payment of dividend alone works out to Rs. 6 crores. The extra expenditure (Rs. 29.6 lakhs) in the procurement of wheelsets for these tank wagons was mentioned in paragraph 8—Import of wheelsets, in the Advance Report of Comptroller and Auditor General of India for the year 1982-83—Union Government(Railways).

1.5 *Performance and utilisation of tank wagons*

A. Performance

I. Loading vis-a-vis target

1.5.1 The programme for daily loading of tank wagons is fixed by the Oil Co-ordination Committee in the monthly supply plan meetings (in which the Railways are represented) taking into account the demand, the production schedule and the linkage etc. The slate or target for tank wagon loadings laid down in these meetings becomes the Railway's commitment to lift the traffic.

1.5.2 In order to monitor the tank wagon loadings and watch the programme and utilisation of tank wagons there is an organisation of Chief Tank Wagon Superintendent in Central Railway at Bombay controlling the movement of tank wagons in Western sector (Central, Western, Southern, South Central and Northern Railways) and a Tank Wagon Superintendent in Eastern Railway controlling the movement on Eastern sector (Eastern, North Eastern, North East Frontier and South Eastern Railways).

1.5.3 Para 1.3.1 above mentioned the total rail traffic in POL which included a portion (roughly 10 per cent) carried in conventional wagons. The tank wagon loadings, *vis-a-vis* the slate (target) are discussed in the following paragraphs.

1.5.4 The total tank wagon loadings on BG and on MG during the years 1978-79 to 1983-84 are shown in Annexure II. Though these figures show an increase from year to year, the performance with reference to slate (target of daily loadings) was poor. The following table gives the performance with reference to slate.

(Daily average number of wagons)

Year	Broad gauge				Metre gauge	
	White oil*		Black oil*			
	Slate	Loading	Slate	Loading	Slate	Loading
1980-81	1164	1108	385.5	346.8	328	274.9
1981-82	1408	1288.7	363.8	304.9	357.3	285.2
1982-83	1527.5	1369.3	384.8	356.0	352.3	267.3
1983-84	1629.1	1456.7	382.8	352.6	313.6	260.2

*White oil :—Mainly Motor spirit, Kerosene, HSD oil etc.

Black oil :—Mainly furnace oil, LSHS—(Low sulphur heavy stock).

1.5.5 It will be observed that on broad gauge there is a shortfall of about 11 per cent in white oil, 8 per cent in black oil and on the metre gauge the shortfall is 17 per cent during 1983-84. The shortfall occurred in spite of procurement of large number of tank wagons.

1.5.6 The reasons for not achieving the slate are :

(i) according to Railways, the slate was fixed high, demand does not materialise or product is not available, and

(ii) according to Ministry of Petroleum, Railway's inability to supply wagons of the right type, ineffectiveness of wagons, poor turn-round, etc.

1.5.7 The fact the slate accepted by the railways was at a lower level than the demand, as a regular feature in the Northeast region, and on several occasions in other regions. Consequently though there was traffic offering, the Railways were unable to lift it.

1.5.8 A product-wise analysis of the loadings *vis-a-vis* slate during 1983-84 showed that the shortfall of 11 per cent in white oil with reference to slate was under Motor spirit (9.5), Naphtha (18.4), Kerosene oil (6.6), Aviation fuel (13.5) and HSD oil (10.5) and in black oil under Light Diesel oil (20.6) and furnace oil (5.0) and LSHS (8.9). The comparatively higher percentage of shortfall under Naphtha and Aviation fuel is attributable to Railway's inability to supply the right type of wagons to ensure quality control requirements of the product.

1.5.9 A base-wise analysis of the loadings *vis-a-vis* slate showed that during 1983-84 out of 28 bases (BG 15 and MG 13) none of the bases were able to meet the slate (target). A statement showing the base-wise slate and loadings during 1983-84 is given in Annexure-III. The shortfall in the loading bases situated in the Eastern sector, *viz.*, Barauni, Haldia, Rajbandh, Budge Budge, Siliguri, Bongaigaon were generally more than the shortfall in bases in Western sector.

1.5.10 For instance, at Rajbandh and Siliguri which are pipe line terminals, the shortfall was 36 per cent and 27 per cent (average) respectively. At these places in 11 out of 12 months the slate was not met. At Bombay the shortfall was 18.3 per cent and at Koyali it was marginal (1.4 per cent). At Barauni and Vishakapatnam also the slate could not be achieved in 7 and 10 months respectively during 1983-84. On the metre-gauge the shortfall was chronic at Kandla, Mathura, Siliguri, Tinsukia, Bongaigaon and Tiruchi though MG tank wagons were idling in Western region.

1.5.11 The consequences of shortfall in loading with reference to slate are generally :

(a) oil companies have to resort to road movement (road bridging) of products incurring additional expenditure on road transport—which amounted to Rs. 1,808.73 lakhs during 1980-81 to 1983-84,

(b) production loss in refineries on account of non-availability of tank wagons,

(c) high inventories and containment problem at refineries leading to imposition of cuts in processing crude,

(d) product shortages and depot dryouts necessitating increased road-bridging, and

(e) shutdown of product pipe lines because of uliage problems.

1.5.12 All these consequences had arisen in the refineries in North Eastern Region and in some measure in other refineries during the years 1981—84.

II. Road bridging

1.5.13 Road bridging or road movement of POL products to rail fed areas is resorted to by oil companies

(a) on account of non-availability of tank wagons,

(b) due to lack of adequate unloading facilities at terminal depots,

(c) to meet urgent increase in demands which could not be met by rail,&c.

1.5.14 The Government reimburses the additional expenditure on account of difference between road haulage charges and rail freight to the oil companies. The expenditure incurred by the Government on such subsidy was

	(Rs. Lakhs)
1980-81	664.33
1981-82	473.57
1982-83	276.55
1983-84	394.28
Total	1,808.73

1.5.15 Though the entire expenditure may not be attributable to non-availability of tank wagons, considering the chronic shortfall in tank wagon loading *vis-a-vis* slate mentioned above it would appear that a major portion of the expenditure was on account of Railways' inability to lift the traffic in spite of the wagons being surplus and idling.

III. Non-availability of tank wagons in North Eastern Region

1.5.16 In the North Eastern Region, the non-availability of adequate MG/BG tank wagons to meet the requirements and to move the surpluses has been a perennial feature causing a loss of movement—ing in depot dryouts—refinery crude-cuts and shutdown of Gauhati-Siliguri pipe line due to lack of ullage.

1.5.17 The Railway slate was brought down from 90 tank wagons to 80 tank wagons on MG from 1st January 1984 and the materialisation was at a level of 60 to 66 tank wagons only per day. On the BG there was a serious constraint on the movement/availability, mainly due to restriction in movement via Farakka and the slate at Bongaigaon Refineries and Petrochemicals Limited (BRPL). Siliguri is pegged at 110 tank wagons per day and the actual performance was 100 tank wagons per day.

1.5.18 Consequently the oil industry is deploying 186 tank trucks for deliveries and road bridging.

1.5.19 Refinery production from the three refineries in North Eastern Region was :

(thousand tonnes)

	1979-80	1980-81	1981-82	1982-83	1983-84
A.O.D./IOC *(0.5)	391	477	474	501	549
Gauhati *(0.8) .	606	577	667	733	871
Bongaigaon*(1.0)	154	37	381	515	649
Total . .	1,151	1,091	1,522	1,749	2,069

*Figures in brackets are installed capacity in million tonnes.

1.5.20 As the demand in North Eastern Region is less than 50 per cent of the production (for instance, the demand in 1982-83 was 761,000 tonnes) the balance has to be moved out of the region. Taking into account the normal operating levels of refineries at Digboi and Gauhati, the local products demands and availability of tank trucks it would be necessary to operate a BG slate of about 134 tank wagons per day if BRPL is to operate at 1.0 MTPA. Like-wise a MG slate of about 92 wagons per day would have to be operated in the North-Eastern Region. The Railways, however, were not able to provide adequate transport, in spite of the fact that BG and MG tank wagons were idling in the West Region [vide para 1.4.5 (g)]. Consequently the oil companies had to resort to road-bridging, as a regular measure. It has been estimated that in 1984-85 a quantity of 260 thousand tonnes would have to be bridged to make up for the short-fall in tank wagons, if the refinery throughput is to be kept at their capacity level. The additional expenditure on such road bridging has been estimated at Rs. 3.73 crores duirng 1984-85 and was expected to increase to Rs. 10.7 crores in 1985-86.

1.5.21 The actual crude processing at BRPL has been about 0.65 MTPA against the Annual Plan target of 1.0 MTPA. The shortfall has been on account of restricted crude availability due to product ullage constraints.

Bongaigaon Refinery was advised that in view of various constraints a crude throughput level of only 0.65 to 0.70 MTPA appeared to be achievable against 1.0 MTPA. Consequently the demand in other regions will have to be met by imports to the extent of short-fall in capacity utilisation at the refineries in North Eastern Region.

IV. Diversion of traffic to road

1.5.22 Besides North Eastern Region, road bridging is also resorted to frequently between Haldia and Namkum, Tata, Rourkela to cover tank wagon short-fall.

1.5.23 Another point that arises out of large scale road bridging is that the traffic gets permanently diverted to road once certain infrastructure is created. It may be difficult for the Railways to retrieve the traffic.

1.5.24 The Railways' policy is to move POL traffic in block rakes in train loads (72 wagons). Piece-meal movement is done for special products (lubricants) from Bombay, HSD oil for Railways and Defence and furnace oil to certain customers. The total piece-meal movement is of the order of 10 per cent. This policy of the Railways would also seem to have affected the traffic, as many terminal depots have restricted facilities. Consequently the oil companies resort to road bridging. Instances of such road-bridging are between Tinsukia and Jorhat, Gauhati and Haibergaon, and Bombay and Manmad, Jalgaon, Sholapur. The insistence by the railways that they would carry only train loads and also the fact that rail freight rates had increased steeply in recent years has resulted in diversion of traffic to road. Products threatened by diversion to road include petrol, lubricants, furnace oil, bitumen, LPG etc. The rail traffic in petrol has dipped from 1,036 thousand tonnes in 1981-82 to 945 thousand tonnes in 1983-84, lubricants from 313 thousand tonnes in 1982-83 to 198 thousand tonnes in 1983-84, and bitumen from 719 thousand tonnes in 1981-82 to 478 thousand tonnes in 1983-84.

1.5.25 Bitumen. The total consumption/sales of bitumen in the country and the movement pattern was

(thousand tonnes)

Year	Consumption	Movement Bulk	Movement in Packed	Total loaded on Railways
1982-83	1379	329	1050	726
1983-84	1014	320	694	478

1.5.26 The drop in loading of bitumen was mainly under packed consignments. According to the Ministry of Petroleum, the requirements of customers are less than a rake-load and railways have not been able to supply BOX wagons for piece-meal movement. At Mathura no rail loading of bulk bitumen is undertaken and packed consignments move out of refinery by road.

1.5.27 On the North East Region, Railway was committed to give 5 rakes per month. However, this was not adhered to. Consequently, the oil industry had made arrangements for moving bitumen from Haldia to Pandughat by water-ways involving an extra expenditure of Rs. 280 per tonne.

Low sulphur heavy stock (LSHS).

1.5.28 For transport of LSHS (which is used by industry in lieu of furnance oil), the Railways use a special type of tank wagon (TOH) with heating elements. The number of such wagons owned by railways increased from 786 in 1978-79 to 2,099 in 1983-84 (increase of 167 per cent). The traffic

carried (in terms of wagons loaded) however increased by 35 per cent only during this period. Even in 1983-84 there was a shortfall of 8 per cent in loading with reference to slate. Besides, the slate accepted by railways was less than the demand in some months.

V. Movement of liquified petroleum gas (LPG).

1.5.29 The holdings of LPG wagons and the traffic carried were as under :

Year	No. of wagons Holding	Loading	Number of loadings per annum per wagon	Traffic carried (thousand tonnes)	Consumption
1978-79	128	6066	46	82	408
1979-80	128	5402	46.8	73	410
1980-81	132	5596	42.4	78	405
1981-82	248	7550	30.4	100	492
1982-83	784	9692	12.4	124	602
1983-84	852	9706	11	149	747

1.5.30 The increase in wagon holdings was the result of ordering 850 LPG tank wagons during 1978-79 to 1980-81 and 1982-83. Another 197 LPG tank wagons have been received upto August 1984.

1.5.31 It will be seen that the Railways carried only 20 per cent of the product though their wagon holdings had increased six-fold. (Majority of these wagons are jointly owned with oil companies). The actual transport capacity of the Railways was 0.42 million tonne per annum (with a turn-round of 11 days), but the actual traffic lifted was 1/3rd of the capacity.

1.5.32 It will also be observed that even with a holding of 128 wagons only, the Railway had achieved a total loading of 6066 wagons in 1978-79. The wagon holdings had increased 6 times but the loading had increased by 1.6 times only resulting in idling of the capacity created. Average annual loading per wagon dropped from 46 times per annum in 1978-79 to mere 11 loadings in 1983-84. The Oil Companies had reported that while on the one hand the gas is being flared in the refineries, on the other hand it has not been possible to meet the public demand due to inadequate transportation capacity of the Railways. The product at times is even being imported to meet the demand in Port areas.

1.5.33 It will be observed from the table above that most of the LPG wagons were put on line in 1982-83 and 1983-84. However, it was reported by Indian Oil Company (IOC) in September 1984 that out of the total fleet (of about 807 tank wagons), the number of tank wagons available at its base loading stations were about 400 only. Actually, in the Western Sector the holding was shown as 306 wagons only in 1983-84. Even in March 1983, the Ministry of Petroleum and Ministry of Railways were aware of continued back-logs on LPG in all the markets in the country due to lack of planning and transport bottle-necks. However, no concerted action was taken by the Ministries in spite of increase in tank wagon holdings to monitor the availability of LPG wagons and to improve the loadings. The poor performance was found to be due to :

(i) High incidence of sickness [In April 1984 about 17 per cent of the holdings, *viz.*, 141 were either under periodical overhaul (POH) or marked sick against the norm of 4 per cent].

(ii) Excessive detention to wagons at base stations : For instance, at Bajuwa (Western Railway) the time taken for loading a wagon was 94 hours in 1981, 126 hours in 1982 and 118 hours in 1983, of which 35, 67 and 55 hours respectively, were the time taken by the Railways for placement and removal of wagons.

(iii) Idling of wagons—A few instances are given below :

(a) In the month of January 1984, there was hold-up of LPG tank wagons at Oil Company terminals for 15 days at Sanatnagar and for 10 days at Miraj due to improper planning of movement.

(b) 70—90 LPG tank wagons were idling daily during 15th to 23rd January, 1984 due to shut-down of refinery units and weigh-bridge being out of order at Koyali.

(c) At Trombay 80 tank wagons were idling inside the refinery from August 1984 but were not taken up by Oil Compapy for degassing and repairs.

(iv) Excessive turn-round time :

The turn-round of LPG tank wagons in use (allowing 20 per cent ineffectives) was :

1980-81	17 days
1981-82	17.2 days
1982-83	15.5 days
1983-84	24.6 days

Consequently, the Railways have been accepting lower slate (target) than the demand.

For instance, the Railways accepted a slate of 30, 35 and 36 wagons per day against the demand of 49, 53 and 43 wagons per day in August 1984, September 1984 and October 1984 respectively.

1.5.34 The performance was much less than the slate as shown below :

Month	Daily Average	
	Slate	Actual loading
August 1984	30	22
September 1984	35	28
October 1984	36	32

As a consequence of the shortfall in loading and non-availability of LPG wagons, it was reported that there was a production loss of 2600 tonnes at Koyali Refinery in July 1984. Further, in order to make up the shortfall, the industry was advised to move the product by road.

1.5.35 The performance of the Ministry of Petroleum, Oil Company and the Ministry of Railways in the matter of movement of LPG was far from satisfactory, considering that the Government had been committed to release 16 lakh new gas connections in 1984.

B. *Utilisation*

I. Indenting and supply of wagons

1.5.36 According to the procedure laid down by Ministry of Railways (Railway Board) the oil companies are permitted to place indents for POL tanks as and when necessary, in units of rakes. The indents are permitted to be cancelled by the indentor after 3 days from the date of indenting. At the end of the month oldest outstanding indent equivalent to 3 days' loading should be carried forward and the rest treated as cancelled.

1.5.37 The oil companies are also required to pay lump sum deposit of wagon registration fee (equivalent to 3 days' loading) and the normal rules for forfeiture and refund of registration fee apply in the case of tank wagons also.

1.5.38 A review by Audit of the indents placed by oil companies, supply of tank wagons and their loading showed that

(1) the indents placed by the oil companies were higher than the slate,

(2) the supply was in excess of the indent/slate, and

(3) the number of wagons loaded was less than those supplied.

1.5.39 It will be seen from the statement showing the number of wagons indented, supplied and loaded (as given in Annexure IV) that on an average,

(i) the supply of wagon was more than the indent on Central Railway (36 per cent), Eastern Railway (32 per cent), North Eastern Railway (33 per cent), South Central Railway (*Manmad—29 per cent) and Western Railway (27 per cent—BG, 84 per cent—MG), while it was less than the indent on South Eastern Railway (3 per cent) and South Central Railway (Vasco-da-gama—13 per cent).

(ii) the percentage of wagons not loaded was Central-33, Eastern-39, Northern-7, North Eastern-59, Southern-4.7 BG and 20.1 MG, South Central (Manmad)-23, South Eastern (Haldia)-7 and Western-Railway 22 BG and 47 MG.

1.5.40 The reasons for the excessive indenting appear to be oil companies' apprehension about unfit wagons being supplied. The excess supply of Railway is due to excess availability of stock. The reasons for shortfall in loading with reference to supply are generally

(a) unsuitability of wagons,

(b) wagons being marked sick for mechanical defects,

(c) wrong placement, and

(d) wagons being detained by oil companies for loading on next day.

1.5.41 A test check by Audit on Central Railway for the period July 1982 to November 1983 showed that at Bombay, out of the average monthly supply of 8650 tank wagons, 3.6 per cent were rejected as 'sick' by train examining staff after placement, 4 per cent by oil companies (as unfit for product) and 19 per cent were left over and detained by oil companies in their sidings. At Budge Budge on Eastern Railway, out of 4707 wagons supplied during 1983-84, 2.7 per cent were marked sick, 16.7 per cent were rejected by oil companies and 19.2 per cent were not loaded. At Tondiarpet, out of 67,697 tank wagons placed for loading during 1982-83, 0.22 per cent were rejected as sick or defective, 1.1 per cent on account of wrong placement and 1.4 per cent for want of demand. Similarly, at Bajuwa on Western Railway, during 1982-83, out of 1,64,765 wagons supplied 7,224 (4.4 per cent) were rejected—1,360 for want of calibration, 2,270 marked sick, 1,021 unfit for product, 98 pre-loaded and 2,475 for want of programme.

1.5.42 The above factors were observed in earlier years also.

1.5.43 The excessive supply of wagons and their remaining unloaded and marked sick entails unnecessary detention to wagons and at times empty haulage as noticed on North Eastern Railway at Gorakhpur Fertiliser Plant where tank wagons were hauled empty from refinery to consumer and back, entailing infruc-

tuous expenditure of Rs. 16.7 lakhs during the period November 1981 to February 1984 as mentioned in para 1.9.2.

1.5.44 The very high percentage of rejections after placement on Central, Eastern and Western Railways indicate inadequacy of examination of wagons before placement by train examining staff of mechanical department. It was stated by Western Railway, that empty tank wagon loads on arrival were offered for examination in the yard where high level platform was not available for proper examination of master valves and barrel fitments. The wagons were again subjected to further examination after placement on the loading gantry to eliminate the wagons with mechanical defects. This practice of Train Examiner (TXR) examination after placement in the gantry involves unnecessary haulage of wagons from yard to loading gantry and back. As the Railways should deliver wagons to the oil industry after making them fit for loading, the examination of and attention to tank wagons should be done before placement under the gantry. Such a system is prevalent at Madras (where the percentage rejection for sickness and defectiveness was 0.22 per cent only), where the tank wagons are thoroughly examined for loading and only fit tank wagons are placed under the gantry.

1.5.45 The matter of positioning the TXR staff and carrying out all preparatory operations by Railway staff before loading has been under discussion between Ministry of Railways and Ministry of Petroleum since 1981. No decision has been taken so far.

1.5.46 Incidentally, it was also noticed that in respect of wagons indented and not loaded on oil companies' account, the Railways were not levying any penalty on the oil companies by way of forfeiture of wagon registration fees. Instances are given below .

Railway	Period	No. of wagons	Amount due for forfeiture
			Rs.
Northern	1982	151	34,050
	1983	76	
Southern	1981-82	371	72,000
	1982-83	108	
	May-83	579	86,850

II. Productivity and turn-round of tank wagons

1.5.47 The performance and utilisation of tank wagons could be gauged from,

(a) the index of net tonne kilometres per wagon day which takes into account the load, speed and hours of utilisation of wagons, and

(b) the index of turn-round days showing the interval between two successive utilisations (loadings) of a wagon.

1.5.48 The table below shows these indices in respect of tank wagons.

Year	Broad Gauge		Metre Gauge	
	NTKM per wagon day	Turn-round days	NTKM per wagon day	Turn-round days
1979-80	1136	12.6	1123	16.0
1980-81	1177	12.9	1271	16.2
1981-82	1146	12.4	1071	16.0
1982-83	952	12.6	1097	16.2
1983-84		12.6		16.0

1.5.49 It will be observed that there has been a decline in the output (NTKM) per wagon in 1982-83 and 1983-84 while the turn-round has more or less remained constant. This is indicative of poor utilisation of the wagon fleet. This reduces the profit margin on such traffic. The decline in net tonne kilometres per wagon day is attributable to,

(a) drop in traffic (tonnage carried),

(b) drop in lead,

(c) excessive number of wagons on line.

1.5.50 There has been no drop in total traffic in these years though under certain commodities like petrol, lubricants and bitumen there has been a decline in 1983-84 (cf. Para 1.5.24). On the contrary the Railways were unable to carry the traffic offered, as explained in an earlier section (cf Para 1.5.4).

1.5.51 The lead of POL traffic had increased from 631 km. in 1977-78 to 780 km. in 1980-81, but has dropped to 574 km. in 1983 primarily due to commissioning of Mathura Refinery in January 1982 and Mathura-Jalandhar pipe line in December 1982.

1.5.52 Excessive ordering of wagons due to incorrect estimation of requirements resulting in excessive holding and also the surplus arising out of commissioning of Mathura Refinery have been dealt with in para 1.4 above.

III. Analysis of turn-round

1.5.53 While the overall turn-round in 1983-84 was 12.6 days, a further analysis of turn-round for type-wise wagons (assuming 5 per cent ineffective) showed that turn-round of POL tanks was 13.3 days, LSHS wagons 6.2 days, LPG tank wagons 29 days.

The turn-round days in the case of tank wagons (90 per cent of which move in closed circuit train loads) comprises :

(a) base detention,

(b) transit time to and from base station, and

(c) terminal detentions.

The turn-round time of 12.6 days (BG) given in table above, represents the turn-round time of the

entire POL fleet and is considered to be very high as will be explained below :

An analysis of turn-round time shows :

	Days	Remarks
Base detentions	2	The time allowed for oil companies for loading is 5 hours, but the average time taken is about 2 days.
Transit time per trip for a lead of 800 km at the average speed of goods train viz. 22 km ph. $\left(\frac{800 \times 2}{22} = 72 \text{ hrs}\right)$	3	
Terminal detentions	2	Time allowed for decanting is 10 hrs. The time taken for placement is however more than one day.
Total	7	
Unaccounted for detentions etc.	5	
Turn-round observed	12	

It will be seen from the above that though the transit time and terminal detentions account for 7 days only of the turn-round time, the unaccounted for detentions in yards *i.e.* detentions to wagons before placement in base stations and after release from the terminal depots are very high.

1.5.54 For purposes of procurement of wagons the Railway Board has adopted a turn-round of 12 or 11 days, though as given above the actual turn-round should have been about 7 days only.

1.5.55 If action had been taken to eliminate or minimise the unaccounted for detentions and optimise the utilisation of wagons the procurement of a large number of tank wagons could have been avoided (c.f. Para 1.4.5. e). It may be mentioned here that reduction of one day in the turn-round time would mean saving of 2,250 tank wagons with an investment of Rs. 25 *crores at present day costs.

1.5.56 An analysis of the reasons for excessive time taken at base stations, terminal stations and transit time are dealt with in the following paragraphs.

1.5.57 It will be observed from the statement showing the detentions at some base stations and the time taken for placement and removal and for loading given in Annexure V, that while time taken for loading (placement to removal) ranges from 6 hours at Tondiarpet (Madras) to 43 hours at Budge Budge, the time taken by Railways for placement, and removal & despatch ranged from 17 hours at Trombay to 103 hours at Gauhati and Barauni (MG). The total detention has also shown increase at Budge Budge, Cochin, Haldia and Barauni (MG) though the total number of wagons loaded had come down at Haldia and Budge Budge.

1.5.58 Besides the detentions in respect of wagons placed for loading, the wagons rejected and sick wagons also suffer detention in the yards. The wagons rejected on account of wrong placement, unsuitable for product etc., are detained for more than a day before being offered for loading again. Similarly the sick wagons have to be attended to in sick line and are detained there unnecessarily. For instance on the Eastern Railway at Budge Budge in 1983, 2,343 wagons were detained on an average for 20 hours at sick line disrupting flow of movement of such wagons and leading to heavier detention to entire rake.

In addition, the daily average number of wagons stabled/idling as surplus on all railways was

Year	BG	MG
1979	518	150
1980	506	101
1981	1401	169
1982	1327	196
1983	2099	424
1984 (upto July 84)	1362	411

1.5.59 Transit time and terminal detentions

A record of detentions to tank wagons at oil company depots (other than base stations) and at the premises of major users (such as power-houses) is not maintained by the tank wagon controllers. However, extent of such detentions could be gauged from the following figures :

Base Station	Total turn-round days	Base detention days	Transit time and detention at destination (days)
Bajuwa (Western Railway) (January 1984 to July 1984) and Gandhidam	12.2 to 13.3	2	10.2 to 11.3
Vizag (average 1983)	8	2	6
Haldia (average 1983)	11	4	7
Barauni (average 1983)	10	2	8
Rajbandh (average 1983)	8.8	1	7.8
Wadala (Bombay) (April 1984 to July 1984)	13	3	10

*Average cost of tank wagon as per orders placed was Rs. 1.1 lakhs.

1.5.60 One of the reasons for excessive detentions at destination is the lack of adequate unloading facilities. In an inter-ministerial meeting held in Cabinet Secretariat in January 1981, it was decided that a joint review of the loading and unloading facilities should be undertaken by the Department of Petroleum and Ministry of Railways to determine the facilities for long term handling of POL products by rail. Meetings were held with the Zonal Railways and Oil Industry to consider the long-term requirements of handling POL traffic. Some of the issues considered and their progress were :

(i) Tank wagon discharge facilities

While the oil industry desired a full rake POL siding in two spurs the Railways considered it uneconomical. Though the issue related to development of future POL sidings, a final decision has not been taken so far (August 1984).

(ii) Extension of sidings

1.5.61 It was decided to extend the existing sidings to accommodate full rakes of POL tanks and develop the sidings at railways' cost as common sidings.

Accordingly, amongst other stations, Tatanagar, Rourkela, Cuttack, Bhilai, Berhampore, Sambalpore and Balassore on South Eastern Railway and Rajbandh on Eastern Railway were chosen for development of full rake facilities. However, it was noticed that even after a lapse of 3 years no progress has been made as the respective railways have failed to finalise the plans and arrange for joint inspection in consultation with IOC. Consequently the detentions at these places continue to be high. For instance, the turn-round time between Barauni and Tata was 12 days (March 1983), Bondamunda 13.5 days (July 1983).

1.5.62 According to Railways, the handling of a rake in two placements (instead of one placement if a full rake siding is provided), involves extra detention of a minimum of 24 hours at the terminal. The loss of earnings to the Railways as a result of extra detention to tank wagons alone for additional period of 24 hours (at the rate of 7 rakes per month) is of the order of Rs. 13 lakhs per annum. Consequently, the Railways are incurring huge loss on account of delay in completion of the works which would have reduced terminal detentions.

1.5.63 The detention to wagons at railway diesel sheds are dealt with in the next paragraph.

1.6. *Loading of Diesel Oil for Railways*

1.6.1 Railways have 160 fuelling points including 40 diesel sheds. At most of these locations the storage provided by oil companies is inadequate. The capacity at 87 installations was less than 15 days' consumption and at 62 installations the average daily consumption is less than half a tank wagon, say 13 kilolitres (Kls). At 11 installations there are no storage facilities and direct fuelling from tank wagons is resorted to. According to the agreement with IOC, the company provides storage facility at its cost, for 15 days' offtake. Though 87 installations have storage capacity of less than 15 days' consumption, the Railways have not provided permanent storage facilities because of delay in finalisation of plans, location, etc., in consultation with IOC as was observed in the case of Satna *vide* sub-para 16.13 below.

The despatch of HSD oil tank, wagons to fuelling points on Railways has to be regulated such that the wagons are not detained unnecessarily. But, it was observed that in practice the despatches to fuel installations on Railways was not properly programmed with the result that the wagons suffered enormous detentions.

1.6.2 The despatches to Railway diesel installations are in piece-meal. The monthly loading of tank wagons to Railways were about 3000 BG and 180 MG. However, these wagons appeared to take more than 45 days for completing a trip (against 11 days for all tank wagons), considering the detentions at fuelling points. Some instances of such detentions are mentioned below.

1.6.3 Ernakulam diesel shed is situated 10 kms from the supply point (Cochin) with a storage capacity of 140 kl. against the average daily issue of 16 kl. The oil siding has a capacity to hold 8 wagons. As per the present monthly programme, 24 tank wagons of diesel oil are to be supplied from Cochin at the rate of 3 tank wagons one in 4 days. The above programme is hardly adhered to and mostly 5 tank wagons are booked resulting in detention to wagons up to 22 days.

1.6.4 Arakkonam : Direct fuelling from tank wagons was in vogue during the year 1983-84. The average issue was about 1 to 2 Kl. a day. The average detention to tank wagons during 1982-83 and 1983-84 was 35 days and 47 days, and in one case 103 days.

1.6.5 Rewari : The average issue is about 15 Kl. in 2 tank wagons after every four days. But generally the shed was receiving 10 to 12 wagons, causing heavy detention. Between January 1984 and June 1984, 68 tank wagons were received in the shed, of which 56 wagons suffered detentions of more than 5 days. The cumulative distribution of detentions were

Wagons detained (cumulative)	Period (Days)
5	26—30
12	21 days and above
20	16 days and above
40	11 days and above
56	6 days and above
68	upto 5 days

1.6.6 Yeshwantpur : The fuelling point is located within 20 km. of Baiyyappanahalli where the oil companies have their bulk oil installations. The turn-round time between Baiyyappanahalli and Yeshwantpur in respect of diesel oil tank wagons ranges between 8 and 23 days against the average turn-round time of 6 to 9 days for rakes despatched by oil companies to far off places like Shimoga, Bhadravati etc.

1.6.7 Shakurbasti Diesel Shed/Tughlakabad Diesel shed :

Shakurbasti shed was receiving HSD oil from Kandla up to December 1981 from which date, it is receiving supplies from Mathura. Tughalakabad shed also receives supplies from Mathura.

1.6.8 A test check of detentions to wagons during March 1982 and December 1983 showed the following results :

Detentions beyond free time	Number of wagons (cumulative)			
	Shakurbasti		Tughlakabad	
	March 1982	December 1983	March 1982	December 1983
(1) 8 days and above	1	6	7	..
(2) 4 days and above	13	..	11	5
(3) 2 days and above	14	..	24	23
(4) 1 day and above	16	9	64	24
(5) upto 1 day	20	10	93	36

It will be observed that 65 per cent of wagons suffered detentions above 4 days at Shakurbasti and 12 per cent to 14 per cent at Tughlakabad.

1.6.9 Burdwan and Andal Diesel sheds :

	Year	No. of tank wagons received	Average detention (days)
Andal	1982-83	252	10.3
	1983-84	242	11.5
Burdwan	1982-83	229	17.4
	1983-84	255	22.1

The figures of detention at Burdwan represent total detention from arrival at Burdwan yard to despatch. (The average detention in the yard itself was about 1.5 days in 1983-84).

1.6.10 In addition, POL tank wagons which arrived were diverted to other stations. During 1981-82 and 1982-83, such diverted wagons numbering 60 and 65 respectively were detained for 4 days and 8.6 days respectively.

1.6.11 Phulera (Western Railway)

Phulera diesel shed has storage capacity of 12.7 days consumption (*i.e.* 700 Kls.). However, due to bunching of receipts the tank wagons suffered excessive detention as below :

Year	Number of wagons	Total detention beyond free time (days)	Average detention days
June 1983	2	2.2	1.1
August 1983	26	84.0	3.2
September 1983	11	62.0	5.6
December 1983	18	40.3	2.2
January 1984	10	26.6	2.7
March 1984	6	7.6	1.3

Similarly at Vatva diesel shed (BG) during November 1983, 6 tank wagons were detained for 798 hours.

1.6.12 Gooty (South Central Railway)

The storage capacity was only 553 Kls. against the 15 days' off-take of 780 Kls. in 1980-81 and 1050 Kls. in 1983-84. Owing to limited storage capacity detentions were excessive as below :—

Year	Tank wagons	Total days	Average days
1981	489	1316	2.69
1982	406	950	2.34

Similarly at Gooty traffic yard fuelling point, the detention in respect of 240 wagons during 1981 and 1982 was 1232 days.

The detention at Miraj and Hubli were as under :

	Year	Tank wagons	Total days	Average days
Miraj	1981	433	4189	9.7
	1982	465	3161	6.8
Hubli	1980-81	48	94.25	1.96
	1981-82	77	247.33	3.21
	1982-83	69	309.58	4.48

Guntakal (South Central Railway) : The metre gauge shed was receiving HSD oil from Vasco-da-gama (longer route) instead of from Madras as the Railway had not developed facilities for connecting the MG shed with BG yard. The delay of over 8 years in developing facilities had resultd in extra haulage cost of Rs. 6.87 lakhs during the period 1982-83 and 1983-84 (c f. Paragraph 11 of this report).

1.6.13 Satna

A temporary fuelling installation was functioning at Satna with a limited storage capacity of 48.24 Kls. This limited storage facility could not cater to the fuelling needs of goods trains and hence the Railway Administration decided to convert this temporary fuelling installation into a permanent one with

increased capacity of 621 Kl. Based on the requisition of the operating department, the Stores department placed an indent in 1976 on DGS&D for supply of 5500 Kl of HSD oil (per annum) to loco foreman at Satna. With the conversion of the temporary installation at Satna into permanent one, and additional facilities for fuelling point in New Katni Yard, it was considered by General Manager in November 1976 that the existing fuelling installation at Katni (South) would not be necessary. The four storage tanks of 280 Kl capacity were shifted departmentally in December 1978/January 1979 to Satna.

1.6.14 The average daily consumption of HSD oil at Satna increased from 12 Kl. in 1976-77 to 23.8 Kl. in 1977-78 and 28.1 in 1978-79, 34.1 in 1979-80 and 35 Kl in 1980-81. With the limited storage capacity of 48.24 Kl at Satna the HSD oil tank wagons received at Satna were detained there abnormally for decanting. The number of hours such wagons suffered detention during the period from 1976-77 to 1980-81 are given below :

Year	No. of days (average) wagons were detained for decanting (excluding free time)	Amount of demurrage charges paid (Rs. in lakhs)	Loss of earning capacity of the wagon (Rs. in lakhs)
1976-77	1.2	2.117	0.307
1977-78	3.3	6.28	0.952
1978-79	4.1	7.555	1.152
1979-80	4.0	9.027	1.273
			3.684

Even now (August 1984) permanent storage facilities have not been provided at Satna. The question of providing permanent storage facilities has remained under correspondence between Railway Administration and IOC for the last 5 years, but the Railway has not been able to finalise the location. The existing siding could hold only one wagon and consequently wagon suffer detention.

1.6.15 With a view to finding ways and means of eliminating piece-meal despatches of Railway HSD oil, and improving the utilisation of tank wagons, the Railway Board in consultation with IOC decided to July 1979 that :

(a) major diesel sheds/installations should develop full rake unloading facilities,

(b) diesel installations which are in close proximity to IOC's main depots/installations should have pipe line transfers, and

(c) all diesel sheds/installations which have road approaches should take their deliveries by road from IOC's nearest depots.

1.6.16 Accordingly the Railways were asked to examine the feasibility and other aspects in respect of 55 installations for 'road bridging'; 10 installations for 'pipe line transfers' and 20 installations for development of full rake unloading facilities. The proposals could not be implemented on account of non-availability of field data. The position was reviewed in January 1981, and it was decided that the road-supplies could be had at 19 (against 55) installations and full rake unloading facilities developed at 14 installations (against 20 selected earlier). The proposal for pipe line transfer was also reduced in scope, to 2 stations only, against 10. The proposal to have road supplies at 19 stations was also found to be economical. The savings due to release of tank wagons was expected to be Rs. 63 lakhs per annum against additional expenditure of Rs. 38 lakhs towards road-haulage costs and extra-sales tax *i.e.* a net saving of Rs. 25 lakhs per annum. The Railway Board, however, decided (May 1981) that supply of HSD oil to sheds should continue in piece-meal only and supply by road should be eliminated as it was conducive to fraud and malpractices. Consequently, even those stations where road-supplies were being taken earlier *viz.*, Kanpur, Anwarganj, Lucknow, Charbagh, Tinsukia, Yeshwantpur, Guntakal, Waltair and Sabarmati, were brought on to rail supplies in piece-meal wagons resulting in increase in turn-round days.

1.6.17 Further, with this decision, it was all the more necessary for the Railways to increase the storage capacity at the Railway diesel locations in order to avoid detention to tank wagons. This was also not planned by the Railways. In several diesel sheds/fuelling points the average daily consumption had increased 1½ times between 1976 and 1984, but the storage capacity had not increased (*e.g.* Barauni, Erode, Gooty, Kankaria, Bilaspur). Even at places where direct fuelling from tank wagons (by diverting wagons from other points) was being done, storage tanks have not been installed so far. On the Eastern and South Eastern Railways alone there were 11 such fuelling points, with a daily average consumption of 2—10 Kls. A tank wagon would have to be necessarily detained at these places for 3—15 days.

1.6.18 After the decision to give up the proposals for road supply of HSD oil the Railway Board asked (August 1981) the Railways to develop full rake unloading facilities at selected points (18 points) half rake unloading facilities at diesel installations having a daily consumption of 20 Kl and pipe line transfers etc. The Railways, however, did not consider it possible to provide for full/half rake unloading facilities at the existing locations in view of space limitations, change in pattern of consumption etc. The pipe line transfers were considered to involve unnecessary blocking up of inventory as the pipe lines would have to be laid for long distances from IOC's installation to Railway diesel sheds.

1.6.19 Thus even after a lapse of 5 years, the proposal to rationalise the HSD oil supplies to Railway diesel installations with a view to improving the utilisation of tank wagons has remained on paper without implementation. Meanwhile excessive detentions to tank wagons at Railway diesel sheds continue. The Railway's objection to taking road supplies and

pipe line transfers because the former was conducive to malpractices and the latter involved blocking up of inventory in pipe lines for long distance (4* to 20 km.) is not really tenable as the oil companies are supplying HSD oil by road tankers to other consumers and their own pipe lines carry oil for distances over 500 kms.

1.7 *Transportation of edible oils, molasses etc.*

1.7.1 The holding of tank wagons for other than POL traffic was 1851 BG and 553 MG in 1978-79, and 1720 BG and 418 MG in 1983-84. However, as mentioned in para 1.4.2, a provision for 1150 tank wagons for transporting edible oil, molasses, alcohol, etc., was taken into account in the total requirements in terms of multipurpose TORX wagons.

1.7.2 The actual traffic in edible oil, molasses, etc. was as under :

(thousand tonnes)

Year	**Edible oil	Molasses	Alcohol	Acids	Caustic Soda
1977-78	754	266	19	21	197
1980-81	554	115	15	14	136
1981-82	562	106	17	15	148
1982-83	495	85	12	20	134
1983-84	536	126	83	14	111

(**includes imported edible oil.)

1.7.3 The anticipated increase in non-POL traffic had not materialised. Of the 536,000 tonnes of edible oil carried in 1983-84, approximately 310,000 tonnes were imported oil moving in tank wagons from Bombay/Kandla to refining centres.

1.7.4 The State Trading Corporation of India (STC) imports unrefined rapeseed and soyabeen oil. The programme for loading in 1984 had been indicated by STC as 30 rakes at Bombay and 9 (BG) and 25 (MG) at Kandla per month. A review of loadings from January 1984 to July 1984 showed that these targets never materialised, the maximum number of rakes loaded being 19 (April 1984), at Bombay and 6 (BG) and 15 (MG) at Kandla. However, the Railways had been supplying a large number of wagons resulting in 20 per cent rejections/leftovers with attendant detentions. At Kandla 35 MG wagons were idling for 12 days for want of demand for edible oil.

1.8 *Ineffective tank wagons*

1.8.1 The number of tank wagons rendered ineffective on account of their being under repairs or under periodical overhaul was on an average 767 per month and 868 per month, *i.e.* 2.84 per cent and 3.06 per cent of the holdings respectively during 1982-83 and 1983-84. The percentage of ineffective wagons was not very high compared to the norm of 4 per cent. However, this could have been brought down further if the unnecessary detentions, mentioned below, had been avoided.

1.8.2 *Eastern Railway.*—The time taken for periodical overhaul (POH) of 452 tank wagons in Kancharapara workshop was 25.5 days per wagon in 1982-83, of which the actual time for repairs was only 7.5 days. The detention to wagons before POH and after POH in the workshop and yard accounted for 18 days.

1.8.3 *Central Railway.*—The actual time taken for POH and special repairs and the total time the wagons were in Kurla workshops were as under :

Year	No. of wagons		Actual Time (days)		Total time (days)	
	POH	Special repairs	POH	Specia repairs	POH	Special repairs
1981-82	1877	2007	2.7	1.9	8.5	7.7
1982-83	1843	2190	2.6	1.7	7.4	7.1

1.8.4 *Southern Railway.*—Eighteen (18) wagons sent for POH at Perambur workshops between August 1981 and December 1983, suffered heavy detentions; the average detention being 12 months, about 9 wagons having been detained for more than 6 months.

1.8.5 *Northeast Frontier Railway.*—The total detention in workshops and the actual time taken for repairs are given below :

Year	No. of tank wagons periodically overhauled	Average No. of days detained in the workshop	Average No. of days utilised for periodical overhaul
POH of tank wagons in Dibrugarh workshop			
1981-82	417	8.72	5.65
1982-83	223	10.79	5.70
1983-84	218	8.89	6.72
Special repairs to tank wagons in workshop			
1981-82	7	5.43	5.28
1982-83	33	12.21	6.33
1983-84	20	18.45	7.80
POH of tank wagons in New Bongaigaon workshop			
1980-81	43	8.81	6.12
1981-82	79	11.28	5.92
Special repairs to tank wagons in New Bongaigaon workshop			
1980-81	20	11.20	4.85
1981-82	9	17.00	12.66

1.9 *Other points of interest*

1.9.1 *Cleaning of tank wagons.*—It was mentioned in an earlier paragraph (c.f. *Para* 1.5.40) that one of the reasons for rejection of tank wagons by oil

*Upto a distance of 4 kms pipe lines are provided free of cost by the oil companies.

companies was that they were unfit for the product. The demand for tank wagons for loading white oil and black oil has been fluctuating from time to time. Therefore, the Railway Administration has often to resort to steam or chemical cleaning of tank wagons to make them fit for loading the traffic offered. The Ministry of Railways (Railway Board) decided (December 1981) that the Oil Industry, being solely responsible for such fluctuations, was required to bear the cost of cleaning as and when such cleaning became necessary. Subsequently, in November 1982, the Railway Board decided that the Railways should charge uniform rates for cleaning, and accordingly fixed the rate at Rs. 1,200 per tank wagon including the detention charges for two days and if the detention for steam cleaning is more than two days, additional detention charges at the rate of Rs. 400 per day per tank wagon is to be recovered. Rates for chemical cleaning was also fixed in May 1983 at the rate of Rs. 200 per wagon and Rs. 400 detention charges, *i.e.*, Rs. 600 per tank wagon including detention charges upto 2 days as in the case of steam cleaning and if the detention is higher, detention charges at the rate of Rs. 200 per day should be levied. The Railways have not implemented these instructions. Though a large number of wagons are steam cleaned frequently in order to make them fit for loading white oil the Railways have not been recovering the cleaning charges from the oil companies. The amounts due for recovery are shown below :—

Railway	Period	No. of tank wagons		Total amount due from oil companies (Rs. in lakhs)
		M.G.	B.G.	
Southern	Dec. 1981 and Nov. 1982		133	0.72
	Dec. 1982 and Jan. 1983	95	45	1.68
	May 1983 and Feb. 1984		581	6.97
	May 1982 and May 1983		820	9.84
Central	Aug. 1982 to July 1983		86	1.03
South Eastern	Dec. 1981 to March 1984		898	10.37
South Central	Jan. 82 to Sept. 84		71	0.38
Western	1981 to 1983 and upto March 1984		37340	No debits raised
Eastern	Nov., Dec., 1981, Dec. 1982 and Jan. 1983 to March 1983		Chemical cleaning 1873 Steam cleaning 39	-do

1.9.2 *Empty haulage of BG tank wagons in naphtha rakes.*—With the change over in naphtha movements to Gorakhpur unit of Fertiliser Corporation of India, (FCI) from MG to BG with effect from November 1981, naphtha is received in BG tank wagons at Nakaha Jungle station which serves the Corporation's siding. The naphtha rakes received at FCI/Gorakhpur during November 1981 to January 1982 contained lesser number of tank wagons than that could be accommodated in the siding and also empty tank wagons. This caused shortage of feed stock for the Fertiliser factory and the matter was reported to the Railway Board who advised the Northeast Frontier Railway to run naphtha rakes with loaded wagons only.

A review by Audit (March 1984) revealed that during the period November 1981 to February 1984, out of 43 naphtha rakes received from Barauni junction, 33 rakes contained 112 empty tank wagons. The avoidable expenditure on the haulage of these 112 tank wagons from Barauni junction during November 1981 to February 1984 worked out to Rs. 2.1 lakhs.

Similarly, out of 132 naphtha rakes received from other stations *viz.*, New Jalpaiguri, New Bongaigaon, Tinsukia (Northeast Frontier Railway), Barapali (South Eastern Railway), Mathura (Central Railway) and Fort Songadh (Western Railway), 61 rakes contained 252 empty tank wagons, the expenditure on haulage alone amounting to Rs. 14.6 lakhs.

1.9.3 *Unnecessary haulage of tank wagons.*—South Central Railway arranged transport of drinking water in tank wagon specials during the period from

10th April, 1983 to 31st July, 1983 free of charge from Vijayawada/Rajahmundry to Madras and some other drought affected areas in Tamil Nadu. 540 tank wagons were deployed in water movement circuit. The Railway Board in August 1983 decided that tank wagons released from the circuit should be kept stabled on South Central Railway. Ignoring these instructions, South Central Railway despatched 298 wagons to Southern Railway in August/September 1983 and October 1983 and another 64 wagons to Central Railway in September 1983. The Southern Railway rejected about 201 wagons as they were found deficient in fittings and returned 96 wagons to South Central Railway for repairs and reuse at Waltair (South Eastern Railway). These wagons were not however, accepted by oil companies for loading on the ground that the wagons had been used for transport of water, and were returned to Madras. The haulage of tank wagons, contrary to the instructions of Railway Board for stabling the wagons, resulted in unnecessary expenditure of Rs. 2.23 lakhs.

1.9.4 *Idling of newly built wagons.*—A batch of 66 newly built TORX (oil tank) wagons was received at Irimpanam yard (Cochin) on 6th September, 1982 from the manufacturers. While the wagons were placed for loading by Cochin Refineries Limited (CRL) immediately after their receipt, the entire batch was rejected by them on the plea that revised design of the wagon (CBE type) did not suit their loading arrangements. A few wagons were loaded between 9th September, and 24th September, 1982. Thereafter the CRL authorities stopped loading these wagons. Regular loading of these wagons commenced from 27th November, 1982 apparently after discussion with the CRL authorities. Thus between 24th September 1982 and 27th November 1982 the new wagons were idling for 63 days.

On the South Eastern Railway four new tank wagons received from manufacturers in March 1982 and May 1982 were not put on line till June 1982—November 1982 as they were not calibrated.

1.9.5 *Loss of freight on POL traffic.*—The POL traffic from Bajuwa and Kandla bases of Western Railway to various stations on the Northern Railway was carried by the all-BG route as the shorter MG route was not available, the transhipment facilities for POL having been closed in 1956. The freight was, however, levied by the shorter route, resulting in a concession of Rs. 3.23 crores for the period February 1982 to November 1983 (c.f. Para 29 of this report).

1.10 *Summing up*

Rail transport of Petroleum products (POL)—an important high rated traffic is done through special type of wagons *i.e.* tank wagons. As these wagons are unipurpose, adequate care in planning to minimise investment in tank wagons and other infrastructural facilities (for handling POL traffic) is necessary to ensure intensive utilisation of assets created. A review in audit of procurement and utilisation of tank wagons showed that the procurement was excessive resulting in surplus and idling of wagons and that the utilisation was below the optimum level on account of unnecessary detentions, inefficient operations, failure to provide adequate facilities, etc. The salient features noticed are summarised below :

(A) Growth of traffic and procurement of tank wagons

- Despite 39.4 per cent growth in consumption of petroleum products in the country during the period 1977-78 to 1983-84 the rail traffic in POL increased by 37.1 per cent only indicating a decline in railways' share of traffic (Para 1.2.2).
- Between 1978-79 and 1983-84 the broad-gauge tank wagon holdings had increased by 44 per cent against the increase of 35 per cent in traffic; the capacity created was in excess of materialisation of traffic (Para 1.3.2).
- Though the POL tank wagons are exclusively meant for use of oil companies, the ownership of wagons rests with Railways and the investment for procurement is made in railway sector, except for a small number of LPG (Liquefied Petroleum Gas) tank wagons which are jointly owned by oil companies and Railways (Para 1.4.1).
- Additional requirements of 6090 BG and 472 MG tank wagons assessed for the sixth plan period was made on the basis of liberal turnround (11.2 days) and certain *ad hoc* assumptions about commissioning of Mathura Refinery, edible oil traffic, etc. (Para 1.4.2).
- The number of wagons ordered was in excess (4177) of the assessment and without justification and had resulted in idle investment of Rs. 46 crores involving unnecessary payment of Rs. 6 crores dividend to general revenues (Paras 1.4.4 & 1.4.9).

(B) Performance of tank wagons

- Despite increase in tank wagon fleet the railways were unable to meet the target (slate) of loading (Para 1.5.4).
- The shortfall in loading *vis-a-vis* the slate on broadgauge during 1983-84 was about 11 per cent in white oil (mainly naphtha, aviation fuel and HSD oil), 8 per cent in black oil (mainly light diesel oil) and 17 per cent on metre gauge (Para 1.5.5).
- The shortfall in loading *vis-a-vis* slate in the bases situated in the eastern sector viz. Barauni, Haldia, Rajbandh, Budge Budge, Siliguri, Bongaigaon was generally more than the shortfall in bases in western sector (Para 1.5.9).
- The shortfall in loading *vis-a-vis* the slate had resulted in (i) road bridging of products

involving additional expenditure of Rs. 18.08 crores during the period 1980-81 to 1983-84 (which amount was reimbursed to oil companies), (ii) production losses in refineries, (iii) high inventories and (iv) shut down of product pipe lines etc. (Para 1.5.11).

— In the North eastern region the oil companies resorted to crude cuts and road bridging (estimated extra expenditure during 1984-85 in the form of re-imbursement to oil companies—Rs. 3.73 crores) as a regular measure, due to paucity of tank wagons, despite idling of tank wagons in the western sector (Para 1.5.20).

— The Railway's policy to move POL traffic in block rakes (train loads) combined with the hike in tariff had resulted in diversion of traffic to road in petrol, lubricants, bitumen, LPG etc. (Para 1.5.23).

— Though the Ministry of Petroleum and Ministry of Railways were aware even in March 1983 that the transport bottlenecks were major contributory factors in the continued back log on LPG in all the markets in the country, co-ordinated planning was not done to remove the bottlenecks; despite increase of 330 per cent in LPG wagon holdings from 248 in 1981-82 to 852 in 1983-84, the loading on railways increased by 150 per cent only from 1.0 lakh tonne to 1.5 lakh tonnes only. (Paras 1.5.33 & 1.5.29).

— Large scale incidence of sickness, excessive detention to LPG wagons by Indian Oil Corporation (IOC) for degassing and excessive turnround time resulted in poor availability of wagons for loading—out of 852 wagons only 400 were available.

(Para 1.5.33)

(C) Utilisation of tank wagons

— The supply of wagons was in excess of indents, but the loading was less than the supply on account of unsuitability of wagons, defects, wrong placement, etc., these factors entailed unnecessary detention to wagons and at times empty haulage (Paras 1.5.50 & 1.5.41).

— The railways had not streamlined the procedure for examination of tank wagons placed for loading so as to minimise rejections by oil companies after placement (Para 1.5.45).

(D) Productivity of wagons

— The productivity measured in terms of net tonne kilometres per wagon day (pay load carried per day per wagon) had declined, while there was no improvement in turnround (Para 1.5.48).

— The turnround of 12.6 days (BG) in 1983-84 (and eatlier years) was abnormally excessive considering the fact that POL traffic moved in closed circuit and the transit time for a lead of 800 km was around 3 days only (and a total turnround of 7-8 days would have been adequate) (Para 1.5.53).

— The poor turnround was attributable to excessive detentions at loading points, at destination unloading points and in the yards before placement and after removal (Para 1.5.57).

— The daily average number of wagons stabled/idling as surplus had increased from 518 (BG) in 1979 to 2009 (BG) in 1983; similar figures for MG were 150 and 424 respectively (Para 1.5.58).

— Though in an interministerial meeting held in January 1981, it was decided that the Railways and Ministry of Petroleum should jointly review the facilities for long term handling of POL products by rail, the progress made in providing full rake POL sidings so as to avoid detention to wagons was not significant and consequently the abnormal detentions to wagons continued to occur. According to Railways themselves the loss of earnings on account of extra detention is of the order of Rs. 13 lakhs per annum for each unloading point where full rake facility does not exist. There are 32 such points entailing a loss of Rs. 4.16 crores per annum. (Paras 1.5.61 & 1.5.62).

— The detention to tank wagons at railway diesel installations was abnormally high ranging from 1 day to 30 days. (Para 1.6.2 et seq).

— Though, in April 1979, the Railway Board had taken certain policy decisions regarding augmenting storage capacity at diesel sheds, taking supply through pipe line from nearest IOC's depots or taking delivery through road with a view to eliminating the detentions to tank wagons in diesel fuel installations, these were not implemented; on the contrary the decisions were revised from time to time giving up or diluting the earlier decisions. (Paras 1.6.15 to 1.6.19).

— The traffic in non-POL products (requiring use of tank wagons) had not materialised to the extent anticipated. (Para 1.7.1).

— The percentage of ineffective wagons (3.06) could have been brought down further if the

detentions before and after periodical overhaul of tank wagons had been reduced. (Para 1.8.1).

— The charges for cleaning tank wagons were not levied. (Para 1.9.1)

— Lack of co-ordination between railways and oil companies led to unnecessary empty haulage of tank wagons (haulage expenditure Rs. 16.83 lakhs) and idling of newly built wagons. (Paras 1.9.2 & 1.9.3)

— There was a loss of freight of Rs. 3.23 crores on account of incorrect charging of freight. (Para 1.9.5).

CHAPTER II

CONSTRUCTION ACTIVITIES ON RAILWAYS

2. Construction activities on Railways

2.1 The Railways have been spending over rupees one thousand crores every year on the various types of works undertaken by them. A review of some of the major works on different railways showed that these had been executed without ensuring (i) economy in expenditure incurred, (ii) efficiency in administration of the activities involved, and (iii) effectiveness of the objectives sought to be achieved, as brought out in the succeeding paragraphs.

2.2 *Central Railway—Third line on North East Ghat Section between Kasara and Igatpuri*

Justification and planning

The approaches to Bombay area on Central Railway are over two Ghat Sections (i) between Kasara and Igatpuri (14 km) on North East, and (ii) between Karjat and Lonavala (28 km) on South East trunk lines. To meet the growing needs of traffic in and out of Bombay area, the Traffic-cum-Engineering Survey Team recommended (March 1971) provision of a third line adjacent to the existing double line from Kasara to Igatpuri on North East Ghat and Karjat to Lonavala on South East Ghat. Keeping in view the financial constraints and the fact that the two ghat sections were independent of each other, the Railway Board decided (November 1974) that construction of N.E. Ghat line (14 km) should be taken up first. The traffic forecast for the years 1975-76, 1980-81 and 1985-86 were estimated at 29, 54 and 39 paths respectively against the assumed existing capacity of 25 paths per day. The return on investment anticipated was 18.15 per cent with 25 KV AC traction and 17.56 per cent with 1500 VDC traction.

Observations

2.2.2 While framing the justification for the work, the number of 25 paths assumed as the existing capacity per day was incorrect, since the Chief Operating Superintendent (COPS) of the Railway had subsequently found it to be 34 paths per day in May 1981 (before opening of the new line in April 1982). The deflation of the existing line capacity was unduly instrumental in justifying the new line.

2.2.3 The Project at an estimated cost of Rs. 14.77 crores was commenced in July 1975, and was expected to be completed in five years. However, it was actually completed in seven years, and the line was opened to traffic in April 1982. The revised estimate for Rs. 23.26 crores, showing an excess of Rs. 8.49 crores was sanctioned in January 1982. The increase was due to escalation in cost of labour and materials and provision of new items.

2.2.4 The Public Accounts Committee (6th Lok Sabha) in their 135th Report (1978-79) commented upon the poor performance of DC electric locomotives (WCG2) on the Kasara-Igatpuri Ghat Section. The World Bank Team had recommended (January/February 1981) the conversion of the existing DC traction to 25 KV AC traction to increase throughput over this section by using more AC/DC locomotives. The Preliminary Survey Team for this project too had recommended (1972) conversion of the section from DC to AC traction on the grounds of reliability and economy (The cost of OHE installation on DC traction works out to Rs. 2.5 lakhs more per km as compared to AC traction). The conversion of the existing two tracks between Kasara and Igatpuri from DC to AC traction would have resulted in a saving of Rs. 15 lakhs. The construction cost of third ghat line on 25 KV AC instead of 1500 V DC would have brought further saving of Rs. 30 lakhs. This total saving of Rs. 45 lakhs could not be achieved, as it was decided by the Railway Administration (December 1981) to continue with DC traction over Kasara-Igatpuri section.

2.2.5 Final location survey team (1974) had suggested that in case decision was taken in favour of DC traction the construction of tunnels should be with DC profile and not with AC profile. Contrary to this, though the line was wired with DC traction, the tunnels were cut to cater to AC traction with higher clearance by about 18″. This resulted in extra expenditure of Rs. 6.50 lakhs on the additional excavation of 18″ in 6 tunnels.

2.2.6 The Railway Board had decided (February 1972) that the load to be hauled on N.E. Ghat Section should be 1830/2000 tonnes in the down/up direction with one leading WCG2 and two WCG2 locos as bankers (on the up incline) to increase the throughput. In order to achieve this objective, the survey committee had recommended the construction of third line and the following electrical works :—

(a) Increase in the size of the traction conductors on the existing two tracks from 1 sq. inch to 1.5 sq. inch copper conductor, (b) the additional third line to be provided with 1.5 sq. inch section copper conductor, (c) strengthening of power supply by providing 4 new sub-stations at Asangaon, Tambadimal, Omburmali and Thalgat (between Vasind and Kasara) and (d) provision of heavier type of steel stretures to support heavier type of OHE for the new line and replacement of existing strutcures by heavier type on the existing two tracks. These works were estimated to cost Rs. 8.05 crores.

S/20 C & AG/84—4.

2.2.7 The trailing load in down direction had since been fixed at 1600 tonnes even in November 1983, and in up direction it has remained around 1800 tonnes. Thus, the investment of Rs. 8.05 crores has not led to increase in the throughput, as expected.

2.2.8 A comparison of the number of goods trains/loads moved during three years prior to opening of the third line in April 1982 with that in the subsequent period from April 1982 to September 1983 showed that there was no significant improvement in the quantum of traffic carried subsequently (Annexure I).

2.2.9 The line capacity can be enhanced by increasing the speed of goods trains. However, in the present case, in spite of power supply having been augmented by installation of heavier steel structures/OHE and construction of four new sub-stations, the speed of goods trains remained the same, as indicated below :—

Year	Speed
1979-80	18.9 Kmph
1980-81	18.6 Kmph
1981-82	17.4 Kmph
1982-83	18.2 kmph
1983-84	18.2 kmph

2.2.10 Under the rationalisation scheme introduced from April 1982, block loads of bitumen, fertilizers etc. from Bombay Port Trust stations and Wadi Bunder Depot to destination stations beyond Bhusawal were booked and routed *via* Bandra Marshalling Yard-Surat-Jalgaon on Western Railway. Similarly, up traffic of steel, coal, cement etc. in rake loads from stations on Eastern and South Eastern Railways to destinations in Bombay area was also being booked and routed *via* Jalgaon-Surat-Bandra Marshalling Yards on Western Railway. This avoided movement along Kasara-Igatpuri Ghat section on Central Railway in both the directions. The main reason for the diversion *via* Western Railway route which is longer by 150 km. was to avoid breaking of the rakes over the Ghat section due to load constraint of 1600 tonnes, and non-availability of locos capable of hauling higher loads. In consequence, the North East Ghat Section was divested of even the traffic that had been moving along this section before the addition of the third line in April 1982.

2.2.11 Thus, the new line constructed at a cost of over Rs. 23 crores failed to yield the benefits expected of it.

The Ministry of Railways (Railway Board) stated (February 1985) that the rationalisation scheme of April 1982 had been withdrawn with effect from April 1984, thereby restoring the position obtaining prior to April 1982. Evidently, the rationalisation scheme of April 1982 was not well thought of and contributed to under utilisation of line capacity.

Execution

2.2.12 In the course of execution of the work the Railway Administration changed (December 1975) the alignment without conducting detailed analysis of the consequential additions to the quantities of earth work and the cost thereof. This resulted in extra expenditure of Rs. 19.84 lakhs on account of steep increase in the volume of earth work and excavation in cuttings. Though the said change in the alignment involved financial implications of magnitude, the concurrence of the Associate Finance was not obtained.

Observations

2.2.13 The earth work and construction of bridges in section 1-A included many items of excavation in cuttings in the mountainous terrain. Since the rate of hard rock excavation is always known to be substantially more than that of soft rock excavation, it was imperative to have soil classification done during survey in order to guard against any risk inherent in adopting through rates (uniform rate for all types of soils). In 1972, the Conference of the Railway Chief Engineers had also cautioned against acceptance of through rate in such cases. Contrary to all this, soil classification was not done by the Administration and tenders were invited on the basis of through rates estimated arbitrarily. The lowest tenderer offered two alternative rates (i) 90.5 per cent above master schedule of rates of 1976 taking into account different soil classifications (total value : Rs. 24.12 lakhs) and (ii) a through rate of Rs. 230 per 10 M^3 in lieu of all items (total value : Rs. 23.47 lakhs). The tender committee recommended acceptance of the through rate which was stated to be cheaper by Rs. 65 thousand. However, valuation of the final quantities of excavation in cutting showed that the rate of 90.5 per cent above master schedule of rates was cheaper than the through rate by Rs. 4.48 lakhs. Had the soil classification been done in the first instance and tenders invited accordingly, the Administration would not have been put to this extra expenditure of Rs. 4.48 lakhs.

2.3 *Eastern Railway—Karaila Road—Jayant Project Justification*

2.3.1 The Central Coalfields Limited (CCL) requested (1974) the Railway Board to conduct a survey of deposit work for construction of Railway line for dispersal of coal from the Singrauli Coalfields to the nearby power station, *i.e.*, Obra, and also others situated in distant places of Northern and Western India. However, Railway Board in consultation with the Planning Commission, decided (June 1976) to undertake this project as a Railway work chargeable to Capital (instead of a deposit work chargeable to CCL), holding that the line would be financially remunerative. Initially the return from the project was estimated at 1.76 per cent on the basis of the traffic lead upto Chopan. (Terminus station on Eastern Railway), but subsequently, without making any detailed calculations, it was presumed that the scheme would be remunerative yielding more than 10 per cent return on the basis of the lead of traffic upto destination points on the Northern Railway beyond Chopan.

Observations

Against the estimated daily loadings of 678 and 857 wagons from Jayant and Bina mines to Obra Thermal Power Station during the years 1981-82 and 1982-83, the actual loading was 186 and 223 wagons respectively. This accounted for loss of freight to

the extent of Rs. 6.11 lakhs and Rs. 7.88 lakhs per day during the said years. Besides, as against the Railway Administration's assumption of 6 lakh tonnes of coal being moved to Northern India beyond Chopan during 1983-84, only 2.23 lakh tonnes (5 per cent of total traffic) were actually booked to Bhatinda on Northern Railway. The remaining traffic of 42.53 lakh tonnes (95 per cent of total traffic) was booked to Obra Thermal Power Station.

Planning

2.3.3 The final location survey (F.L.S.) conducted in January 1977 contemplated construction of line from Mirchadhuri to Jayant over a distance of 36.5 km. In March 1977, Railway Board approved an alternative alignment with tunnel (KM 7.9) this being shorter by 3 km. and cheaper by Rs. 1 crore. However, during execution the Railway Administration adopted a revised alignment with the take off point from Karaila Road on the plea that it would reduce the length by 2 km. and result in saving of Rs. 2 crores. But actually the revised alignment had to go over an extra lead of 2 km. with a U turn. Further, this alignment passed through heavily fissured feldspar type of rocky sections which required deep cuttings. Despite the Railway Board's pointing out that construction of tunnel would be much cheaper than that of deep cutting the Administration went ahead with open cutting which proved to be a failure in sections IV and V of the line. During August/September 1982 heavy slips occurred at least on 10 days involving debris of 4620 M^3. To protect the line from slicing down of cutting and developing of cracks in the sidewalls, the Administration now proposes to undertake the method of cut and cover tunnel at an extra cost of over Rs. 72 lakhs. The revised alignment, thus, not only retarded the progress of work in sections IV and V, but also led to other problems such as protection arrangements for Railway track under aerial rope-way of Renu Sagar and removal of high tension line etc.

Observations

2.3.4 This shows that the project had not been planned properly.

2.3.5 The total requirement of land for the project was estimated at 1263 acres in U.P. and 332 acres in M.P. The Railway Administration deposited Rs. 56.71 lakhs for 1430 acres with the U.P. Government and Rs. 6.62 lakhs for 332 acres with the M.P. Government. Thus, the Administration deposited over Rs. 6 lakhs for 167.00 acres of land with the U.P. Government in excess of their requirements. The reason for the excess deposit have not been recorded by the Railway Administration. In order to expedite actual acquisition of the land, the Railway Administration hired the services of a land acquisition officer on deputation terms at an approximate cost of Rs. 6 lakhs. As recommended by U.P. Government, the Railway Administration was required to make ex-gratia payment to the villagers at the rate of Rs. 1 thousand per acre over and above the cost of compensation at the rate of Rs. 3500 per acre. The Railway Board did not, however, agree to the ex-gratia payment at the outset, and agreed to it only after a lapse of more than one year.

Observations

2.3.6 Though the project had been started under urgency certificate and a land acquisition officer specially appointed at a cost of Rs. 6 lakhs for speedy acquisition of land, the lack of prompt decision on the part of Railway Board for over a year (July 1979 to October 1980) in regard to the ex-gratia payments aggregating to only Rs. 2.5 lakhs, delayed the execution of the project correspondingly.

2.3.7 The rates for earthwork in embankment by borrowing earth from outside Railway land *vis-a-vis* from Railway land showed the following wide difference :—

	Quantity required (M^3)	Rate per 10M^3 (Rs.)
(a) From Railway land	30,03,198	87
(b) From other than Railway land	4,50,000	130

Thus, the cost of earthwork in embankment by borrowing earth from outside Railway land was higher than that from Railway land by Rs. 19.35 lakhs. The cost of 1762 acres of land purchased for the project worked out to Rs. 65.33 lakhs whereas the extra expenditure on earth borrowed from outside Railway land came to Rs. 19.35 lakhs.

Observations

2.3.8 The Administration could have obviously reduced the expenditure by acquisition of more land to borrow earth from its own land in the concerned chainages. Comparative economics of acquisition of land for borrowing earth *vis-a-vis* bought out earth were not examined.

Execution

2.3.9 The construction estimate of the project was sanctioned (1977-78) for Rs. 16.56 crores. This was revised (1979-80) to Rs. 23.20 crores, registering an increase of 40 per cent (Rs. 6.64 crores). The work was commenced in June 1977, and was targetted to be completed by March 1980. However, the target dates were first revised to May 1981 for Phase I and March 1983 for Phase II, which were further revised to October 1982 for Phase I and June 1983 for Phase II and again revised to December 1983 for both Phase I and Phase II.

Observations

2.3.10 The physical progress to the end of January 1984 was 98.1 per cent. In consequence, the completion of the work has been delaved for over four years.

2.3.11 Thus, there were both time and cost over runs in the execution of this work. These were mainly attributable to delay in acquisition of land, changes in alignment, adoption of the method of open cutting instead of tunnelling in feldspar type of rocks known

to be prone to heavy fissures, resulting in developments of cracks/slicing down of cuttings and provision of double line in certain sections—a departure from the original scheme of constructing the line on single line basis, etc.

2.3.12 According to the latest indications, the very purpose for which this project was mooted may not be achieved. The remunerativeness of the project had been justified on the basis that the coal from Jayant and Bina mines would be carried to distant power houses in Northern and Western India. However, in the meantime, six power generating stations are coming up in Singrauli Coalfields area itself. The entire coal produced by Jayant and Bina mines is likely to be consumed by the power stations, needing reduced transport to the distant power houses. Consequently, the benefit of long lead for transportation of coal will not be available to the Railways. As an alternative, the Railway Administration is now exploring the possibility of utilising this line for transporting construction material and Furnace Oil to the power stations which are coming up in Singrauli Coalfield area, and also for the carriage of passenger traffic in the area. The probable traffic on this account is not considered to be continuous and sizeable, as construction material may be carried only during the construction period of Power Houses, and there may be little prospect of passenger traffic in this sparsely populated area.

2.3.13 Accordingly, the new line constructed at a cost of Rs. 23.20 crores is not likely to be remunerative, as anticipated.

2.4 *Northern Railway*

Bhatinda-Hanumangarh—Suratgarh Conversion Project

2.4.1 Land measuring 3,40,214 sq. yards at Suratgarh and 1,28,260 sq. yards at Hanumangarh was purchased by Railway Administration in 1977 at a total cost of Rs. 52.48 lakhs. Of this, Rs. 35.63 lakhs were paid in 1977 and Rs. 16.85 lakhs in September 1982. Due to delayed part-payment in September 1982 the state authorities have demanded interest at the rate of 12 per cent amounting to Rs. 11.01 lakhs. The payment is yet to be made.

Observations

2.4.2 The Railway Administration's failure to make payment in time resulted in incurrence of extra liability of over Rs. 11 lakhs. This would push up capital structure of the railway with antecedent dividend liability year after year.

2.4.3 Steel (S. M. Rounds and Tor Steel of various sections) weighing 18614.5 kg. and valued at Rs. 93 thousand was found short during handing over and taking over charge of the post of Inspector of Works, Suratgarh in September/November 1981. The previous incumbent of the post was promoted as Assistant Engineer in March 1981, took over charge of the higher post on 18th May 1981 and was sent on training from 21st May to 8th July 1981, but did not make over complete charge of the railway material held in his custody earlier as the Inspector of works. Disciplinary action against the defaulting staff has not been finalised even after a lapse of more than three years.

Observations

2.4.4 It was wrong on the part of the Railway Administration to have relieved the official for training before he handed over charge of the material held in his custody.

2.4.5 Besides, the following irregularities were noticed in the case of other works :

(i) In case of 10 deposit works undertaken by Northern Railway on behalf of other parties/Government Departments, the Railway dues aggregated to Rs. 2.77 crores as on 31st December 1983. The outstanding had arisen as a result of Railway Administration's failure to observe codal provisions for advance deposits/acceptance by the parties/Government Departments concerned. The Ministry of Raliways (Railway Board) stated (February 1985) that the outstandings had been reduced to Rs. 23.52 lakhs (Annexure VII).

(ii) As per extant rules and orders, repairs and maintenance charges @4½ per cent per annum are recoverable from the date of completion of works undertaken by the Railway on behalf of others. However, in the case of 17 works these charges have not been recovered from the parties concerned, due to non-execution of agreements and consequential delay in billing. The railway dues on this account aggregated to Rs. 1.83 crores as on 31st December 1983. The Ministry of Railways (Railway Board) stated (February 1985) that the outstandings had been reduced to Rs. 87.46 lakhs (Annexure VIII).

(iii) Though the work on the under-noted projects had been physically completed in the years 1981 and 1980 respectively, materials worth Rs. 1.55 crores were lying at the site of the works as on 31st December 1983.

(1) Doubling (Ghaziabad-Muradnagar)	Rs. 0.37 crore
(2) Shahdara-Saharanpur Broad gauge line project	Rs. 1.18 crores
	Rs. 1.55 crores

The Ministry of Railways (Railway Board) stated (February 1985) that materials (cement and steel) worth Rs. 24 lakhs had since been consumed, and the remaining materials would also be used.

2.5 *North Eastern Railway—Samastipur-Barabanki-Lucknow conversion (Metre gauge to Broad gauge) Project*

2.5.1 The project was sanctioned in April 1972 at an estimated cost of Rs. 46.35 crores and completed upto Barabanki (587 km.) in July 1981 and later upto Lucknow (20 km.) in January 1984 at an estimated cost of Rs. 125.88 crores.

Justification

2.5.2 The main objectives, expected to be achieved with the completion of this project were (i) economy in the cost of Broad Gauge operation, (ii) reduction in the cost of operation at the break-of-gauge transhipment points, (iii) detention of wagons at transhipment points would be minimised, (iv) investment on development of M. G. line/transhipment capacity to cope with anticipated increase in traffic would be avoided, (v) Traffic would be speeded up due to higher speed of B. G. trains, (vi) overall efficiency of operation would be higher, and (vii) more traffic would be attracted as a result of elimination of the transhipment.

Observations

2.5.3 However, these objectives have not by and large, materialised, as indicated below :—

(a) While no separate figures of operation costs on Samastipur-Barabanki-Lucknow line before and after conversion could be furnished by the Railway Administration for comparative evaluation, no improvement in the financial position of North Eastern Railway as a whole was discernible after conversion of this line from M.G. to B.G.

The amount of deficit on the Railways as a whole increased from Rs. 26.20 crores in the year 1978-79 to Rs. 84.41 crores in 1982-83 (figures for 1983-84 not yet compiled by the Railway Administration).

(b) Prior to conversion of the route there were two major transhipment yards at Garhara and Manduadih. While Manduadih transhipment yard was closed from August 1982, Garhara transhipment yard still exists. Besides, after conversion, transhipment facilities have been created at one more point *viz.* Gonda (July 1982). Thus, the project has not yielded the anticipated objective of eliminating the transhipment points.

(c) As regards elimination of detention to wagons at transhipment points, the Railway Administration has not published data for Muzaffarpur and Gonda in its Domestic Statistics. In the case of Garhara Transhipment point, the detention has not been minimized as expected (Annexure IX).

(d) No significant increase in speed on BG has been achieved, as seen from the following figures :—

Average speed per hour of B.G. goods trains in 1982-83		Average speed per hour of M.G. goods trains in 1982-83	
Steam	Diesel	Steam	Diesel
8.8 Kms.	16.5 Kms.	8.7 Kms.	15.5 Kms.

(e) There was no general improvement in operating efficiency of the railway (except in respect of goods originating) as indicated below :—

Particulars	1981-82 (BG)	1982-83 (BG)	Percentage increase(+) decrease (—)
1. Vehicle Kilometre per vehicle day			
(a) Passenger . . .	235	171	(—)27.23
(b) Goods . . .	393	235	(—)40.29
2. Net tonne Kms. per goods locomotive day in use	18,953	10,310	(—)45.60
3. Engine Kilometre per goods engine on line .	44	41	(—)06.82
4. Passenger originating (in thousands) (BG) .	22,988	22,605	(—)01.67
5. Goods originating (in thousand tonnes) (BG)	248	599	(+)125.40

Planning and Execution

2.5.4 The work was commenced in 1973 without final location survey and finalisation of plans for bridges/yards as required under the rules. In consequence, as many as 22 material modifications involving total estimated cost of Rs. 17.38 crores had to be made in the course of execution of the work, causing delays varying from 9 months to 6 years. The line from Samastipur to Barabanki was finally opened to traffic in July 1981, *i.e.* more than five years after the target date of March 1976.

Observations

2.5.5 The delay in execution of the project resulted in heavy cost escalation to the extent of Rs. 79.53 crores (171 per cent) over the original estimated cost of Rs. 46.35 crores.

2.5.6 No provision for B.G. rolling stock had been made in the project estimate. Consequently, North Eastern Railway had not been allotted any B.G. Steam/Diesel locos/carriages and wagons upto March 1984 and these had to be obtained on loan from other Railways. The position of rolling stock required and that was actually available as indicated below :—

Requirement of rolling stock	Actually available as on 31-3-1982			Actually available as on 31-3-1983			Short-fall 1981-82	Short-fall 1982-83
	Steam	Diesel	Total	Steam	Diesel	Total		
1	2	3	4	5	6	7	8	9	10
Engines	115	98	..	98	92	25	117	17	..
Coaches	361	..	..	273	..	..	383	88	..
Wagons	4625	..	..	..	..	..	..	4625	4625

2.5.7 No B.G. Workshop facilities have been created on North Eastern Railway so far (June 1984). As a result B.G. locos and coaches had to be sent to other Railway workshops, for periodical overheads etc. involving avoidable haulage cost (The exact amount of extra expenditure on this account could not be determined, as the relevant data were not made available by the Administration).

This is indicative of lack of proper planning and estimation.

2.5.8 Out of the total length of 607 Km. from Samastipur to Lucknow, the sectional length of 587 Km. from Samastipur to Barabanki (96.7 per cent of the work) was completed and opened for passenger traffic in July 1981. The remaining length of 20 Km. from Barabanki to Lucknow (3.3 per cent of the work) was completed and opened for passenger traffic in January 1984. Thus, while 96.7 per cent of the work was completed in eight years (1973 to July 1981), the remaining 3.3 per cent of the work took disproportionately long period of 2½ years (July 1981 to January 1984) to be completed. In the meantime, the same number of staff and rather more at times, continued to be employed on the project, as indicated below :—

Year	Actual expenditure on work	No. of Staff	Establishment cost
1980-81	Rs. 2425 lakhs	664	Rs. 80 lakhs
1981-82	Rs. 1181 lakhs	783	Rs. 86 lakhs
1982-83	Rs. 1453 lakhs	740	Rs. 87 lakhs
1983-84	(Figures not yet compiled by the Administration).		

2.5.9 Judged in the above context, the work on the latter part of the project could reasonably be expected to have been completed by the end of 1981-82. This shows that the expenditure of Rs. 87 lakhs incurred on deployment of staff during 1982-83 was largely avoidable. The fact that even though the works expenditure during 1981-82 and 1982-83 was nearly half of that in 1980-81 the establishment cost in these years happened to be more, is also a pointer in that direction. This is further corroborated by the following specific instances of unnecessary expenditure :

(i) The line from Sonepur to Barabanki was opened to B.G. traffic during February 1981 to July 1981, but all the labour rendered surplus was not retrenched. A sample check by Audit of the accounts of two field executive Engineers revealed that while at Chhupra avoidable expenditure of Rs. 5.63 lakhs was incurred on surplus labour during the period from 16th July 1981 to 15th January 1984, similar expenditure incurred at Gorakhpur during the period 16th April 1982 to 15th October 1983 was Rs. 31.93 lakhs.

(ii) Although the section Sonepur—Barabanki (475 Km.) was opened for BG traffic during the period February 1981 to July 1981, decision for stocking the scattered released materials for disposal in accordance with the release orders was taken about 2 years thereafter *i.e.* in January 1983. This decision has also not been implemented so far (June 1984). As a consequence, substantial avoidable expenditure had to be incurred on wages of Chowkidars employed for keeping a watch on the scattered materials. A sample review of the accounts of two Executive Engineers revealed that Rs. 6.69 lakhs and Rs. 7.40 lakhs had been spent on this account at Chhupra and Gonda during July 1981 to March 1984 and January 1982 to October 1983 respectively. Besides, considering the M.G. rails are no longer being rolled by Indian Iron & Steel Company (IISCO) and Tata Iron & Steel Company (TISCO) and have to be imported from abroad, the need for quick dispersal of the M.G. rails released from this project of 475 Km. length could hardly be over emphasized. The rails, having been released from a trunk route, would obviously be in a good condition, capable of being utilized for M.G. track renewals elsewhere.

(iii) 12 crossing stations on the converted Samastipur-Barabanki route were downgraded to non-crossing stations resulting in staff posted at these stations becoming surplus. The surrender of the surplus staff was delayed by 13 to 17 months resulting in unnecessary expenditure of Rs. 14.80 lakhs on their pay and allowances.

2.5.10 Although the M.G. trunk route Samastipur-Lucknow (607 Km.) was converted into B.G., the M.G. sidings provided to factories/godowns for outward/inward traffic were not converted into B.G. A sample survey by audit of non-conversion/delay in conversion of a few sidings revealed diversion of substantial traffic to road and consequential loss of earnings to the extent of Rs. 1 crore approximately during two years of post conversion period.

2.6 *North-east Frontier Railway*

Establishment cost

2.6.1 The cost of construction organisation on North-east Frontier Railway, the expenditure on works undertaken by it, and the percentage of the former to the latter during last few years are indicated below :—

Year	Cost of construction Organisation	Expenditure incurred on works	Percentage of column (2) to (3)
(1)	(2)	(3)	(4)
	(Figures in thousands of rupees)		
1981-82	12090	214478	5.63
1982-83	18393	186198	9.87
1983-84	26509	198767	13.33

Observations

2.6.2 It is seen that the establishment charges have been increasing disproportionately to the works expenditure over the years. The disproportionate increase in the establishment charges vis-a-vis works expenditure is apparently due to the slow progress in the execution of a number of works undertaken (1978-79) by the Construction Organisation, as indicated below :—

Sl. No.	Name of work	Target date	Actual Progress (November, 1984
			Per cent
1.	Construction of a B.G. line (27 Km.) from Gauhati to Bunnihat (Meghalaya)	not fixed	1
2.	Construction of M.G. line (15 Km.) from Amguri to Tuli (Nagaland) .	1986	11
3.	Construction of a M.G. line (48 Km.) from Lala bazar to Bhairabi (Mizoram)	1986	23
4.	Construction of a M.G. line (49 Km.) from Silchar to Jiribam (Manipur)	1986	23
5.	Construction of a M.G. line (33 Km.) from Dharamnagar to Kumarghat (Tripura)	1986	34
6.	Construction of a M.G. line (35 Km.) from Balipara to Bhalukpung (Arunachal Pradesh) . . .	1986	28

2.6.3 In the case of item 1 above the State Government of Meghalaya are still to decide about the location of the Railway line in their area. In other cases, (except item No. 5) gross delay in handing over land by the State Governments to the Railway Administration, has delayed the work.

2.6.4 However, in-depth analysis of the reasons for disproportionate increase in the establishment cost of the construction organisation is yet to be made by the Railway Administration (December 1984).

Construction of a broad gauge (BG) line from New Bongaigaon to Gauhati (164 km.)

Planning and Execution

2.6.5 With a view to extend the benefits of broad gauge (BG) system to Bongaigaon-Rangiya-Gauhati metre gauge (MG) section, the Ministry of Railways (Railway Board) sanctioned preliminary engineering-cum-traffic survey for this work in October 1968. The survey report (January 1970) contained the following three alternatives—

(i) Provision of B.G. line between New Bongaigaon and Gauhati with dismantling of the existing M.G. line.

(ii) Provision of B.G. line in addition to the existing M.G. line between New Bongaigaon and Gauhati.

(iii) Provision of B.G. line between New Bongaigaon and Gauhati with dismantling of the existing M.G. line between New Bongaigaon and Rangiya.

2.6.6 Ministry of Railways (Railway Board) decided (May 1975) to construct B.G. line parallel to existing M.G. line for a part of the section from Rangiya to Gauhati. In May 1977, Ministry of Railways (Railway Board) ordered fresh traffic appraisal survey to enable them to take a decision on withdrawal or retention of M.G. line between New Bongaigaon and Rangiya.

The Ministry of Railways (Railway Board) decided in February 1979, to retain the existing M.G. line after construction of New B.G. line from New Bongaigaon to Rangiya subject to a review five years after the date of opening of the new B.G. line.

Observations

2.6.7 Thus, there was delay of 7 to 11 years in deciding whether the existing M.G. line should be converted into B.G. or B.G. line should be constructed in addition to the existing M.G. line by retaining the latter. As a result, the cost of the work rose from Rs. 35.36 crores in 1976 to Rs. 50.66 crores in September 1981 and Rs. 71 crores in 1984 (more than 100 per cent increase over the original estimate). The line was opened to passenger traffic (only one train *i.e.*, Tinsukia Mail, running between New Delhi and Gauhati) on 24th April 1984. In the meantime, the Railway also lost earnings which could have accrued if the work had been completed by 1972-73, as envisaged in the Survey Report. The loss on this account is estimated at Rs. 4 crores (Annexure X) over the period 1973-74 to 1983-84.

2.7 *Southern Railway*

Cost of construction organisation

2.7.1 The cost of Construction Organisation (excluding direct labour) on Southern Railway, the

expenditure incurred on works undertaken by it, and the percentage of the former to the latter during last five years are indicated below :—

Year	Cost uf Construction organisation	Expenditure incurred on works	Percentage of Column 2 to 3
1	2	3	4
	(Figures in Thousands of rupees)		
1979-80	2,76,45	22,21,87	12.44
1980-81	3,19,25	19,18,97	16.64
1981-82	3,38,01	33,75,79	10.01
1982-83	3,88,20	46,77,54	8.30
1983-84	4,78,78	57,45,03	8.33

Observations

2.7.2 The percentage of general establishment charges to the works expenditure, during the years 1979-80 to 1981-82, varied from 10.01 per cent to 16.64 per cent as against the norm of 8.5 per cent prescribed by Ministry of Railways (Railway Board). The extra expenditure on this account aggregated to Rs. 2.95 crores (Rs. 83 lakhs in 1979-80, Rs. 156 lakhs in 1980-81 and Rs. 51 lakhs in 1981-82).

Karur-Dindigul-Madurai-Tuticorin-Tirunelveli Broad Gauge Project

Planning

2.7.3 In July 1981 the Railway Board sanctioned an Urgency Certificate for Rs. 50 lakhs for the commencement of work on Karur-Dindigul-Madurai-Tuticorin-Tirunelveli Broad Gauge Project costing Rs. 44.85 crores, expected to yield a return of 22.64 per cent. The estimate for Stage I of Phase I of the Project, viz., parallel Broad Gauge line from Maniyachi to Talaiyuthu and from Maniyachi to Tuticorin, was sent to the Railway Board in April 1982. The estimate showed an excess of Rs. 408 lakhs (61 per cent) over the earlier assessment of Rs. 665 lakhs. The large variations were explained as mainly due to escalation in cost and increase in quantities, the more noticeable being in the case of earth work in formation (213 per cent), underground electrical cables (255 per cent) and terminal facilities (149 per cent).

Observations

2.7.4 Viewed in the above context, the return as initially expected of the project is likely to be affected adversely.

2.7.5 Tenders were called for eight reaches in respect of stage I of the project in July/September 1981, long before the results of the Final Location Survey became known in March 1982. In consequence, the following charges had to be made during execution of work :—

(a) Ballast retainig walls' toe-walls were constructed;

(b) RCC Box culverts in lieu of slab bridges;

(c) Only widening of bridges was resorted to at certain locations instead of constructing new bridges; and

(d) Change of alignment from left to right between Maniyachi and Tuticorin.

2.7.6 This shows that the site conditions were not thoroughly investigated, and plans/drawings not finalised before call of tenders.

Execution and performance

2.7.7 The contract work was not completed by April 1983 as originally planned.

Observations

2.7.8 Extensions had been granted for departmental reasons (like shortage of cement; speed restrictions not given; non-shifting of signal wires, etc., which indicate lack of planning and co-ordination) as also for reasons not connected with the Railway (such as Managing Director of contracting firm having met with an accident; delay in organising work by contractors, etc.). Even in the latter cases the Administation had certified "no loss" on account of extensions and no penalty had been levied on the contractors.

The Administration stated that extensions were granted to the contractors due to inadequate allotment of funds for this project during 1982-83 and 1983-84.

2.7.9 Though sub-ballast had been laid in Reaches I to VI by September 1983 and sufficient permanent way stores were available, no agency was fixed for linking of track till February/June 1984, resulting in undue delay in completion of the work.

2.7.10 The Railway Board sanctioned (June 1984) the estimate for stage I for Rs. 1190.28 lakhs (against Rs. 1073 lakhs as estimated by the Administration in April 1982). The physical progress achieved so far is only 48 per cent (December 1984), while the target fixed for completion of work on stage I by the Railway Administration is December 1984 and that for completion of work on the entire project is December 1987. The Railway Board have not fixed so far any target date for the completion of this project. In the circumstances, no assessment of the possible date for completion of the project is feasible. One effect of the delay in completion of the project would be that the costlier M.G. operations (operating ratio during 1982-83 being 152) will continue for many more years. At the same time, the B.G. traffic will have to follow the round-about route via Trivandrum and Tirunelveli entailing extra Kilometerage per trip, which will act as disincentive for Rail users.

2.7.11 Prior to commencement of work on this project, the Railway Board had in April 1980 approved the laying of a broad gauge line between Tirunelveli Junction and Talaiyuthu (6 kms.) as a traffic facility at an estimated cost of Rs. 50 lakhs, to cater to the cement traffic from a factory located at Talaiyuthu. The line was expected to give a return of 12 per cent on the basis of anticipated additional 1.16 lakh

tonnes of cement traffic, saving in M G. operation and avoidance of detention to wagons. After the sanction of the Karur-Dindigul-Madurai-Tuticorin-Tirunelveli broad gauge project, this line was treated as forming part of the main line from Tirunelveli to Tuticorin, necessitating the upgrading of the standards of the track signalling, etc. to main line standards. A revised estimate was accordingly sent to the Railway Board in September 1982 for Rs. 99.40 lakhs (an increase of Rs. 49.40 lakhs over the original estimate) and was sanctioned in September 1983. But this estimate too did not cater to the full requirement, as for instance in the case of Electrical Branch estimated to cost Rs. 85,000 provision of only Rs. 20,000 had been made. Though this work had been treated as distinct from the main project, the return on its increased cost had not, however, been worked out. The line was completed and opened to traffic in April 1983. But even after a year, the anticipated increase in traffic had not materialised and savings from elimination of M.G. operation not realised, as the cement factory continues to get the bulk of its inward traffic through the Metre Gauge system. While the outward traffic in 1979-80 was 3.51 lakh tonnes, it was only 1.94 lakh tonnes during 1983-84 for both M.G and B.G. put together. Further, because of the failure of the Administration to notify the B.G. route for inward coal traffic originating in Eastern, South Eastern, Central and South Central Railways as a rationalised (chargeable route), not only did the Administration lose the additional revenue of Rs. 15.13 lakhs for the period from April 1983 to March 1984 but also did not achieve the savings as anticipated by the avoidance of M.G. operation and detention to wagons to the extent anticipated.

2.7.12 Thus, a line initially conceived for carrying traffic of a particular cement factory and constructed at a cost of over Rs. 1 crore, has not succeeded in capturing the traffic as anticipated.

Renigunta-Guntakal patch doubling works—Phase II

Justification

2.7.13 Iron ore from the mining areas around Bellary-Hospet is carried to Madras harbour via Renigunta-Guntakal Section. Five patch doubling works, three in Phase I (69.15 km) and two in Phase II (47.34 km.) were sanctioned in March 1973 and October 1974 at an estimated cost of Rs. 653 lakhs and Rs. 501 lakhs respectively, with a view to create extra line capacity for meeting the anticipated iron ore traffic of 3 million tonnes by 1972-73 and additional 2 million tonnes by 1975. This was subsequently modified as 4.2 million tonnes expected to be reached by 1976-77.

Observations

2.7.14 The project planned and programmed from 1972 onwards is still in progress even after a lapse of 12 years. While more than Rs. 12 crores have already been spent, and about Rs. 4 crores are likely to be spent further to complete the work, there is little prospect of iron ore traffic materialising as anticipated. The actual traffc even in 1983-84 is only 3 million tonnes against the anticipation of 4.2 million tonnes by 1976-77.

2.7.15 Thus, the investment of over Rs. 16 crores is not likely to serve the purpose intended of it.

Execution

2.7.16 Phase II of the project consisted of the following two works :—

(i) Gooty—Rayalacheruvu (23.65 km.).

(ii) Kondapuram—Muddanuru (23.69 km.) with a new crossing station.

2.7.17 The first work is expected to be completed by December 1984. The overall progress in the case of the second work was 49 per cent at the end of July 1984.

Observations

2.7.18 The cost of these works was revised from Rs. 501 lakhs in October 1974 to Rs. 1123 lakhs in February 1984. The steep rise in cost was, *inter alia,* due to provision of additional works (Rs. 52 lakhs), new items (Rs. 33 lakhs for axle counters added by Signal Department), staff quarters (Rs. 7 lakhs) and two new crossing stations (Rs. 11.44 lakhs).

2.7.19 Repeated extensions both on Railway's and contractor's account resulted in delayed execution of works and consequential increase in costs (not quantified).

2.7.20 In reach I of 'Muddanuru—Kondapuram section', 10,700 cum of earthwork required for temporary diversion due to re-construction of a bridge was not included in the estimate.

2.7.21 According to the Railway Administration the variations were due to the following reasons :—

(a) Original schedule was prepared in an urgency.

(b) Shortfall in borrow pits was due to presence of rock not anticipated at tender stage.

(c) Yard/bridge plans had not been finalised at the time of calling tenders.

(d) Tenders were invited on tentative plans.

2.7.22 This shows that the preliminary work required to be completed by the Administration before invitation of tenders, had not been done as required under the extant rules and orders.

Provision of suburban terminal facilities at Madras

2.7.23 The Ministry of Railways (Railway Board) sanctioned (July 1979) provision of a separate suburban terminal (including a temporary concourse) at

an estimated cost of Rs. 141 lakhs at Moore Market, Madras so that Madras Central station could be left to deal with long distance trains only. The work was commenced in August 1979 and the terminal was commissioned in October 1981 (against the target date of August 1980). The Ministry of Railways (Railway Board) sanctioned (December 1983) revised estimate for Rs. 241 lakhs, showing an excess of Rs. 100 lakhs over the original estimate. This excess was mainly due to (i) provision of a permanent concourse at a cost of Rs. 36 lakhs (against earlier allocation of Rs. 3 lakhs for a temporary concourse), (ii) provision of enlarged facilities under 'Sheds and Offices' at a cost of Rs. 22 lakhs (against earlier allocation of Rs. 3 lakhs for 'sheds and offices' (iii) more provision for temporary establishment, office tools and plant to the extent of Rs. 9 lakhs, (iv) increase in the length of permanent way and the number of points and crossings due to revised requirements given by the Operating Department for proper flexibility in working, (v) increase in the length of the platform by 50 metres on either side, (vi) increase in waterways and other modifications found necessary in bridge work due to site conditions, (vii) provision of a static tank for fire fighting, (viii) construction of a relay and battery room and a glazed partition for a sound proof room of the announcer, (ix) provision of a separate electric substation, and (x) general increase in cost of labour/material.

Observations

2.7.24 The magnitude (Rs. 1 crore) of the additions and alterations made in the scope of the work suggested that the initial estimate was either not workable or it had been unduly deflated. In either case it is indicative of defective planning or wrong estimation.

2.7.25 The two lines released from the suburban traffic at Madras Central station are at present being utilised for parcel traffic only. Thus, the avowed object of this station dealing with long distance trains only has not materialised as anticipated. According to the Railway Administration it had not been possible to introduce these trains for want of rolling stock.

2.7.26 The work on the permanent concourse was commenced in November 1981, and was scheduled to be completed by May 1982. However, four extensions (upto 31st December 1983) were granted on departmental account (site not readily available—design not finalised, additional works provided subsequently and changes made in colour design to suit local environments). The concourse was completed in January 1984 and brought into use in June 1984.

2.7.27 The investment of Rs. 36 lakhs on a permanent concourse in substitution of a temporary concourse costing only Rs. 3 lakhs is not considered to be judicious and justified, as the crowds of commuters dissipate on arrival, and the vast circulating area that has been provided is of little practical use. No such provision has been made anywhere else on the Indian Railways. The Railway Administration's contention that subsequent to the proposal of a temporary concourse additional land had become available for constructing a permanent concourse, is hardly tenable, since availability of land alone cannot obviously be taken as a deciding factor for an investment of Rs. 36 lakhs.

2.8 *South Central Railway—Construction of a new broad gauge line between Bibinagar and Nadikudi*

Justification

2.8.1 In pursuance of the policy of providing rail link in economically backward areas, the Railway Administration prepared (September 1970) an abstract estimate of Rs. 20.13 crores for construction of a new broad gauge (BG) line (148 km) from Bibinagar on Hyderabad-Kazipet B.G. section to Nadikudi on Macherla-Guntur metre gauge (MG) section (estimated cost : Rs. 12.52 crores), and for conversion of Macherla-Guntur section (130 km) from M.G. to B.G. (estimated cost : Rs. 7.61 crores). The work on construction of new B.G. line from Bibinagar to Nadikudi was divided in two phases—Phase I from Bibinagar to Nalgonda (76 km) and Phase II from Nalgonda to Nadikudi (72 km). The estimate for Phase I amounting to Rs. 9.53 crores was sanctioned by Ministry of Railways (Railway Board) in April 1976. The work in Phase I was completed in March 1981 (15 months after the due date in December 1979). A revised estimate for the work amounting to Rs. 14.36 crores was prepared in April 1983, the increase being due to cost escalation for labour and material (Rs. 2.49 crores), inclusion of 'traffic facilities' works (Rs. 1.04 crores) at Hyderabad, increase in scope of work (Rs. 0.53 crore) and provision of new items (Rs. 0.77 crore). The section between Nalgonda and Miryalguda in Phase II was programmed to be opened for traffic by June 1984, but this has not materialised so far (July 1984). In the meantime the cost of Phase II works has risen from Rs. 10.43 crores (December 1975) to Rs. 14.97 crores (June 1981).

Observations

2.8.2 According to the survey report (1970), return of 11.2 per cent was expected in the 6th year of opening of this new line. With the steep increase in its cost from Rs. 12.52 crores to Rs. 29.33 crores (Rs. 14.36 + Rs. 14.97 crores) the anticipated return is likely to be vitiated. However, no re-assessment of the anticipated return has been made by the Railway Administration so far (December 1984)

Execution

2.8.3 Major earth work contracts were entered into during 1976 to 1978 with completion period ranging from 7 to 15 months. A number of extensions ranging from 13 to 28 months were granted due to delay in shifting of overhead electrical lines, delay in supply of R.C.C. pipes, shortage of diesel, obstruction to work by local people etc. resulting in delayed execution of the works.

Observations

2.8.4 In three reaches the quantities of earthwork in different types of soil mentioned in the tender schedules were based on rough estimates of soil classification. During execution, however, large variations

ranging from 90 per cent to 330 per cent in the quantity of rock requiring blasting were noticed in these reaches. In one of the reaches where the maximum variation was 350 per cent, the contractor demanded (September 1976) enhanced rate of Rs. 33 per M^3 for the quantity in excess of the permissible increase of 25 per cent as against the agreement rate of Rs. 19.32 per M^3, on the plea, that the rock excavated was of a special type (Manjira type) requiring extensive blasting. The Railway Administration after conducting some field tests, agreed (June 1977) to a rate of Rs. 31 per M^3. On a subsequent investigation by the Railway's Vigilance Department which conducted some tests a rate of Rs. 16.87 per M^3 was found as reasonable (September 1977). In November 1977, the Railway Board directed the Railway Administration to get fresh trials conducted by a Committee of officials including a representative of the Railway Board. The Committee conducted the trials in December 1977 and arrived at a rate of Rs. 32.13 per M^3 as reasonable. The rate of Rs. 31 per M^3 already agreed was, therefore, allowed to stand. The rate of Rs. 32.13 per M^3, worked out by the Committee included Rs. 11.67 per M^3, towards drilling and blasting. An analysis of the rate of Rs. 19.32 per M^3 as stipulated in the original agreement with the contractor revealed that the element of cost for drilling and blasting in that rate was only Rs. 11.78 per M^3, being the difference in rates for hard rock requiring blasting and soft rock not requiring blasting. Since the rate analysis done by the Committee (December 1977) did not reveal any increase in the rate for the components of drilling and blasting involved (in the special type of rock) over the difference in the basic rate between soft rock not requiring blasting and hard rock requiring blasting quoted initially by the contractor, there was no justification for allowing huge increase in rates from Rs. 19.32 per M^3 to Rs. 31 per M^3 (increase of over 60.5 per cent). The same rate of Rs. 31 per M^3 was allowed to the contractors in reaches I and II also while dealing with similar claims from them. The total additional expenditure on this account was Rs. 5.12 lakhs.

2.8.5 Owing to the belated decision to convert some of the proposed crossing stations into halts, station buildings constructed at a cost of Rs. 1 lakh and signal and telecommunication equipment panels costing Rs. 30 thousand had remained unutilised.

2.8.6 It was known in June 1983 that the section between Nalgonda and Miryalaguda was to be opened by June 1984. However, action for transportation of rails, procurement of ballast, laying and linking of track was initiated only in March 1984 by inviting tenders without giving wide publicity and adequate time for submission of tenders. Offers were received only from 8 tenderers for five such tenders invited. Consequently, the Railway Administration had to accept abnormally high rates inasmuch as the accepted tender value was Rs. 31 lakhs against the estimated tender value of Rs. 17 lakhs. This entailed extra expenditure of Rs. 11.80 lakhs in comparison to the rates obtained for similar other works during the same period.

2.8.7 The work on conversion of Macherla-Guntur MG section which forms the last link in the project has not been commenced so far (July 1984), though it had been approved in 1974-75 at an estimated cost of Rs. 8.21 crores. The revised estimated cost is Rs. 32.26 crores (August 1984). As this work has not progressed concurrently with the rest of the work, temporary transhipment and terminal facilities will have to be provided at Nadikudi at extra cost.

Provision of terminal facilities at Hyderabad and Secunderabad (BG) stations

Justification and Planning.

2.8.8 The study conducted by Traffic Survey Committee in November 1971 anticipated 70 per cent increase in traffic during the decade 1970-71 to 1980-81. To cope with this increase in traffic, the Railway Administration undertook the work of terminal facilities at Hyderabad and Secunderabad estimated to cost Rs. 95.52 lakhs (Phase I : Rs. 40.02 lakhs, Phase II : Rs. 55.50 lakhs). The works included additional stabling lines, sick lines, railway sidings, extension of washing lines and additional platforms etc. The Phase I and Phase II works were originally scheduled to be completed by 1975-76 and 1980-81 respectively. However, actually Phase I was completed in March 1980 (4 years later) and Phase II had only progressed to the extent of 94.5 per cent till June 1984 (3 years later).

2.8.9 As a result, the facilities intended to meet the increased traffic were not available in time.

Observations

2.8.10 The cost of the works which was initially estimated at Rs. 95.52 lakhs (in 1971) has gone up to Rs. 180.20 lakhs (April 1984). The original estimate provided for use of ballast and permanent way material released from Hyderabad Goods Yard. However, since there was delay of over three years in taking up the work (April 1975), the conditon of released materials was not found suitable for re-use at that stage. In consequence, new ballast and class II rails were provided at higher cost. The delays also resulted in escalation of cost to the extent of Rs. 6.90 lakhs (both labour and material) in Phase I and Rs. 29.19 lakhs (labour : Rs. 19.15 lakhs and material : Rs. 10.04 lakhs) in Phase II. The delay in the execution of works was stated to be manily due to non-availability of requisite funds in time and grant of extensions to contractors. In five out of ten major contracts the period of currency was extended from 9 to 17 months. The analysis of the reasons for extensions disclosed failure of handing over site in time, delay in handing over bridge drawing frequent power failures, and restriction for blasting in heavy built up areas, etc.

2.8.11 This is indicative of inadequate and ineffective planning.

Execution

2.8.12 The work of providing an island platform to accommodate 18 coaches was taken up in October/ November 1981 on a single tender basis, and was contracted to be completed within one month, although

the need for this work had become known to the Administration as early as in March 1981 itself.

2.8.13 The contract cost was Rs. 4.47 lakhs at a rate of (+) 210 per cent above SSR 1979. This rate had been justified by comparing it with the rate of (+) 235 per cent over SSR 1979 allowed by the open line branch in May 1981 on single tender basis for another work in the same area. The papers relating to the open line work were seized by the Vigilance Cell of Railway Board in September 1981. Still this was adopted as a basis for another contract awarded subsequently in October/November 1981. However, tenders finalised later on disclosed that the actual rates in vogue were (+) 90 per cent and (+) 50 per cent over SSR 1979 for similar works in Hyderabad area. Secondly, an unusual condition stipulated by the contractor that other agencies should not be employed for any works in that area during the currency of his contract, was also accepted by the Administration and the contractor was entrusted with additional works costing Rs. 2.69 lakhs without exploring other agencies. Computed with reference to the lowest rates obtained subsequently, the extra expenditure in this contract works out to Rs. 2.77 lakhs (against its total value of Rs. 7.16 lakhs).

Observations

2.8.14 If the Administration had not postponed the work by 6 months (from March 1981 to October/November 1981) and adopted the mode of limited/open tender in time, there would have been no occasion for incurrence of this extra expenditure.

2.8.15 As incidental to the scheme of terminal facilities, centralised goods facilities were provided at Sanatnagar with effect from August 1981 by closing down the goods sheds at Hyderabad and Secunderabad stations. The released assets of Secunderabad Goods shed (20 marshalling, receipt and despatch lines etc. with total length of 5.945 kms., Goods shed area of 1021.880 sq. metres lying vacant and one wagon weighbridge of 60 tonnes capacity) estimated at Rs. 10 lakhs have not been put to any alternative use.

Construction of 3rd bridge across the river Krishna, near Vijayawada

Justification

2.8.16 The Railway Administration felt (October 1977) the need to construct a 3rd bridge across the river Krishna near Vijayawada, in replacement of the first bridge constructed in 1893, which had become week and overstressed.

2.8.17 The work was commenced in April 1978 as authorised by the Ministry of Railways (Railway Board) on the basis of an urgency certificate and was planned to be completed in 6 years by March 1984. The estimate of the bridge was sanctioned for Rs. 7.06 crores in June 1979. The work consisted of (i) substructure (Rs. 1.80 crores), (ii) superstructure (Rs. 3.48 crores), and (iii) miscellaneous work (Rs. 1.78 crores). The work relating to substructure was completed in June 1981 (against the due date of November 1980) at a cost of Rs. 2.15 crores (against the estimate of Rs. 1.80 crores).

Observations

2.8.18 The Research, Designs and Standards Organisation furnished in November/December 1978 the general arrangement drawings for girders and recommended for the manufacture of the same from high tensile corrosion resistant steel to be imported. The contract for fabrication of bridge girders for the superstructure was awarded to the only firm available in India with adequate experience and expertise in fabrication of long bridge spans in March 1981 on single tender basis. The firm furnished the requirements of steel in December 1981. The Railway Administration invited global tenders for steel in January 1982. As the offers received were not to the specification, tenders were re-invited in August 1982 and were accepted in three parts against which supplies were received in December 1983/May 1984. Consequently, the superstructure work has not commenced yet (July 1984).

2.8.19 Thus, the Railway Administration failed to synchronise the superstructure work with substructure work. The construction of this bridge, taken up on urgency basis and due to be completed by March 1984, is likely to take much more time for its completion. In consequence, the investment of Rs. 4 crores already made on substructure and miscellaneous works would remain unproductive for the present. The delay in completion of the work is likely to escalate the cost of the work by about Rs. 5 crores (as assessed by Railway Administration in July 1984). This would mean an excess of 70 per cent over the estimated cost of Rs. 7.06 crores.

2.8.20 Besides, securing allotment of 12 lorries from Government quota for the contractor on priority basis, the Railway Administration rendered services and provided financial accommodation to the contractor, as indicated below :—

(Amount in lakhs of rupees)

(i) Hire charges for plant and machinary supplied liberally	9.00
(ii) Cost of materials (other than steel & cement) supplied	6.39
(iii) Supply of railway labour (including highly skilled)	1.59
(iv) Mobilisation advance (with 12 per cent interest).	10.00
Total	26.98

2.8.21 The extent and magnitude of these services/concessions which would have a material bearing on the rates of tenderers were not duly notified, while calling for tenders.

2.8.22 There were shortages in steel in the custody of Depot Store Keeper. Krishna Bridge, to the extent of 18 tonnes valued at Rs. 35 thousands. The responsibility for the shortages is yet (December 1984) to be fixed.

2.9 *South Eastern Railway*

Cost of Construction Organisation

2.9.1 The cost of Construction Organisation (excluding direct labour) on South Eastern Railway, the expenditure incurred on Works undertaken by it, and the percentage of the former to the latter during last few years are indicated below :—

Year	Cost of Construction Organisation	Expenditure incurred on the works	Percentage of column 2 to 3
1	2	3	4
	(Figures in thousand of rupees)		
1979-80	2,11,48	20,27,12	10.43
1980-81	2,41,93	38,98,24	6.20
1981-82	4,07,30	41,10,45	9.91
1982-83	3,71,16	38,65,66	9.60
1983-84	3,64,51	57,49,07	6.34

Observations

2.9.2 The ratio of general establishment charges to the works expenditure, duirng the years 1979-80, 1981-82 and 1982-83 varied from 9.60 per cent to 10.43 per cent, as against the prescribed norm of 8.5 per cent. The extra expenditure on this account aggregated to Rs. 1.40 crores (Rs. 39 lakhs, Rs. 58 lakhs and Rs. 43 lakhs in respective years).

Jakhapura-Daitari Railway project

Justification

2.9.3 The Ministry of Railways (Railway Board) sanctioned (November 1976) project estimate amounting to Rs. 5.10 crores for construction of a new line (33 km) from Jakhapura to Daitari (as the first phase of new railway link from Jakhapura to Banspani) to carry iron ore from Daitari and Chromite ore from Sukhinda Valley (Orissa State).

2.9.4 The following traffic was expected to materialise annually over this section :

(1) Iron Ore—1.30 million tonnes from Daitari mines and 0.20 million tonnes from Tomka mine to Paradip.

(2) Chrome ore—0.21 million tonnes from Sukhinda mines (0.15 million tonnes to Paradip & 0.06 to other destinations).

2.9.5 The work on the project was started in April 1977, and the line was opened to traffic in March 1981. The expenditure booked on the project till March 1984 amounted to Rs. 6.33 crores.

Observations

2.9.6 The total ore traffic actually moved over the new line from Jakhapura to Daitari was 0.48 lakh tonnes during the period March 1981 to June 1982, and the freight earned therefrom was Rs. 14.07 lakhs. From July 1982 onwards there was no traffic as the iron ore quarried from Daitari mines was not in demand from countries abroad, and Paradip Port did not allow any further stacking of the ore. As a result, the assets created at a cost of over Rs. 6 crores have been lying idle for the last two and a half years, and a monthly expenditure of Rs. 58 thousand is being incurred for watching and maintaining the assets.

Execution

2.9.7 The progress of the work at the time of opening of the line in March 1981 was 94 per cent. A revised estimate for Rs. 9.31 crores was submitted in May 1983 by the Railway Administration to the Ministry of Railways (Railway Board) whose sanction is still awaited (August 1984). As a number of works like TXR Office, battery room, cross drains, ballasting of track and watering arrangements etc. remained to be completed, the new line could not be handed over by the Construction Branch to the Open Line Branch for maintenance, though according to rules it should have been so handed over within six months of its opening.

2.9.8 In consequence, the establishment cost of Rs. 95 lakhs on maintenance of the line during the years 1981-82 to 1983-84 was debited to the construction estimate, leading to over-capitalisation to this extent and the resultant extra recurring liability of about Rs. 6 lakhs per annum on account of dividend payable by the Railway to the General Revenues.

2.9.9 The station buildings (Daitari, Sukhinda and Tomka) and the staff quarters (76 type I and 8 type II) built at a cost of Rs. 18.39 lakhs have been lying vacant (except 15 type I quarters handed over to Open Line branch between January 1982 and December 1983, and 6 type I and 2 type II quarters in use by construction branch). Eight chowkidars are employed to look after the vacant premises, and the expenditure incurred on their wages and night allowance till March 1984 amounted to Rs. 82 thousand.

2.10 *Western Railway—Provisions of transhipment facilities at Rajkot*

2.10.1 Viramgam-Okha-Porbandar conversion project was proposed to be completed in two phases :

Phase I—Viramgam to Rajkot.

Phase II—Rajkot to Okha/Porbandar.

2.10.2 During the interphase period, traffic to and from Porbandar/Okha side was proposed to be transhipped at Rajkot. As such, provision of Rs. 13.54 lakhs was made in the project estimate for providing temporary transhipment facilities at Rajkot.

2.10.3 In March 1979, on operational considerations, the Railway Board approved the proposal of the local Administration to construct the 1st phase from Viramgam to Hapa and to provide temporary transhipment facilities in the inter-phase period at Hapa at a cost of Rs. 84 lakhs. On completion of Phase I the Section from Viramgam to Hapa was opened for traffic in June 1980, and the traffic in block rakes from and to metre gauge stations on Hapa-Okha-Porbandar Section to and from Broad Gauge destinations were routed via Hapa-Viramgam.

2.10.4 As the final decision to construct the first phase upto Hapa and to provide temporary transhipment facilities at Hapa had been taken in March 1979, it had become well known to the Railway authorities that transhipment facilities were no more required at Rajkot as the same were now to be provided at Hapa. In spite of this, several works such as construction of transhipment platforms, signal cabins, receipt and despatch lines etc., required in connection with transhipment facilities at Rajkot were undertaken and commenced after March 1979 (*i.e.* in April, July, September 1979) and were completed in various months of 1980 at a cost of Rs. 13.36 lakhs. Similar works were carried out at Hapa as well. The facilities provided at Rajkot have been of no use at all and the expenditure incurred thereon has been rendered infructuous.

2.11 *Conclusions*

(1) The justification for the works had not been framed on a sound basis, resulting in belying of the expectations made therein. (Central, Eastern, North Eastern, Southern and South Eastern Railways).

(2) There were delays in execution of the works for reasons attributable to the Administration, such as, non-availability of site for the work, non-investigation of site conditions and non-finalisation of plans/drawings before invitation of tenders, non-shifting of signal wires before commencement of the work, non-availability of funds, changes in the scope of work during its execution, wrong estimation etc. (Eastern, Southern and South Central Railways). This is indicative of inadequate and ineffective planning.

(3) Time and cost over-runs occurred in most of the works. (Central, Estern, North Eastern, Northeast Frontier, Southern, South Central and South Eastern Railways).

(4) There were cases of incurrence of extra expenditure/liability aggregating to Rs. 61.52 lakhs (Cenral, Northern and South Central Railways) and loss of earnings amounting to Rs. 4 crores (Northeast Frontier Railway). An expediture of Rs. 13.36 lakhs incurred on provision of transhipment facilities at Rajkot on Western Railway has been rendered infructuous.

(5) The railway dues on account of deposit works undertaken on behalf of others and their repairs and maintenance charges aggregated to Rs. 1.11 crores on Northern Railway. Stores worth Rs. 1.31 crores had been lying at the site even after completion of the projects on Northern Railway. Station buildings constructed at a cost of Rs. 1 lakh, Signal and Telecommunication panels costing Rs. 30 thousand, and released materials valued at Rs. 10 lakhs had remained unutilised on South Central Railway. Station building and most of the staff quarters constructed at a cost of Rs. 18.39 lakhs have been lying vacant on South Eastern Railway. Shortages of stores amounting to Rs. 1.28 lakhs occurred on Northern and South Central Railways. Disciplinary action against the defaulting officials in this connection is yet to be finalised.

(6) There was excess deployment of staff in the Construction Organisation on North Eastern, Southern and South Eastern Railways, entailing extra expenditure of Rs. 5.22 crores.

(7) The investment of over Rs. 197 crores has not resulted in accrual of the benefits as expected of it. (Central, Eastern, North Eastern, Southern and South Eastern Railways).

The draft paras relating to this review were issued to the respective Railway Administrations during July to October 1984; their replies (except Northeast Frontier Railway) are still awaited (December 1984).

CHAPTER III

CHITTARANJAN LOCOMOTIVE WORKS

3. Chittaranjan Locomotive Works

Introduction

3.1 The Chittaranjan Locomotive Works (CLW) set up (1950) for manufacture of steam locomotives progressively switched over to the manufacture of electric locomotives (1961) and diesel shunters (1967) to match the increasing tempo and pattern of traffic. With the stoppage of steam loco production from 1971 the product mix of CLW comprises various types of electric and diesel locomotives.

A review in audit of the working of the CLW revealed the following :—

Production Performance

(a) *Loco Works*

3.2 Production targets are fixed by the Railway Board keeping in view the requirements of traffic, availability of funds and production capacity of CLW. There were shortfalls in production compared to both the targets and installed capacity during the plan periods as detailed below :

Period	Plan target (Nos.)		Installed capacity		Actual Production (Nos.)		Shortfall with reference to (Nos.)			
							Column 2		Column 3	
	Elec.	Disl.	Elec. (@ 72 p.a.)	Disl. (@ 50 p.a.)	Elec.	Disl.	Elec.	Diesl.	Elec.	Disl.
1	2		3		4		5		6	
4th Plan (upto 1973-74)	270	314*	360	250	232	198	38	116	128	52
5th Plan (upto 1978-79)	297	..	360	250	259	151	38	..	101	99
1979-80 and 6th Plan (upto 1983-84—Corporate Plan)	456**	281	360	250	290	166	166	115	70	84

*Despite short closure of Y.G. Steam orders at 60 Nos. instead of 70 Nos. as contemplated.

**Keeping in view the proposed capacity augmentation scheme.

3.3 The installed capacity thus remained under-utilised to the extent of 22-48% for diesel and 4-30% for electric loco during 1977-78 to 1983-84 involving an overhead cost burden of about Rs. 917.62 lakhs. (Annexure XI). Persistent low capacity utilisation over a long period needs suitable adjustments in overhead expenditure.

3.4 The shortfall in production was attributed generally to short and/or non supply of components like transmission and gear boxes, circuit breakers, tap changers etc. from the indigenous suppliers and frequent downward revision of the production targets. Diversification of activities attempted by undertaking periodical overhauls (POH) and repower packing of diesel locos, rehabilitation of damaged electric locos, repairs to traction motors, manufacture of steam loco tender tanks/underframes and maintenance spares for the Railways had not been adequate for absorption of the spare capacity.

(b) *Steel Foundry*

3.5 A Steel Foundry (SF) was decided (1960) to be set up at CLW initially with an installed capacity of 7000 t per annum. Before the SF was actually set up and commissioned (1966) the capacity had been stepped up (1963) to 10000 t although the Railway Board were aware that consequent on their decision to taper down steam loco production and undertaking manufacture of diesel/electric locos the steam loco castings load would be progressively coming down. The assessment made by CLW (June 1965) indicated that load available during the Fourth Five Year Plan would be about 50% of the enhanced capacity (10000 t) provided with budgetary support.

3.6 The SF had never been able to achieve the target production of 10000 t per year as mentioned in para 3.57 of Public Accounts Committee (1971-72), Eleventh Report and para 19 of the Report of the Comptroller and Auditor General of India for the year 1975-76—Union Government (Railways). The maximum outturn achieved in 1968-69 was 8602 t which progressively declined to 3546 t in 1981-82. During the five year period ended 1982-83 the average outturn was 4385 t per annum, representing under-utilisation of nearly 56% of the available capacity. The shortfall in capacity utilisation had been explained as due to change in product mix from simple and heavy steam loco castings to intricate and lighter electric/diesel loco components, frequent change of products and uncertain availability of load etc. On an operational research study recently (June 1981) conducted by the Efficiency Bureau Directorate of the Railway Board the optimal annual production of the

SF was assessed at 5000 t under the existing conditions of machinery and plant, product requirements etc. Even this downward revised production capacity could not be realised in recent years.

3.7 The reduced outturn also affected utilisation of capacity of the furnaces in the SF. Compared to the installed capacity of 14 heats per day for two furnaces, underutilisation during the period 1978-79 to 1982-83 ranged between 65.17% and 72.36%.

3.8 The CLW Administration stated that every effort was being made to achieve the revised target of 5000 t as fixed on operational research study and its achievement was about 87% in 1983-84. Attributing the less utilisation of furnace capacity to reduced achievable outturn it further stated that at the revised target of production maximum 5 heats per day would be required against the installed capacity of 14 heats.

3.9 It may, however, be mentioned that the capacity assessment by the operational research cell is based on the past actual performance when the outturn of intricate castings did not reach (except in 1972-73) even the level (4000 t) envisaged in the product mix for 10000 t capacity, despite release of capacity (about 6000 t) with the stoppage of steam loco castings. There was no change in product mix as such to justify downward revision of the production target, especially when about 50% of the intricate castings outturn comprises heavier coco bogies (4.5 t each).

Excessive consumption of manhours and material

3.10 Compared to the norms of requirement recommended by the collaborators and/or laid down by CLW there had been excessive consumption of manhours and certain costly materials in manufacturing operations, involving extra expenditure of about Rs. 716.82 lakhs as mentioned below :

(a) *Manhours*

3.11 Taking into account the product mix envisaged in the SF capacity the collaborators recommended (October 1967) a norm of 41.29 average manhours requirement per tonne of castings, which was revised (March 1968) upward to 63.56 manhours by CLW. During 1978-79 to 1982-83 the annual outturn of castings ranged between 3546 t and 5021 t far which the direct labour input was about 24.73 lakh manhours more than the requirements even at the maximum standard of 125.64 manhours per tonne fixed by CLW for the most intricate and time consuming coco bogie castings. The indirect labour also exceeded the requirements at the prescribed rate (120% of direct labour) by 75.82 lakh manhours. The excessive consumption amounting to 100.35 lakh manhours on both counts involved a financial implication of about Rs. 3.35 crores at the lowest average hourly rate of semi-skilled labour, excluding the elements of overtime and incentive bonus. The excess manhour consumption in terms of money value constituted about 8% to 12% of the total cost of the castings outturn, ranging between Rs. 5.28 and Rs. 8.92 crores during this period.

(b) *Materials*

3.12 *Silica Sand.*—New Silica Sand is required for core making and use as facing sand for majority of the castings. For the product mix envisaged in the SF capacity the requirement of new silica sand as recommended by the collaborators is 1.214 t per tonne of castings if maximum reclamation of returned sand is ensured and 1.89 t without such reclamation. For minimising use of costly new silica sand by maximum possible recovery of returned sand a washing and reclamation plant was set up at CLW. An analysis in audit of the sand consumption in the foundry indicated that during 1973-74 to 1978-79 when the intricate diesel/electric loco castings constituted about 57.9% to 82.8% of the total outturn, with the use of reclaimed sand ranging between 6242 t and 17102 t the consumption of new sand was at the level of 1.33—1.59 t per tonne of castings, In the next four year period ended 1982-83, though the proportion of intricate castings to the total outturn and consumption of reclaimed sand (except for the minimum of 1593 t in 1982-83) was more or less at the same level, the consumption rate of new sand recorded a steep increase ranging between 2.01 and 3.55 t per tonne of castings which was about 6 to 87 per cent higher than even the norm of 1.89 t recommended in case of no reclamation of returned sand. Compared to this norm the excessive consumption of new sand during 1979-80 to 1982-83, despite use of reclaimed sand (35025 t) would work out to 12111 tonnes involving extra expenditure of Rs. 20.71 lakhs.

3.13 The CLW Administration stated (March 1984) that under the changed conditions of the factory the consumption rate of sand per tonne of castings should be 2.6 t instead of 1.89 t without, however, indicating the exact date for the change over. Even compared to the revised consumption rate which is higher than the collaborator's recommended norm (1.89 t) the total excess consumption of sand (both new and reclaimed) during the last decade amounted to 71,515 t, involving financial implication of Rs. 122 lakhs. The consumption of binding material like bentonite and dextrine on this account was also excessive to the extent of 4,291 t and 1,277 t, involving further extra expenditure of Rs. 20.04 lakhs and Rs. 56.74 lakhs respectively (Annexure XII). Failure to exercise proper control over consumption of sand led to adoption of a norm about 37.57 per cent higher than that recommended by the collaborators.

3.14 *Graphite electrodes.*—Against the collaborator's norm of 5.5 to 6 kgs. per tonne of metal melt the consumption rate of graphite electrodes for melting of metals in the foundry ranged between 6.86 and 10.90 kgs. per tonne during the period 1969-70 to 1982-83, involving an excess consumption of 510.348 tonnes costing Rs. 133.87 lakhs [cf. para 8 of the Comptroller and Auditor General of India Report for the year 1982-83—Union Government (Railways)]. The excess consumption has been attributed (August 1984) by CLW Administration to inefficient functioning of the furnaces (manufactured by M/s. TIBB and marketed by M/s. HBB) supplied by the collaborators due to—

"(i) Frequent troubles in electrode movement ;

(ii) Breakage of electrodes due to malfunctioning of the electrode movement operations ;

(iii) Inability of the roof to sit tightly on the shell and provide air tight furnace condition inside; and

(iv) Inefficient system which is inherent in adopting electrode control movement by hydraulic press."

However, despite these inherent defects the furnaces are being continued in operation without replacement/modernisation at the cost of recurring excessive consumption of the electrodes.

3.15 Electrolytic copper wire bars.—According to the collaborator's norm the requirement of finished copper strips is 205.053 kgs. per traction motor (TA0-659). Actual issue of the material has, however, been made at the rate of 215 kgs. plus 5 per cent extra for spares, aggregating to a requirement of 225.70 kgs. per traction motor, *i.e.*, about 10 per cent more than the recommended norm without conducting any study or experiment under working conditions at CLW. For 4114 traction motors manufactured during 1971-72 to 1983-84 (February 1984) the total excess consumption of copper strips worked out to about 84.94 tonnes involving extra expenditure of Rs. 37.37 lakhs at the current market rate (Rs. 44 per kg.).

3.16 The Administration stated (March 1983) that it was not possible to stick to the collaborator's recommendation as their manufacturing process and condition/environments were different from those in India. The requirement of copper strips per motor had to be revised based on raw materials, machinery and plant and process availability at CLW. That the recommended norm was not workable under the working conditions at CLW does not seem to have been pointed out to the collaborators, nor was the higher scale as adopted by CLW got ratified by them. With the expertise and experience gained over the years in manufacture of these motors, the feasibility of bringing about economy in consumption of this costly material has not also been examined.

3.17 For other items of materials also the collaborator's recommended norms have been enhanced by CLW by more than cent per cent without even consulting Research, Design and Standard Organisation (RDSO) in certain cases. The actual consumption, as revealed from the drawals recorded in the shop bin cards, was, however, considerably more than even the enhanced scales involving an extra expenditure of Rs. 11.35 lakhs in respect of four items (*viz.* Polyglass tape, Fibreglass tape of different thicknesses, Triacetate paper and varnish which have limited shell life) during 1971-72 and 1979-80 (December 1979).

3.18 The technical Department attributed (October 1977) the excess consumption to Indian conditions of working. The Finance Department, however, suggested (November 1977) a check by the Departmental officers or Inspector of Stores Accounts to locate and identify the reasons for high incidence of utilisation of the materials under Indian Workmanship as against French Workmanship. The suggestion does not seem to have been acted upon so far (November 1984).

Uneconomic manufacture of castings

3.19 In para 25 of the Report of The Comptroller and Auditor General of India for the year 1970-71—Union Government (Railways), mention was made of uneconomical manufacture of steel castings undertaken for Integral Coach Factory for utilising the spare capacity of the foundry. Between November 1970 and 1979 CLW had placed orders on a firm for 345 sets of Suri Transmission (ST) and Reversing Gear Box (RGB) for diesel locos. The price for the November 1970 order was inclusive of the cost of housings for both ST and RGB. However, with a view to providing load for the foundry, CLW undertook manufacture of these housings (for both ST and RGB upto May 1977 and only for RGB thereafter) for free supply to the firm against the subsequent orders. The cost of production per complete set of ST and RGB castings at CLW varied between Rs. 35,260 and Rs. 90,667 while that of RGB castings alone was Rs. 35,710. The manufacture of these castings (204 sets ST and 345 sets RGB) proved uneconomical and involved extra expenditure of Rs. 94.84 lakhs when compared to the price (Rs. 20,695 per set of castings) offered by the firm in November 1970 duly escalated at the same percentage as reflected in its price quotations for the subsequent orders.

Melting loss

3.20 Norms for melting loss have not been fixed in the foundry. During 1978-79 to 1982-83 the melting loss varied between 15 per cent and 19.55 per cent as against the corresponding figures of 6.79 and 5.79 during 1981-82 and 1982-83 respectively in the Jamalpur Steel Foundry.

The percentage of risers and runners is also generally in the range of 51—55 with corresponding reduction in the yield of castings. No norms for risers and runners have so far (October 1984) been fixed in the light of the experience gained in the manufacture of castings in the last two decades.

The overall percentage of rejection ranged between 4.96 and 7.96 during the period 1978-79 to 1982-83. Though it was within the tolerable limit (10 per cent), there had been heavy incidence of cracks in coco and flexicoil bogies manufactured in the SF for high powered diesel and electric locomotives. Of 1300 coco bogies manufactured so far (October 1984), 371 bogies costing Rs. 508.27 lakhs (at 1983-84 production cost) are reported (September 1983) to have developed cracks. Further, out of 18 flexicoil bogies cast so far, 10 nos. costing Rs. 20 lakhs were straightaway rejected on the shop floor itself and the balance had developed cracks.

Plant and Machinery

3.21 No 'load chart' as well as 'machine idle time cards' as prescribed by the Railway Board have been maintained by the CLW to ensure optimum

utilisation of the machineries except for Loco Shops in August 1972 when percentage of non-utilisation of machineries was found to be 31.6. In the absence of load chart available machine hours, their utilisation and idling with causewise analysis thereof are not susceptible of verification.

Bulk of the plant and machineries have outlived their normal lives and overaged content constitutes about 65 per cent and 81.5 per cent of the total holdings in the Loco Shops and SF respectively as indicated below :

Unit	Total No. of machines in use	Total No. of machines over-aged	Extent of overaging			
			Upto 5 years	6-10 years	11-15 years	16-20 years
Loco Shop	1292	840	304	78	51	407
Steel Foundry	308	251	92	110	28	21

The impact of overaging on production performance is not assessable in the absence of load chart and machine idle time cards.

3.22 For modernisation of CLW the abstract estimate (Rs. 7.33 crores) sanctioned (September 1979) by the Railway Board provided for procurement of 151 items of machineries and plant at a cost of Rs. 6.47 crores to be financed by the World Bank. In the revised estimate sanctioned in February 1982, the cost was enhanced to Rs. 12.67 crores for 136 items representing nearly 100 per cent increase despite deletion of 15 items.

Of the 136 items, 47 machines were to be procured by Central Organisation for Modernisation of Workshops (COFMOW) and the rest by CLW. The COFMOW have ordered 43 machines, of which 42 have been received and installed in CLW but only 41 commissoned so far (June 1984).

CLW has so far ordered 60 machines of which 37 have been received and installed but only 34 commissioned (June 1984).

The slow progress of the modernisation scheme has involved cost escalations besides non-realisation of its desired objective of effecting economy in cost and time in manufacturing process.

Material Management and Inventory Control

3.23 Efficient inventory management requires lowest stock levels with highest service levels to ensure minimal essential but unproductive capital investment. The Committee (1975) on Inventory Management of Railways recommended norms of stock holding for A category (items having consumption of Rs. 50,000 and over per annum), for B(i) and (ii) categories (items having consumption of Rs. 25,000 and Rs. 10,000 respectively per annum) and for C category (items having consumption upto Rs. 9,999 per annum) of stores. The actual stock holding under all the categories on 31-12-1983 was, however, much in excess of the recommended scales as shown below :

Category	Inventory recommended	Actual	Excess stock holding
	(in terms of months)		(in lakhs of Rs.)
A	3	4.21	643
B(i)	6	15.07	82
B(ii)		19.47	113
C	12	32.22	159
			997

The excessive stock holding valued at Rs. 997 lakhs involves extra inventory carrying cost amounting to Rs. 96.70 lakhs per annum (at 6.5 per cent dividend plus 3.2 per cent stores overhead rates).

3.23.1 The factors contributing to the excessive inventory build up are mainly (a) entering into financial commitment for long lead items based on the tentative production programmes approved by the Railway Board at the commencement of the year but scaled down subsequently, (b) difficulties in rescheduling the deliveries against commitments already entered into, to correlate the requirements of the revised production schedule coupled with frequent failure to achieve even the reduced production target, (c) non-synchronisation of supplies of matching materials from different sources, (d) excessive procurement and (e) change in design at times.

3.23.2 As on 31st December 1983, 3,472 items of stores valuing Rs. 113 lakhs were lying inactive for 12 months and over as detailed below :

Category	Items not moved for 12—24 months		Over 24 months	
	(As on 31-12-1983)			
	Items (No.)	Value (in lakhs of Rs.)	Items (No.)	Value (in lakhs of Rs.)
1	2	3	4	5
(a) Diesel Loco Spares	440	14.90	368	8.20
(b) Electric Loco Spares	269	42.36	428	6.66
(c) Others	718	28.43	1249	12.84
Total	1427	85.69	2045	27.70

3.23.3 Apart from dividend liability for these inactive items there is likelihood of deterioration and obsolescence due to their prolonged storage. No definite plans and programmes with predetermined targets to liquidate these non-moving items appear to have been drawn up. Some specific instances are cited below :

(a) Certain imported components of Suri Transmission worth Rs. 13.28 lakhs rendered obsolete owing to elimination (July-August 1971) of synchronising coupling and mechanical clutch have not moved for more than a decade involving inventory carrying cost of about Rs. 12.21 lakhs upto 1983-84.

(b) The Railway Board had desired (1961) the CLW to develop capacity for production of

1000 t of Spheriodial Graphite Cast Iron (SGCI) bearing shells for the Railways. For manufacture of this item CLW had initially used imported cerium bearing magnesium silicon alloy (cost Rs. 6,216.22 per t) but later switched on to the use of costlier imported Nickel Magnesium Alloy (cost Rs. 90,219 per t) for reasons not on record. Out of 6.536 t of the costlier alloy purchased during 1972 and 1973, only 0.753 t was used and the balance 5.783 t (cost Rs. 5.22 lakhs) was rendered surplus consequent on the Railway Board's transferring (1978) manufacture of this item to Jamalpur Workshop (JMP) due to failure of CLW to develop the same. The JMP Workshop declined to accept the surplus stock of alloys, as its own stock holding (7,013.8 kgs.) in March 1982 was considered sufficient to cater to the requirements for about sixteen years at the average consumption rate of 417 kgs. per year. The procurement of such large quantity of costly material before establishing development of manufacture of this item was injudicious and led to blockage of capital besides inventory carrying cost of Rs. 5.76 lakhs for the last twelve years. The excessive stock of this costly alloy at CLW and JMP Workshops has remained unutilised although the Railway Board procured eight lakhs of SGCI* bearing shells from trade during the period from 1978 to 1983.

(c) The freight type AC electric (ACFT) locos manufactured by CLW in the initial stages developed various defects (cf. para 10 of Report of The Comptroller and Auditor General of India(Railways for 1972-73). For repairs of the bogies 191 roller bearings (SKF make) imported (1970-71) by CLW at a cost of Rs. 3.11 lakhs have been lying in stock without any issue since 1975 involving unproductive investment and the attendant liability of inventory carrying cost amounting to Rs. 2.66 lakhs for the last nine years. Attempts to dispose of the materials by transfer to other Railways proved futile possibly because the latter had also procured their respective requirements.

Absence of weighment facility

3.24 The wagon weigh bridge (42 ton capacity) irreparably damaged in 1972 has not been repaired so far (November 1984). In the absence of weighment facility receipts of materials are accounted for and payments made to the handling contractors on 'said to contain' Railway Receipts basis involving possible excess accountal and overpayments to the contractors for short receipts. In some cases incoming wagons are sent to the nearest weigh bridge station which result in delayed release of the wagons. Out of the total detention charges of Rs. 517.10 lakhs accrued during the period 1980-81 to 1983-84 (October 1983), Rs. 244.24 lakhs has been waived, Rs. 164.76 lakhs paid and the balance Rs. 108.10 lakhs is awaiting payment (September 1984).

Non-recovery of marine insurance claims

3.25 Failure to maintain adequate deposit for an open insurance coverage in respect of sea borne cargo resulted in repudiation of CLW's claims of Rs. 4.21 lakhs for loss/damages in transit by the Insurance Co. [cf. para 17 of Advance Report of The Comptroller and Auditor General of India (Railways) for 1982-83].

Manpower utilisation

3.26 The staff build up in CLW has been based on planned production targets. The frequent downward revisions in production targets coupled with the CLW's failure to achieve even the revised/reduced production targets resulted in huge surplus manpower which has been categorised as 'Day Workers' and 'Momentary Surplus'. No precise assessment of the surplus staff on account of shortfall in production seems to have been attempted so far.

According to the Administration, 'Day Workers' comprise Progress Men, Safaiwalas, Tool Checkers, labour under suspension as well as those on training. During the period 1970-71 to 1976-77 the 'Day Workers' manhours varied between 17,328 and 45,456 per annum. Having regard to the fact that progressive tapering down of steam loco production from 1966-67 which completely stopped in 1971-72 and simultaneous training of staff for Electric and Diesel Loco production, the incidence of 'Day Workers' subsequent to 1971-72 would appear to be on the high side. On this being pointed out (January 1975) by audit, 'Day Workers' manhours started declining from 25,304 in 1976-77 to 5,264 in 1981-82. However, from 1977-78 the Administration opened a new head 'Momentary Surplus' to accommodate the time gap between completion of one operation and taking up the next. During 1977-78 to 1982-83 the quantum of 'Momentary Surplus' manhours ranged between 83,499 and 1,44,615 as detailed below :

Year	Production (in No. of Units) (Locomotive)	Day Workers (hours)	Momentary Surplus (hours)	Total (Columns 3&4)
1	2	3	4	5
1970-71	123	18192	..	..
1971-72	105	17328	..	..
1972-73	101	23096	..	..
1973-74	100	26472	..	..
1974-75	80	31616	..	..
1975-76	80	45456	..	..
1976-77	76	25304	..	..
1977-78	90	12880	1,44,615	1,57,495
1978-79	84	13880	86,388	1,00,068
1979-80	90	14376	1,37,718	1,52,094
1980-81	106	7704	83,499	91,208
1981-82	92	5264	1,09,101	1,14,365
1982-83	80	16768	1,03,165	1,19,933

*Procurement of these shells from trade has been commented *vide* para 5 of this Report.

It may be mentioned that time lag between two operations is already provided for in the 'Preparatory Allowance' (PA) for each job and further allowance on this account has no justification. There has been no real reduction in 'Day Workers' during the period 1977-78 to 1982-83 in that the manhours booked under 'Momentary Surplus' had been substantially heavy.

3.27 The total of 'Day Workers' and 'Momentary Surplus' during the six years ended 1982-83 aggregated to 7.35 lakh manhours, *i.e.,* on average about 1.22 lakh hours per year as against the corresponding figure of 0.27 lakh 'Day Workers' hours in the previous seven years. Thus, in the last six years there has been 452 per cent increase in surplus labour, despite no material change in loco production (average 90 per year) compared to the previous period (average 94 per year). The expenditure on this unproductive labour (1.22 lakh hours) would work out to about Rs. 5.29 lakhs per annum at the minimum wage rate of Rs. 4.34 per hour for a semi-skilled worker.

The CLW Administration stated (March 1975) that a number of steps had been taken to absorb the surplus labour generated by cut back in production but it would be difficult to completely balance the capacity released with that utilised on other types of work.

Incentive bonus, idle time and overtime payments

3.28 The incentive bonus scheme introduced (with effect from December 1954) in CLW is based on "Allowed Time" which had been so fixed as to enable a workman of normal ability to earn 33⅓ per cent over and above his basic wages for the time spent on the job. For workers of more than average efficiency a ceiling limit of 50 per cent of the basic wages has also been fixed though not envisaged in the code. The time recording clocks having remained out of order for years together in most of shops, the supervisory chargemen who are entitled to 80 per cent of the bonus earned by the workmen, are recording the time in the job cards. As a result, the average bonus earning of all workers irrespective of their efficiency was near about the ceiling limit of 50 per cent. Further, while the production declined from 123 locos in 1971-72 to 80 locos in 1982-83, the bonus earnings of the direct workers increased from 45.30 per cent to 49.18 per cent respectively, thus belying the objective of increased productivity expected of the incentive bonus scheme.

3.29 The high incidence of bonus payments would seem to have largely been contributed by excessive dilution of the 'allowed time' (revised between 1974 and 1981) as revealed on sample analysis in audit in respect of some selected items of work/operation (Annexure XIII). It would be observed therefrom that for certain items the 'allowed time' was several times more than not only those computed by the Administration but indicated by the workers as well.

3.30 Idle time for the direct workers arises from non-availability of workload, materials, power etc. and other miscellaneous factors. The incidence of 'Day Workers' and 'Momentary Surplus' as mentioned in para 3.27 above, though arising from 'want of work', manhours on this account are not booked as idle time apparently to keep it at low level. During the period 1979-80 to 1982-83 idle time booking ranged between 14,090 and 50,240 manhours per year, while the aggregate of 'Day Workers' and 'Momentary Surplus' was about 1.19 lakh manhours on an average per annum. Further, against the loss of 8.02 lakh manhours due to 'no power' reported to the Railway Board for the period June 1982 to May 1984, the actual booking under idle time was only 9635 hours. The difference of 7.92 lakh manhours thus concealed in idle time booking was quite likely to have been accommodated against the large cushion provided in the diluted 'allowed time', involving avoidable payment of bonus amounting to about Rs. 31.51 lakhs (at the average incentive earning rate of Rs. 3.98 per hour).

3.30.1 Under the extant orders (February and June 1972) of the Railway Board overtime (OT) booking of workshop staff in production shops under incentive scheme is not permissible and the Chief Mechanical Engineers (CMEs) are required to ensure that no OT is booked in the incentive sections. With the introduction of incentive scheme in service shops the Railway Board completely banned (July 1981) the booking of staff on OT. Nevertheless, CLW Administration has been regularly booking the workshop staff covered by incentive schemes on OT, while huge surplus manhours arising from under utilisation of the installed production capacity have remained untapped over the years as shown below :

Year	Surplus Manhours (in lakhs)			OT	
	Day Workers'	Momentary Surplus	Total	Hours	Amounts (Rs. in lakhs)
1	2	3	4	5	6
1979-80	14,376	1,37,718	1,52,094	12,66,767	28.45
1980-81	7,704	83,499	91,208	14,33,320	45.41
1981-82	5,264	1,09,101	1,14,365	10,84,981	34.84
1982-83	16,768	1,03,165	1,19,933	30,47,455	88.00

Financial Management

3.31 A review in audit revealed certain weaknesses and deficiencies in accounting functions, non-observance of customs and excise duty rules etc. leading to the following adverse financial consequences.

(a) *Non-collection of dues*

3.31.1 As on 30th June 1984, dues on account of electric charges, licence fees and sale of locos to Public Sector Undertakings amounting to Rs. 142.23

lakhs in 681 cases pertaining to various periods since 1973-74 remained uncollected primarily due to delayed/ non-preferment of bills and/or lack of proper follow up action. Further, 851 stock verification sheets relating to 1966-67 onwards and involving excess (Rs. 16 lakhs)/shortages (Rs. 21.81 lakhs) are awaiting finalisation even after a lapse of about two decades. Of these, 271 stock sheets October 1973—January 1974) relating to Tool Room had disclosed net shortage of Rs. 4.62 lakhs which was brought down in subsequent stock verification (August—September 1976) to Rs. 0.99 lakh by making heavy adjustments without supporting vouchers [cf. para 27 of the Report of the Comptroller and Auditor General of India for the year 1976-77—Union Government (Railways)]. The investigation into the adjustments to verify whether there had been deliberate manipulation of records, as assured (December 1977) by the Railway Board, has not yet been conducted (October 1984). Such inordinate delays are liable to render finalisation of the stock sheets and/or fixation of responsibilities for shortages difficult or even impossible.

(b) *Delays in clearance of suspense balances*

3.31.2 Bulk of the over one year old 8262 debit and 13013 credit items under the 'Purchase' head (recording supplies and payments therefor) involving Rs. 11.18 crores and Rs. 7.73 crores respectively at the end of May 1984 date back to 1971-72 and earlier. The existence of such unadjusted items for years together would point to lack of proper chasing and linking the various transactions to ensure reduction of suspense balance and the corresponding interest liability which on the net debit balance of Rs. 3.45 crores (at the end of May 1984) would amount to about Rs. 22.43 lakhs per annum. Similarly, under 'Miscellaneous Advances (Stores)', recording issue of stores for fabrication and return of the fabricated material, the debit and credit balances awaiting adjustments over one year were Rs. 1.89 crores (2283 items) and Rs. 0.74 crore (478 items) respectively at the end of May 1984, involving dividend liability of Rs. 34.74 lakhs per annum on the net debit balance (Rs. 1.15 crores).

3.31.3 Transit Depot is maintained at Howrah for receipt of materials delivered there. Payments for such supplies are made on the basis of receipt notes issued by the Depot. Materials worth about Rs. 152.21 lakhs over one year old are lying unadjusted under stores-in-transit at the end of May 1984 due to non-linking of receipt of the materials at CLW and/ or the suppliers' bills. Further, an amount of Rs. 5.21 lakhs relating to the period 1965-66 to 1970-71 has been cleared by CLW on an ad hoc basis without any documentary proof of the actual receipt of stores. Under ihe 'Proforma Invoice Payment' system in vogue the suppliers are to furnish proforma invoice for the value of the stores ready for delivery. The proforma invoice is exchanged for the cheques drawn in favour of the suppliers after inspection of the stores. Between October 1980 and May 1984 payments made to the suppliers under this system have remained unconnected with the actual receipt of the materials at CLW.

(c) *Excess payment of Customs duty*

3.31.4 Under the Customs Act (1962), while arriving at the assessable value of imported goods freight charges are to be added to f.o.b. value as under :

(a) where air freight and insurance charges are higher than sea freight and insurance charges the addition on this account is to be made as if the goods are imported by sea and air freight, if lower than sea freight, taken for calculation;

(b) a twenty per cent addition to cover freight and insurance charges when these are not included in the invoices.

3.31.5 For computing the assessable value of the air freighted consignments CLW, however, uniformly adopted the alternative (b) above even in cases where the notional sea freight and insurance charges, being only ten per cent of the invoice value, was applicable under (a). The incorrect application of the rules resulted in excess payment of duty amounting to Rs. 16.91 lakhs for the air freighted consignments for the period February 1975 to May 1982 (excluding 13 months for which records were not made available).

(d) *Non-availing of the set off of duty*

3.31.6 Under the Central Excise Rules (56-A) set off is admissible for duty paid raw materials and components used in manufacture of dutiable finished goods. CLW Administration failed to avail of this benefit which in respect of duty paid transformers, suri transmission and gear boxes used in the locos manufactured for the Public Sector Undertakings during 1980-81 to 1982-83, amounted to Rs. 13.12 lakhs. On this being pointed out (August 1982) by audit, a claim for Rs. 8.64 lakhs pertaining to 1981-82 was preferred (May 1983) but rejected by the Central Excise authorities for non maintenance of records by CLW to fulfil the prescribed requirements. Information as to the action taken to represent to the higher authorities for repudiation of its claims has not been intimated by CLW.

(e) *Sales Tax*

3.31.7 For the period from 16-1-1968 to 31-3-1971 CLW had been assessed for sales tax at Rs. 30.96 lakhs but on an appeal before the Sales Tax Tribuna the assessments were remanded. However, fina assessments as directed by the Tribunal are still awaitec (March 1984). According to CLW, the sale: tax assessable for this period was Rs. 24.88 lakhs while its actual collection from the Public Sector En terprises was only Rs. 19.39 lakhs, representing shor collection of Rs. 5.49 lakhs recovery of which at thi distant date may be rendered difficult. Pendin assessment of tax for the period 1980-81 to 1982-8 due to non-submission of returns (March 1984) CLW collected from its customers sales tax of about Rs 2.02 crores out of which only Rs. 40.69 lakhs has s far (March 1984) been paid to the sales tax authori ties. Delayed submission of returns and non-paymen of the already collected tax may attract levy c

penalty under Sales Tax Act, involving additional burden on CLW's resources. Besides holdup in payments of the collected sale tax (Rs. 1.61 crores) there has been huge accumulation of arrears in payment of excise duty amounting to Rs. 2.07 crores upto March 1984.

Computer utilisation

3.32. An IBM 1440 computer (first generation) initially obtained (April 1966) on hire was acquired by CLW at a cost of Rs. 1.35 lakhs in May 1978 when acquisition of third generation computers was under contemplation of the Railway Board. The maintenance of the computer has been entrusted to the Computer Maintenance Corporation (CMC—a Government of India Undertaking) with effect from June 1978. No formal contract with CMC has been executed so far (1984) and payments for maintenance services are being made at Rs. 19033 per month as authorised (July 1982) by the Railway Board.

3.32.1 The average utilisation of the computer has never gone beyond 264 metre hours against its capacity of 400 metre hours per month, but productivity linked bonus bills for 1980-81 and 1981-82 were prepared manually on payment of honorarium of Rs. 1.19 lakhs to the staff. Even pay bills for March 1979 were paid on *ad hoc* basis leading to over payment of Rs. 4.5 lakhs which was recovered only at the instance of audit.

3.33 Procurement of third generation computer in replacement of the existing ones at CLW and other two production units at an estimated cost of Rs. 1.40 crores each was decided by the Railway Board in June 1978. The new computer (ICL) for ICF ordered in 1983 has since been received and is under installation. Purchase order for the computer for CLW is yet (October 1984) to be finalised by the Railway Board. Meanwhile, CLW incurred expenditure of Rs. 28.70 lakhs (upto December 1983) on construction of the computer building etc. (estimated to cost Rs. 245 lakhs), besides operating from May 1980 a System Development Cell (SDC) comprising five officials (monthly expenditure Rs. 10,461) for developing and testing advance programmes in Common Business Oriented Language (CBOL) in coordination with the System Development Group (SDG) set up at ICF in June 1978 with nine officers and eleven supporting staff (monthly expenditure Rs. 31,717) for finalisation of the computer system specifications, installation and feasibility study etc. to have a uniform approach for all the production units. Delays in finalisation of the orders for the computers involved cost escalation (original estimate of Rs. 1.40 crores revised to Rs. 1.93 crores for ICF) and prolongation of the SDG and SDC, apart from the possibility of the work done by them, pending availability of the design and make of the computers, being rendered infructuous.

3.34 *Summing up*

(1) Continuous under utilisation of installed loco production capacity involved extra overhead cost burden amounting to about Rs. 917.62 lakhs during the last seven years. (cf. para 3.3).

(2) Alternative items so far taken up for manufacture have proved inadequate to absorb the surplus production capacity (cf. para 3.4).

(3) Steel Foundry capacity had been enhanced (1963) from 7,000 t to 10,000 t per annum even though it was not achievable because of non availability of adequate load with the tapering down of steam loco production. Keeping in view plant and machinery conditions, product requirements etc. the optimal production capacity has been revised to 5000 t per annum which corresponds to the average annual outturn of 4385 t in recent years. (cf. paras 3.5—3.9).

(4) Compared to the prescribed norms of requirement input of labour and materials for production was excessive involving extra expenditure of Rs. 716.82 lakhs (cf. paras 3.10 to 3.18).

(5) Manufacture of castings undertaken for free supply against contracts for procurement of certain components involved extra expenditure of Rs. 94.84 lakhs compared to the rates offered by the contractors. (cf. para 3.19)

(6) Frequent scaling down of production programmes which formed the basis of entering into financial commitment for long lead items, failure to reschedule deliveries to suit revised production schedule, non-synchronisation of supplies of matching materials, excessive procurement etc. led to excessive inventory build up (worth Rs. 997 lakhs as on 31-12-1983) and resultant extra financial liability (cf. para 3.23.1)

(7) As on 31-12-1983, value of stores not moved for 12—24 months and over amounted to Rs. 85.69 lakhs and Rs. 27.70 lakhs respectively, involving unproductive capital investment with interest liability, apart from the risk of deterioration/obsolescence due to prolonged storage. (cf. para 3.23.3).

(a) Imported components of Suri Transmission worth Rs. 13.28 lakhs rendered obsolete due to change of design are lying in stock for more than a decade, involving inventory carrying cost of Rs. 12.21 lakhs. [cf. para 3.23.3(a)].

(b) Excessive procurement of Nickel Magnesium Alloy led to blockage of capital (Rs. 5.22 lakhs) over the last 12 years while the bearing shells for which these were purchased are being procured in large nos. by the Railway Board annually from the trade. [cf. para 3.23.3(b)].

(c) SKF bearings worth Rs. 3.11 lakhs lying unused since 1975 involving inventory carrying cost of Rs. 2.66 lakhs upto 1983-84. [cf. para 3.23.3(c)].

(8) Due to absence of weighment facility in CLW, wagons are often sent to the nearest weigh bridge station resulting in their delayed releases and payment of detention charges—Rs. 164.76 lakhs paid during 1980-81 to 1983-84 and Rs. 108.10 lakhs awaiting payment. (cf. para 3.24).

(9) Failure to maintain adequate deposit for open Insurance Coverage resulted in CLW's claim of Rs. 4.21 lakhs for transit loss/damage being rejected by Insurance Co. (cf. para 3.25).

(10) Under utilisation of the production capacity resulted in huge surplus manpower, the unproductive manhours being about 1.22 lakhs on average per annum during the six years period ended 1982-83 involving an expenditure of Rs. 5.29 lakhs. (cf. para 3.27)

(11) Allowed time not fixed in conformity with Railway Board's orders resulting in excessive dilution to enable the workers to earn profit without commensurate increase in outturn. (cf. para 3.28)

(12) Despite existence of heavy surplus manpower, staff covered by incentive bonus scheme are booked on overtime in contravention of the extant orders of Railway Board. (cf. para 3.30)

(13) Unsatisfactory financial management resulted in—

(i) non-collection of dues amounting to Rs. 142.23 lakhs. (cf. para 3.31.1)

(ii) non-clearance of old suspense balances for want of proper linking, chasing etc. (cf. para 3.31.2)

(iii) excess payment of customs duty amounting to Rs. 16.91 lakhs. (cf. para 3.31.4)

(iv) non-realisation of the set off of duty amounting to Rs. 13.12 lakhs. (cf. para 3.31.6)

(14) Notwithstanding under-utilisation of the existing computer, manual preparation of bills etc. was resorted to. Acquisition of new computer on replacement account is pending for the last six years, while SDG and SDC are functioning since June 1978/ May 1980, involving expenditure of Rs. 42,178 per month.

The audit paragraph was issued to CLW in May 1984; its reply is still awaited (December 1984).

CHAPTER IV

PURCHASES AND STORES

4. Purchase of cartridge tapered roller bearings for BOY wagons

4.1 In view of the unsatisfactory performance of the 22.9 tonne indigenous cylindrical roller bearing axle boxes fitted on the BOY wagons in service on the Waltair-Kirandul section of the South Eastern Railway and taking into consideration the experience abroad, the Research Designs and Standards Organisation (RDSO), made a recommendation that in the interest of reliable service of BOY wagons the cylindrical roller bearing axle boxes should be replaced by cartridge type tapered bearings. Accordingly, the Ministry of Railways (Railway Board) decided, (January 1978) to import 3000 cartridge type bearings (375 wagons sets) and in the mean time to develop these indigenously.

4.2 Global tenders invited in July 1978 were opened on 21st August 1978. Though seven firms responded to the tender, the offers of only three firms, *viz.*, firm 'A' of Japan, firm 'B' of Bangalore and firm 'C' of Jaipur were found technically acceptable. The rate quoted by firm 'C' was the highest of the three, the lowest being that of firm 'A' of Japan. However, the firm 'C' (in a letter dated 19th August 1978 delivered to the Railway Board long after opening the tender) revised its offer for supply at a much lower price. The tender committee recommended (October 1978) negotiations with the above three firms. After negotiations, the rates of the Japanese firm were the lowest. The other two firms, however, lowered their rates still further so as to bring their prices on par with those of the Japanese firm. Fresh quotations were obtained from the three firms on 11th December 1978, according to which the tender of firm 'B' was the lowest. The revised quotations were :

Firm	Quoted price f.o.b.	Foreign exchange c.i.f. Rs.	Estimated landed cost Rs.
1. 'A' of Japan	Y 20,500	916.50	1,537
	Rs. 872.34		
2. 'B' of Bangalore	DM 193.00	878.70	1,474.80
	Rs. 846.49		
3. 'C' of Jaipur	—	795.95 (quoted c.i.f. price)	1,484.00 (quoted f.o.r. price)

4.3 The tender committee recommended placement of order on firm 'C' on the consideration that :

(i) the firm's offer was for partly indigenous components (to the extent of Rs. 94 per set);

(ii) the f.o.r. price quoted by the firm was higher than the lowest offer by a negligible amount (Rs. 1.80 per set) only;

(iii) the offer involved foreign exchange of Rs. 796.95 only per bearing as compared to Rs. 878.70 in the case of firm 'B' and was, therefore, more advantageous;

(iv) the firm would be fully responsible for mounting and would guarantee satisfactory running of the complete assembly ; and

(v) the offer was ex-stock—ex-U.S.A.

4.4 Accordingly, an order was placed on firm 'C' on 15th February 1979 for supply of 3000 cartridge bearings as shown below :

1. Cartridge bearings consisting of 4 components (to be imported from USA)	at the rate of Rs. 1,390 per set (c.i.f. price Rs. 796.95)
2. Five components to be supplied indigenously	Rs. 94 per set.

Total value of the contract Rs. 44.52 lakhs.

4.5 Subsequently, in December 1979 the order was increased to 3900 cartridge bearings. Further, as suggested by the firm, the Railway Board also procured 400 seals (one of the components) as spares at a cost of Rs. 64,000.

4.6 Though the delivery was to be completed by September 1979 the firm supplied 3805 sets only upto October 1982 of which 661 were damaged requiring rectification. Out of 3,144 sets, 986 sets were diverted and mounted on BOX 'N' wagons and 2,158 sets were waiting for mounting. Upto December 1984, 756 sets only have been mounted on BOY wagons for which these were specifically imported.

4.7 Meanwhile, the firm has received payments of Rs. 42.20 lakhs.

4.8 The technical evaluation of the tender and acceptance of the offer of firm 'C' had not been done properly with the result that the object of importing

cartridge bearings had remained unfulfilled, as explained below :

(a) (i) 'Wear ring' is one of the five items to be manufactured and supplied by the firm indigenously. The firm supplied four of the five indigenous items (excluding wear rings) in April 1982 only and did not supply 'wear rings'. In February 1981, Rail India Technical and Economic Services (RITES)—the inspecting authority, pointed out that the firm had not submitted the drawings for indigenous items before commencement of manufacture as required under the terms of the contract. The firm replied "it was subsequently found that item (iii) of serial No. 2, that is, wearing ring is a composite part of bearing assembly and cannot be separately supplied, as the packed grease will leak out without this part. This has been imported with bearings assembly and as such shall not be supplying along with other indigenous items".

Evidently the firm did not know technical details of the bearing assembly for which it had quoted or had deliberately misled the Railway Board by including the item as indigenous supply though it had to be imported. The technical evaluation by RDSO/Railway Board of the drawings/specifications submitted by the firm was obviously inadequate.

(ii) The cartridge bearings imported were to be used on existing wheelsets of BOY wagons as per tender specification. The firm's quotation was also specific in this respect, *viz.*, that for use on existing journals as per RDSO sketch, special sealing arrangements and backing ring would be provided. However, it was noticed that the fitment of cartridge bearings on existing BOY wheels required machining of the journals by 30 mm. The Railway Board stated (December 1984) that the bearings were to be fitted on cylindrical roller bearing journals and hence some changes were necessary for fitment of cartridge bearings, but machining was not required.

It was, however, observed that in the Raipur workshops the journals of BOY wagon wheels had to be machined by 30 mm for fitment of cartridge bearings though the firm had said that the bearings would be suitable for use in existing wheels.

(iii) According to clause 8 of the agreement the firm was required to submit 'as made' drawings of the cartridge tapered roller bearings free of cost. The firm, however, did not supply such 'as made' drawings. According to RDSO, the drawings submitted by the firm were deficient in many respects and were likely to lead to confusion. The firm was reluctant to furnish the above drawings stating that it involved "trade secrets".

(iv) RITES also pointed out that 'backing rings' (one of the indigenous components) had been manufactured from case carbursing steel instead of EN 9 steel. The implications of this deviation from specification do not appear to have been examined by Railway Board.

(v) The firm commenced supply of imported bearings from 12th May 1980 and matching indigenous components from 16th April 1982 only. Even upto April 1983, 756 imported bearings and some indigenous components were still to be supplied.

(vi) In April 1979, the Railway Board recommended import of a fixture (at a cost of Rs. 51,000) for mounting and dismounting axle boxes, at the firms's request. Import of two more fixtures at a cost of Rs. 1.77 lakhs for similar purpose was recommended by the Railway Board in February 1982. This was indicative of the fact that the completion date of the contract was flexible as the supply was scheduled for completion by September 1979.

(b) (i) Though the delivery was to have been made ex-stock and completed by September 1979, supply commenced in May 1980 (imported portion) and April 1982 (indigenous portion) is still not complete. Railway Board extended the delivery dates from time to time, the 10th extension being upto May 1984.

(ii) Payment was to be made after receipt, inspection and correct mounting of bearings and components on the wheelsets at consignee's end, supported by inspection certificate. In October 1982, the firm requested for 90 per cent of payment on the plea that axles were not available for mounting and huge amount invested by them was held up. Accordingly Railway Board amended the contract providing for 75 per cent payment in respect of supplies of matched quantities. An amount of Rs. 42.19 lakhs has been paid to the firm so far (June 1984). Mounting on wheels is yet to be done. Consequently the amount paid by the Railway Board has remained an idle investment.

(iii) The contract was entered into on 15th February 1979. Even before the supplies commenced and were inspected, the Railway Board decided in December 1979 to increase the quantity from 3000 to 3900 bearings by exercising the option clause. The firm, however, claimed additional foreign exchange stating that c.i.f. rates had been raised by their principals. Accordingly, additional foreign exchange at higher c.i.f. rates was released in respect of 900 cartridge bearings. Thus the original expectation that the firm's offer involved less foreign exchange had not materialised fully.

(iv) After obtaining the order, the firm persuaded the Railway Board to place order for spares of 'rear seal'. This is one of the components supplied along with bearings and according to RDSO has the same life as bearings. The firm recommended that spare rear seals might be needed by Railways for replacement every time the bearing and wheelsets were removed. RDSO was doubtful whether spare seals were required at all, as the Japanese bearings running on BOY wagons did not require any replacement and also as the 'seals' would deteriorate in storage. The Railway Board, however, placed orders (March 1980) for 400 seals at a cost of Rs. 64,000 involving foreign exchange of Rs. 37,000.

It would appear that the import of these 'seals' as spares was necessitated by the fact that contrary to the clarifications given by the firm at the time of consideration of tender, dissimilar seals (for front and rear ends) had been allowed in the order placed on the firm instead of identical seals.

The Railway Board stated (December 1984) that the seals were arranged based on technical recommendations of RDSO to keep one per cent seals as spares and also keeping in view the fact that the firm of USA was unlikely to manufacture these sales later on and less probability of its indigenous development.

According to RDSO the seals in Japanese bearings then in use of BOY wagons did not require replacement. Further, RDSO had noted that the firm had not supplied part drawings and, therefore, it (RDSO) did not have design details of the expected life and service life of seals in order to appreciate the need for spare seals.

Moreover, the Railway Board's reply that the USA firm was unlikely to manufacture the seals and there was less probability of indigenous development seem to indicate that the Railway Board had apparently chosen a design which was being discarded by the firm.

4.9 Apart from the firm's failure to supply the cartridge bearings according to schedule, Railway Board's decision to divert the bearings for manufacture of BOX 'N' wagons also affected the utilisation of BOY wagons, as explained below :

(i) The firm had advanced the plea that matching axles were not available for mounting and, therefore, extension of time should be granted. It is, however, noticed that 1,850 wheelsets which were ordered for BOY wagons on which these bearings were to be fitted were actually fitted with cylindrical bearings. Thus, having ordered cartridge bearings specially for fitment to BOY wagons in view of failure of cylindrical bearings and also having imported wheelsets for BOY wagons, the Railways were compelled to procure additional cylindrical bearings from the same firm on account of its failure to supply cartridge bearings.

(ii) The catridge bearings supplied by the firm in piece meal and received at Raipur for fitment on BOY wagons were also diverted by Railway Board to wagon builders for fitment on BOX 'N' wagons. The total quantity thus diverted was 986 sets out of 3,144 bearings supplied.

The failure rate of the cylindrical bearings fitted on BOY wagons had been high. Between 1975 and 1982, 92 per cent of cylindrical bearings (out of 8,400) supplied by the firm had failed against only 1 per cent of cartridge bearings (out of 400). Consequent on delay in supply of cartridge bearings the South Eastern Railway had to procure 5,114 cylindrical bearings from the same firm for replacement of failed cylindrical bearings, between August 1980 to April 1983 involving expenditure of Rs. 72 lakhs.

4.10 *Summing up*

The object of importing cartridge bearings at a cost of Rs. 57.87 lakhs to provide a satisfactory solution to the BOY wagon bearing failures has not been achieved. Inadequate technical examination, consideration of late offers (and revision of offers) of firm 'C' and unnecessary emphasis on negligible indigenous content had resulted in acceptance of the offer of the firm in preference to the acceptance of the offer of a proven supplier. The life of cartridge bearings chosen is also shorter than that of Japanese bearings. Besides, the Railway Board themselves, diverted the supplies for manufacture of BOX 'N' wagons knowing that these were intended for BOY wagons and the failure rate of cylindrical bearings fitted on BOY wagons was very high. Consequently, BOY wagons on Waltair—Kirandul section had remained immobilised and the South Eastern Railway had to resort to emergency purchase of short life cylindrical bearings from the same firm incurring additional expenditure of Rs. 72 lakhs.

The Railway Board has also stated (December 1984) that the idea of buying from Indian firm was basically to obtain from indigenous source and that as indigenisation was being done for the first time there were delays.

It is, however, mentioned that the cartridge tapered roller bearings were proposed to be procured for fitment to BOY wagons on which there were large scale failures of cylindrical bearings. The Railway Board had decided in January 1978 to import 3,000 cartridge tapered roller bearings 'immediately' and 'in the meantime' to develop them indigenously. For indigenous development, trial (developmental) orders could have been placed, but instead the urgent requirement was covered by placing an order for large quantity on indigenous firm, without proper technical evaluations of the design, resulting in delay and large-scale immobilisation of BOY wagons. The indigenous components also were of value of Rs. 94 per set in total c.i.f. cost of Rs. 1,390 per set.

5. Purchase of SGCI Bearings/shells

5.1 Spheroidal Graphite Cast Iron (SGCI) bearings are used in wagons fitted with plain bearing axle boxes. The Railway Board had issued instructions in 1971 that SGCI bearings should be used in place of bronze bearings which were costlier and prone to theft. SGCI shells* have a long life as they can be used over and over again by white metalling. The holding of wagons with plain bearings was about 2 lakhs B.G. and 90000-M.G. requiring about 8.5 lakh B.G. shells and 4.3 M.G. shells in service.

5.2 SGCI bearings/shells are procured centrally by Railway Board on the basis of annual requirements advised by railways.

*Bearings refer to S.G.C.I. shells with white metalling.

5.3 The demands placed by Railways in various years were :

	Number of SGCI bearings/shells	
	BG	MG
1977-78	48,233	31,888
1978-79	95,391	66,516
1979-80	183,428	83,708
1980-81	165,625	52,437
1981-82	137,854	52,637
1982-83	98,098	32,186

5.4 It will be observed that the demands in 1979-80 and 1980-81 compared with that in 1977-78 was 3½ times and 2½ times for B.G. and M.G. shells respectively. The pattern of demand showed that the railways did not have a programme for fitment of S.G.C.I. bearings in place of existing bronze bearings. It also showed that the railways were replacing even serviceable bronze shells by S.G.C.I. shells.

5.5 There were only five approved manufacturers of shells and two of (white metalled) bearings. One of the firms had a capacity of 90000 shells per annum. The capacity of other firms was limited.

5.6 During the years 1980 and 1981 the Railway Board placed orders on several firms with a view to covering the abnormal indents placed by Railways. It was noticed in audit that though the number of approved firms was limited open tenders were invited by Railway Board and contracts finalised at higher prices without exploring the possibility of obtaining lower rates. Further, the contracts with firms, who had failed to supply, were cancelled without imposing any penalty though Railway Board had to incur additional expenditure in purchasing the shells. These are discussed in the following paragraphs.

Cancellation of contract without financial repercussion

5.7 A contract was placed on firm 'A' of Howrah in November 1978 for supply of 1,37,500 pieces of SGCI shells at Rs. 65 per B.G. piece and Rs. 47 per M.G. piece. The firm failed to supply the materials by the scheduled date of delivery (December 1979) and attributed the delay in supply to interruptions of power, load shedding, etc., and requested extension of delivery period. Accordingly delivery period was extended from time to time and was fixed as December 1980. Proposal of the firm to short close the contract as the rates had become unremunerative was accepted by the Railway Board who cancelled the balance quantity (66,625) without financial repercussions and placed a parallel order (March 1981) for 58,421 pieces (M.G.) at Rs. 113 per piece (increase of over 100 per cent) on the same firm.

5.8 It would appear that the cancellation of the 1978 contract without financial repercussions was not justified, as the Railway Board had taken into consideration the power interruptions etc., and had granted extensions as requested by the firm. The intention of the firm appeared to be only to get enhanced rates. The cancellation of contract and placement of order on the same firm at higher rates has resulted in extra expenditure of Rs. 33.26 lakhs.

5.9 The Railway Board stated (December 1984) that the only practical alternative available to it was to consider the firm's request and to give relief to the extent possible as the other alternative, *viz.*, risk purchase was not considered feasible the capacity of other firms being limited.

Tender invited in 1980

5.10 The tender was opened in August 1980. The tender committee decided to hold negotiations on 5th November, 1980 with the tenderers to arrive at reasonable price and to persuade the firms to enhance the quantities offered. Negotiations were attended by two firms (firm 'A' and firm 'D') only against 6 firms who had quoted. Firm 'B' did not attend the negotiations but sent a revised enhanced quotation (Rs. 180 against Rs. 148.50 per piece quoted earlier).

5.11 The lowest offer of firm 'A' (Rs. 130) was ignored as the firm had a huge back log against earlier orders. Firm 'D' revised its quotations from Rs. 167 per piece for first 6,000 shells, Rs. 180 for next 12,000 shells, Rs. 187.50 per piece for next 18,000 shells and Rs. 195 per piece for next 18,000 shells, Rs. 203 per piece for next 18,000 shells the average working out to Rs. 190.29 per piece. The firm had stated that the annual rate of inflation was in the region of 25% justifying the slab rates. Though the tender committee noted that the attitude of the firm did not appear to be very reasonable and perhaps the firm was taking advantage of the very heavy demand for the items, the committee recommended acceptance of the rates. Accordingly an order was placed on the firm 'D' in December 1980 for 72,000 BG shells at the revised rates quoted by the firm.

5.12 It is to be observed that the acceptance of tender of firm 'D' which had enhanced its rates during negotiations on assumed rates of inflation was not justified and had resulted in extra benefit of Rs. 21.9 lakhs to the firm, for the following reasons :

(a) Though the original rates quoted by tenderers are required to be maintained during negotiations firm 'D' enhanced its rates.

(b) For purposes of assessing the reasonableness of rates, several competitive rates were available. Firm 'B' had quoted Rs. 148.50 per piece initially. Cost data was available with the rate of Rs. 130 quoted by firm 'A'. Railway Board themselves had worked out a rate of Rs. 148.50 allowing for escalations on the previous purchase price. In spite of these, the Railway Board accepted the plea of the firm about 25 per cent likely escalation in 1981, without working out the rates from basic cost data and negotiating the rates on that basis.

(c) Even for the next contract period (tenders invited in July 1981) the Railway Board estimated the price as Rs. 160 only per piece.

(d) This firm accepted a rate of Rs. 181 per piece in April 1982 (less than the rate accepted in December 1980) showing thereby that the assumption of higher rate of inflation was a mere speculation.

5.13 In its reply to the above observations the Railway Board stated (December 1984) that the original rates quoted by firm 'D' were subject to escalation clause. During negotiations a firm rate was obtained and therefore it would not be deemed as enhancement of the rate.

5.14 The Railway Board stated further that though the tender committee felt that the firm was unreasonable, considering the fact that it was the only firm which offered the stores no other course of action (than accepting the rates quoted by it) was available.

5.15 The Railway Board's arguments are not however acceptable as there was no basis for assuming higher rate of inflation. Moreover, as already mentioned the indents were abnormally high and there was no urgency that the only and unreasonable offer of firm 'B' should have been accepted.

5.16 As mentioned earlier, firm 'B' did not attend negotiations but quoted a rate of Rs. 180 per piece against Rs. 148.50 quoted against the tender. Railway Board placed an order on firm 'B' also in January 1981 on single tender basis at Rs. 180 per piece though this firm had failed to supply the shells against an earlier contract placed on it in February 1980. The February 1980 contract was cancelled without financial repercussions. The acceptance of higher rate on single tender basis resulted in extra benefit to the firm.

5.17 According to the Railway Board, the firm disputed the existence of a valid contract (placed in February 1980) and it was felt that the only course available was to cancel the contract without financial repercussions.

Tender invited in 1981

5.18 The tenders were opened in July 1981. Tender Committee held negotiations with the two approved firms (Firm 'A' and Firm 'B') which had responded to the tender and also with firm 'D' (which had not quoted). During negotiations, firm 'B' reduced its rates by Rs. 6 and quoted a rate of Rs. 216 to Rs. 244 per piece (in slabs of 10,000 pieces).

5.19 Though the rate was Rs. 70 higher than the 'reasonable rate' assessed by it, the Railway Board accepted the rate on the consideration that the last purchase price from firm 'B' was Rs. 180 per piece (*vide* para 5.16) above and that an increase of 25 per cent over that rate was a fair estimation. An order was placed on the firm for 50,000 BG shells at an average price of Rs. 230 per shell (step 'A') in February 1982. The basis on which the tender committee assumed the increase ignoring the 'reasonable rate' of Rs. 160 calculated by the Railway Board (allowing for escalation between October 1980 and June 1981) are not clear.

5.20 Meanwhile, more offers were received from firm 'C' (Rs. 181 per piece), firm 'E' (Rs. 210) and firm 'D' (Rs. 235 to Rs. 265). These firms are regular suppliers to Railways. These offers were considered by the tender committee on single tender basis. The rate quoted by firm 'C' was counter-offered to other firms which was accepted by them. Accordingly orders were placed in July 1982 on firms 'C', 'D' and 'E' and a developmental order on firm 'F', for a total quantity of 70,700 shells at Rs. 181 per piece.

5.21 Thus within two months of concluding a contract with firm 'B' at higher rates the Railway Board was able to obtain much lower rates.

5.22 It would appear that (i) there was failure to explore the possibility of obtaining competitive rates and supplies from other established suppliers and (ii) the evaluation of the tenders on the assumption of higher escalation was erroneous. More competitive rates were available and the Railway Board had failed to explore the possibility of obtaining such lower rates for the entire quantity against the tender. The award of contracts at higher rates had resulted in extra expenditure of Rs. 23.88 lakhs on BG shells alone. The extra expenditure would be much higher, if M.G. shells are also taken into account.

5.23 Incidentally, in the next tender (October 1982) the rates accepted by the various firms were as under :

Firm	Rate quoted in October 1982 tender	Rate accepted by firms	Rates accepted earlier by the Railway Board
	Rs.	Rs.	Rs.
Firm B	159	159	230 (Sept. 1981)
Firm D	240	159	181 (June 1982)

5.24 This would show that the firms had been quoting highly inflated rates and were prepared to accept 35 per cent below their quotations. The Railway Board, however, had been accepting the highly inflated rates without realistic examination of cost data and ignoring its own calculations of a reasonable price.

5.25 It was also noticed that while the Railway Board was concluding contracts with the firms at higher rates, the zonal railways and other public sector undertakings were obtaining shells/bearings at

cheaper rates from the very same firms. Some instances are given below :

Item/Name of the firm	Rates accepted by Railway Board	Rates at which the firm was supplying to other consumers
1. White metalled bearings MG Firm 'G'	Rs. 150— August. 1980 Tender	Rs. 102 July 1980 to firm 'A'
2. B.G. Shells Firm 'C'	Rs. 181— July 1982 order	Rs. 175— October 1982 to Central Railway
3. B.G. Shells size 'B' Firm 'B'	Rs. 173.50— May 1983	Rs. 132— October 1983 to Central Railway.

5.26 The Railway Board stated (December 1984) that the question of the best rates that could be obtained had to be considered with reference to circumstances existing at a particular period of time. At the time of finalisation of original tender (December 1981) firm 'B' was the only firm in the field. In the absence of any competition, the tender committee had to accept the offer which they considered reasonable.

5.27 In this tender also the quantity was based on the abnormally high indents placed by the Railways. The SGCI shells were required for replacement of existing bronze shells and therefore, there was no urgency to finalise the tender with the only firm in the field assuming higher escalations and without exploring the possibility of obtaining competitive rates which, incidentally, became available within a period of 2 months.

5.28 The Railway Board's argument that the offer of firm 'B' was considered reasonable is also not tenable as the very same firm quoted a rate of Rs. 159 per shell in October 1982 against Rs. 230 per shell accepted by Railway Board in December 1981—a reduction of 31 per cent in spite of increase in costs.

White metalled bearings

5.29 There were only two approved firms for supply of white metalled bearings. The Railway Board had placed the following orders for white metalled bearings.

Month	B.G. (rate rupees per piece)	M.G. (rate rupees per piece)
December 1980	Rs. 230—240	Rs. 134—138
March 1982	Rs. 370—385	Rs. 210—225
June 1983	Rs. 340—355	

For considering the reasonableness of rate Railway Board was computing the cost of white metalling on the basic price of shell. It will be observed that the rate accepted in January 1982 (July 1981 tender) was 60 per cent more than the earlier rate of Rs. 230 per piece. The Railway Board justified acceptance of the rate of Rs. 370 on the consideration that the recommended price of a shell against that tender was Rs. 230, the cost of white metalling was about Rs. 128 and, therefore, a rate of Rs. 370 for white metalled bearings was reasonable. As explained in para 5.19 the cost of shell had been wrongly accepted at Rs. 230 per piece. Moreover, these firms were not manufacturing shells but were purchasing them from other manufacturers (*e.g.*, firm 'A') at much cheaper rates. The bought out shells were white metalled by the firms and supplied to railways. The erroneous assumptions about the cost data and the failure to negotiate with reference to realistic cost data had resulted in acceptance of higher rates and extra expenditure of Rs. 6.2 lakhs.

Summing up

5.30 It will be observed that

- during the period from 1979-80 to 1981-82 the quantities indented by Railways were abnormally high;
- the Railway Board had not examined the reasons for abnormally high quantities indented by railaways before initiating procurement action despite the fact that the production capacity for this item in the country was limited;
- the rates accepted by the Railway Board against 1980-tender and 1981-tender were very high in relation to the cost data which the Railway Board failed to take into account;
- the Railway Board had erroneously assumed higher escalations from time to time in order to justify acceptance of higher rates from particular suppliers;
- negotiations were not held with all the suppliers;
- there was failure to explore the possibility of obtaining lower rates which, in fact, became available after concluding contracts at higher rates;
- the contracts with the firms which had failed to supply were cancelled without imposing any penalty though the (cancelled) quantities had to be procured at higher rates.

The various failures mentioned above had resulted in additional expenditure to Railways to the extent of Rs. 85.2 lakhs in the contracts placed between 1980--82.

6. Southern Railway—Incorrect specifications in tenders/purchase orders for supply of stores

According to extant rules stores should be purchased to specification wherever possible rather than to sample. The appropriate specification should be annexed or quoted in the tender forms with the stipulation that the supply will be subject to inspection and test by an appointed agency.

A review of a few purchase orders placed by the Railway Administration for 'safety items' required for manufacture and maintenance of rolling stock revealed significant omissions in clearly indicating the specifications with resultant loss, disputes and concessions by way of relaxations. The five instances given below indicate :

(a) defective or inadequate inspection by the inspecting agency, *viz.*, Rail India Technical and Economic Services (RITES) which accepted the materials though they were not according to specification,

(b) incorrect specification of raw materials given in the purchase orders,

(c) post-contractual modifications to the specification resulting in undue benefit to the supplier,

(d) usage of rejected materials as they were not segregated, and

(e) furnishing obsolete specifications.

1. *Purchase of flue tubes*

The Railway Administration placed an order in July 1981 on supplier 'A' for 303 cold drawn flue tubes to the specification and measurements indicated in the order, at Rs. 580 each (total all-in-cost Rs. 624.20 each). After inspection by RITES in October 1981, advance payment amounting to Rs. 1.71 lakhs was made in the same month. However, in March 1982 the entire supply was rejected by the consignee (Deputy Controller of Stores, Golden Rock) for the reason that when the tubes were expanded, they were found cracking and during the flattening test the tubes broke on the weld. RITES was also informed simultaneously. The firm, however, disputed the rejection saying that the consignee's test had not been conducted according to the specification and also the clearance by RITES was effected after testing through their nominated Test House.

The flue tubes were finally accepted by the Administration in October 1983 on the basis of tests conducted by National Test House, Calcutta.

Thus, on account of dispute on the test conducted, stores valued at Rs. 1.83 lakhs had remained without use for nearly one and a half years.

It was noticed that the same firm had supplied the pipes earlier against a purchase order of February 1981 and the supplies had been rejected by the consignee. This fact of the earlier rejection was not taken note of while finalising the order placed in July 1981. Incidentally, the supplies against earlier order had also been accepted after certain rectifications carried out in the Workshops.

2. *Purchase of modified strengthened screw couplings*

A purchase order was placed in December 1981 on Firm 'B' of Howrah for supply of 450 modified strengthened screw coupling assembly at a price of Rs. 1,150 each involving a total cost of Rs. 5.38 lakhs. The firm pointed out certain discrepancies in dimensions of some component items. The firm was informed that the coupling should conform to RDSO Sketch No. 79067 and 79068 Alt. 2.

The specification for modified strengthened screw couplings for fitment on coaches of double-headed trains, prescribes that the couplings should conform to a proof load of 50-60 tonnes and that raw material (steel) used should be to specification STC 60-61. The firm, however, supplied 150 screw couplings in January/June 1983 manufactured out of steel not conforming to STC 60-61, but to a different specification (R 9-66) normally used in conventional screw couplings. RITES also had inspected the materials. The firm had stated that it had consulted RDSO about the specification. RDSO, however, stated that clarification about applicability of R 9-66 specification had been given wrongly. RDSO also pointed out that the firm was not a registered party for supply of this item.

The Railway Administration stated (January 1985) that out of 150 couplers supplied by the firm, 33 had been utilised immediately on their receipt and the remaining 117 were lying in stock pending settlement of price reduction. The balance of 300 numbers are yet to be delivered. Meanwhile, an amount of Rs. 1.71 lakhs has been paid to the firm.

3. *Purchase of guide on bogie frame*

Based on an emergency indent for 2,083 numbers of 'guide on bogie frame' special limited tenders were invited in August 1980 and a purchase order was placed in February 1981 on Firm 'Y' of Howrah for 2,083 guides at Rs. 375 each with delivery date as 24th December 1981. In March 1981 the firm pointed out certain discrepancies in the sketches, and after clarification by the Mechanical department, a modification was issued. Again, in June 1981 the firm advised that as the steel, according to the specification indicated in the purchase order, was not available in the market, they were supplying the material according to another specification for which the raw material was readily available. When the matter was referred to the Mechanical department, the latter advised that the material was not acceptable as it affected weldability of the component. Nevertheless it was found that 848 guides valued at Rs. 3.31 lakhs supplied in different batches and inspected by RITES as per the alternative specification offered were taken into stock. The order for the balance quantity was cancelled in March 1982.

When the matter regarding acceptance of material not conforming to specification was raised by Audit, the Administration stated (May 1984) that the supplies could not be treated as 'sub-standard'. The above argument is not correct as the Mechanical department had already stated that the material was

not acceptable. Moreover, the rates quoted and accepted were for a particular quality of steel and post-contractual revision in the case of selected supplier will amount to undue favour being shown to him.

4. *Purchase of ball bearings*

For ball bearings fitted on dip lorries in the Engineering Workshop at Arakkonam, the Stores department had opened a separate stores heading (nomenclature) which read 'SKF 1308 ball bearings' with dimensional details. Purchase proposals were processed on the basis of indents received from the Engineering Workshops. A review of a series of purchase orders for this item revealed that description of the item in two purchase orders was not clear due to non-indication of the quality of the steel though this requirement was included in every Workshop indent. Arising from this practice, it was found that supplies received from the firms, against successive orders were rejected initially on the basis of tests carried out in the workshops and the matter remained undecided for a long time and ultimately the stores were accepted. Some of these cases are mentioned below :

(i) A tender notice was issued in October 1980 for 400 SKF ball bearings with dimensional details with the stipulation that (1) stores should be supplied in maker's original sealed cartons and (2) the make and relevant bearing number of the offer should be specified. A purchase order was placed on firm 'C' for 400 numbers at Rs. 57.60 each for 'SKF make only'. The indenting stores depot pointed out that the requirement was for bearings manufactured out of chromium steel and not carbon steel and that the specification was not indicated in the purchase order. In spite of this, the specification was not advised to the firm. Two sample bearings supplied were tested and were rejected by the indentor as being made of low carbon steel. However, subsequently in November 1981 the entire supply was accepted and Rs. 0.25 lakh was paid.

(ii) In another tender issued in November 1980 the offer of the same firm *viz.*, 'C' for supply of SKF ball bearings was accepted in March 1981. Enquiries made by Controller of Stores, before release of purchase order revealed that SKF bearing was not manufactured in India, and there was no stockist in India. Incidentally, it may be mentioned that the principal firm 'X' quoted Rs. 201 for SKF (Swedish make). Inspite of these factors, the purchase order was released on firm 'C' in May 1981 for 1460 SKF bearings at Rs. 57.60 each presumably because the firm had stated "we will be supplying only SKF. . . .". The rejection advice in the case of the other order referred to in sub-para (i) above was also received in May 1981. The supplies received in two lots inspected by RITES were rejected by the consignees in May 1982. RITES had clarified that in the absence of indication of the raw material specification, they had done the dimensional check up.

While the raw material specification was omitted in the two purchase orders mentioned above, it was found that the specification had been incorporated in three other purchase orders issued on other firms in February 1979, May 1980 and December 1981.

Both the cases mentioned at (i) and (ii) above would reveal that the Railway Administration had been accepting sub-standard bearings under the name of SKF bearings on account of failure to mention the specifications correctly.

(iii) In yet another instance of purchase of ball bearings against an order issued by the DGS&D on a firm 'D' of New Delhi in January 1977 for a Russian make of imported bearing equivalent to SKF 1308, it was noticed that a batch of 1860 numbers was rejected by the consignee (Arakkonam Workshop) in March 1982 due to non-conformity with hardness range and material composition. After protracted correspondence, the firm agreed to the return of the bearings and a sum of Rs. 0.72 lakh was withheld by the Pay and Accounts Officer (Department of Supply). However, at this stage, the consignee advised in December 1983 that 'In view of the heavy pending orders for dip lorries the . . . .ball bearings have been allowed to be fitted in dip lorries'. The Administration finally agreed to accept the stores with a nominal pice reduction of 5 per cent and a formal amendment to the order was issued by the DGS&D in April 1984. This would reveal that rejected stores were not segregated for identification and the Administration had been compelled to accept sub-standard materials.

5. *Purchase of door hinge foot for fitting to BOX 'N' wagons*

A purchase order was placed on firm 'E' in June 1982—value Rs. 0.47 lakh, for 1,800 numbers of door hinge foot to specification IRS/W/DW/287 Alt. 4. After pre-inspection of the material by RITES the stores received in two batches of 800 and 1,000 respectively were rejected by the consignee for the reason that the hinges had been 'fabricated' instead of being 'solid' make as specified in the drawing mentioned in the purchase order. The firm then pleaded

that they had failed to note the reference to Alt. 4 indicated in the specification. Prior to the alteration in question, welded/fabricated construction was permitted as an alternative. When the matter was referred to RITES for clarification in regard to the failure to observe the latest Alt. 4, the Regional Manager/RITES stated that in other purchase orders placed on the same firm for the same stores, the Railway Administration had struck out the words 'latest Alt.' and further that the inspecting officer was misled by the order placed on the same firm.

The Regional Manager/RITES also stated that the fabricated design had been 'deleted nearly 20 years ago'. If this was the case, the entire system of tendering and provisioning by the Southern Railway for this item for many years has been conducted on the ambiguous specification modified years ago. These hinges were intended for fitment to BOX 'N' wagons which have a heavier payload than the conventional BOX wagons besides having a lesser number of side doors. The suitability of the door hinges procured, therefore, is not clear.

7. Eastern and Central Railways—Procurement of axles and wheel discs

The procurement of components such as wheels and axles required for maintenance of rolling stock is done centrally by Railway Board on the basis of annual indents placed by Zonal Railways. The preparation of indents takes into account the stock in hand, actual consumption in the six months before the indent, estimated consumption, etc. It was noticed in audit that the Central Railway and Eastern Railway had erroneously indented large quantity of wheel discs and axles the procurement of which resulted in idle investment of Rs. 59.27 lakhs (Rs. 10.10 lakhs in foreign exchange). Details of these cases are given below :

Eastern Railway—Axles

An indent for 30 axles for electric locomotives (WAM-2) for the period 1980-81, placed in April 1979 was included in global tender invited by the Railway Board in May 1980 as the capacity of M/s Tata Iron and Steel Company (TISCO) and Durgapur Steel Plant (DSP) had been fully booked for the year 1980-81 and as the axles were required by Eastern Railway urgently. The lowest offer for this type of axles was from firm 'A' at Rs. 1,865 per axle. Though the firm desired certain clarifications in the drawings, the offer was not considered by the Railway Board as it was deemed incomplete. The next higher offer of firm 'B' was accepted, involving extra expenditure of Rs. 1.38 lakhs and an order was placed in September 1980.

A consignment of 27 axles received at Calcutta Port in September 1981 was sent to Kancharapara Stores Depot in October 1982, after a delay of one year. A review by Audit showed that 27 axles (valued Rs. 1.81 lakhs) have not been utilised so far (December 1984).

Again in May 1980 the Eastern Railway Administration placed another indent for 100 axles (50 for WAM locomotives and 50 for WAG locomotives) This quantity was also covered by import in an order placed in February 1981 on firm 'A' at a cost of Rs. 8.29 lakhs. The axles received in August 1982 have not been utilised so far (December 1984).

A scrutiny of the indents placed by Eastern Railway showed that the justification for indenting 130 axles had not been worked out correctly; though the consumption in the past six years (1974—79) was only 7 (seven) axles, it was taken as 26 axles and the requirement inflated.

It would appear that the procurement of 127 axles valued Rs. 10.10 lakhs by import was avoidable.

Central Railway—Narrow Gauge wheel discs

Central Railway workshop at Kurduwadi undertakes periodical overhaul of Narrow Gauge (NG) rolling stock *i.e.* locomotives (98), coaches (380), and wagons (1997) used on Miraj-Latur and Daund-Baramati Narrow Gauge sections of Solapur Division.

Railway workshop at Kurduwadi assessed the requirement of 1600 wheel solid forge (drawing No. W/3140) machined for the period August 1980 to August 1982 and sent an indent to the Stores department for procurement. The indent was duly vetted by the Finance and was approved by Railway Board in September 1980. The indent was justified stating that the existing wheels of NG rolling stock had worn off and had reached condemning limits requiring 100 per cent renewal during periodical overhaul. The Stores department placed two purchase orders on M/s Tata Iron and Steel Company, Calcutta (TISCO) for supply of 1600 unmachined wheel discs (October 1980 and June 1982) as the firm did not have adequate capacity to supply machined wheel set discs. The purchase orders stipulated that unmachined wheel discs would be delivered first to Railway Workshop at Parel (BG) for machining and heat treatment and after machining these discs would be despatched to Kurduwadi for fitment during periodical overhaul of rolling stock. M/s. TISCO supplied 937 wheel blanks costing Rs. 49.17 lakhs (July 1983); the order for the remaining quantity of 663 nos. was cancelled.

Of the 937 wheel blanks received at Parel (October/November 1981 to July 1983) only 144 could be machined upto end of 1983 due to prior commitments and limited machining capacity at Parel Workshops. Kurduwadi Workshop also could not use the 140 machined wheel discs received from Parel, but could use only 4 nos. on three carriages and one locomotive; the rest of the machined wheel discs are lying unutilised (March 1984) either at Parel or Kurduwadi. At the present rate of machining done at Parel Workshop for these wheels, it will take several years to complete the work of 793 wheel discs. Further, these wheel discs after machining are to be fixed on to

Narrow Gauge axles which are to be forged from BG/MG condemned axles. The capacity for this work does not exist at Kurduwadi Workshop and that workshop also did not have any stock of NG axles. Kurduwadi workshop was, therefore, compelled to use the old wheel centres of the NG rolling stocks by machining them due to non-availability of machined wheels and axles.

(i) The delay in machining and failure to use even the few machined wheels have resulted in the non-utilisation of 937 wheels purchased at a cost of Rs. 49.17 lakhs. The resultant back log in renewal of wheels had led to detention to wagons in sick lines and workshop.

(ii) Incidentally, it was noticed that an amount of Rs. 0.90 lakh had been overpaid on account of incorrect classification under JPC schedule.

The Ministry of Railways (Railway Board) stated that the progress machining had improved and the work had been entrusted to Matunga workshop also. Upto August 1984, 266 wheel discs had been machined at Parel and 42 at Matunga workshop of which 176 had been used. It was also stated that the machining of all wheel discs would be completed by 1987.

It may, however, be mentioned that viewed in the context of the Railway workshop's capacity for machining and the need for using the wheel discs during P.O.H. of rolling stock, the procurement of 937 wheel discs costing Rs. 49.17 lakhs in October 1981—July 1983 was premature and excessive.

8. **South Eastern Railway—Avoidable import of corton steel**

Corton steel (2 mm thickness) approved (1978-79) for use in corrosion repairs to ICF and BEML-built coaches being not produced indigenously, the Ministry of Railways (Railway Board) obtained (January 1979) clearance from SAIL for import of Railways' requirements upto 1982-83. Between January 1980 and November 1982 the Railway Board concluded six contracts for import of 3,548 tonnes of corton steel to meet the requirement of the Railways for 1979-80 to 1982-83. A review in audit of these contracts revealed avoidable import worth Rs. 80 lakhs for South Eastern Railway in absence of any demand resulting in overstock (Rs. 21.09 lakhs), use of the material for other than corrosion repairs for which indigenously available cheaper variety of steel is specified, besides transfers to other Railways, involving extra expenditure of about Rs. 12.76 lakhs, as mentioned below :—

Between January 1980 and June 1981 the Railway Board had covered South Eastern Railway's requirements for 1979-80 to 1981-82 based on an anticipated monthly outturn of 28 corrosion repair coaches. Due to shortfall in outturn (16 coaches per month) the stock (498.94 tonnes) with the Railway in May 1981 turned out to be so heavy as to last about 20 months at the average monthly consumption rate for the actual outturn.

The Railway did neither advise the stock position nor place any indent for the first half of 1982-83 when called for (May and June 1981) by the Railway Board. Nevertheless, considering that the item was normally scarce and involved long lead the Railway Board decided (July 1981) to import the same quantity (640 tonnes) as projected by the Railway for 1981-82, on the presumption that requirements in 1982-83 would be at the level of the earlier year, if not more. The import requirement, thus finalised, was advised (August 1981) to the Railway for suggesting modification, if necessary. Even at this stage the Railway did not indicate the overstock position and the Railway Board covered the assumed requirement (640 tonnes) in the contract of December 1981. For the second half of 1982-83 also, the Railway did not submit any indent though called for (October 1981) by the Railway Board, yet the same quantity (640 tonnes) was repeated in the contract of November 1982.

Of 3,466.375 tonnes of imported steel received by the Railway between January 1981 and July 1983, only 1,447.194 tonnes was issued for corrosion repairs, 1,331.670 tonnes sold (1983-84) to other Railways/Production Units and 349.811 tonnes transferred to different units of the Railway for wagon repairs etc., leaving a balance of 337.7 tonnes at the end of May 1984. This stock would cater to the requirements for about 10 months at the consumption rate for the average monthly corrosion repair outturn of 22 coaches during January—July 1984.

The use of 349.811 tonnes of imported steel (Rs. 6.25 per kg.) on wagon repairs etc. for which cheaper indigenous M. S. Sheet (Rs. 4.67 per kg.) is the normal requirement, involved an extra expenditure of Rs. 5.53 lakhs. Further, the transfer of the materials from one station to another within the Railway and to other Railways, involved freight and handling charges amounting to Rs. 7.23 lakhs.

The following points deserve mention in this case :

(i) There were repeated (May 1981, August 1981 and October 1981) omissions on the part of the Railway to advise the Railway Board of the excess stock holding for regulating the import during 1982-83 ;

(ii) Import (December 1981 and November 1982) of 1280 tonnes steel by the Railway Board in absence of demands from the Railway was unwarranted and involved avoidable expenditure of Rs. 80 lakhs besides overstocking (Rs. 21.09 lakhs), especially when there was declining trend in the international steel price; and

(iii) Use of costlier imported steel for wagon repairs as also the inter and intra Railway transfers of the surplus stock entailed extra expenditure of Rs. 12.76 lakhs.

The case was taken up with the Railway Administration in April 1984, its reply is still awaited (December 1984).

9. **Eastern and South Eastern Railways—Procurement of wrong oils and lubricants**

Eastern Railway—Axle oil

In November 1979 the Railway Administration placed an order on firm 'A' for supply of 1.71 lakh litres of axle oil—value Rs. 10.26 lakhs, against running contracts placed by Director General of Supplies and Disposals (DGS&D). A quantity of 1.70 lakh litres was supplied by the firm between August 1980 and January 1982 in batches. The axle oil was tested in the Railway laboratory at Kancharapara in July 1981 and was found unsuitable. A joint inspection was conducted in September 1981 and samples tested by Research, Designs and Standards Organisation (RDSO) were found not suitable. A fresh sample drawn in February 1982 was tested by RDSO and was found suitable. In the meantime, the stores depot had accepted a quantity of 85,534.5 litres without further tests and had issued substantial quantity of the axle oil to the consuming departments. The Chief Mechanical Engineer reported that the axle oil received from the firm was not upto the specification and that its use was causing hot axle on the line.

The DGS&D was advised by the Controller of Stores in April 1982 that the supplies of axle oil had been rejected by the consuming departments, as also by the RDSO. On the basis of 1st test report of RDSO, the Ministry of Railways (Railway Board) had expressed the view against its use. The DGS&D was also requested to arrange for recovery of the amounts already paid to the firm and for removal of the rejected supplies. The Ministry of Supply, however, decided in September 1982 that the material should be accepted since it had been found suitable in the joint inspection by RDSO. Accordingly, the user department (Mechanical department) was asked to accept the material and make use of it.

Meanwhile, two more samples were taken from the supplies made in February 1982 and were tested by National Test House (NTH), Calcutta. Both the samples failed to meet the requirements according to the test certificates issued by NTH.

The Railway Administration stated (December 1984) that out of 1.70 lakh litres of axle oil received 1.34 lakh litres had been utilised and for the remaining quantity which stood rejected a claim was being lodged with the firm.

It is not clear how the RDSO and Railway Board who had expressed the view against its use advised the Eastern Railway Administration subsequently to accept the sub-standard axle oil. The tests conducted by National Test House had confirmed the unsuitability of the axle oil. Loss caused due to hot axles which results in detention to rolling stock has not been quantified.

The Ministry of Railways (Railway Board) stated (January 1985) that in respect of the rejected quantity, efforts were being made to recover its cost from the firm. In respect of the other quantity, as one batch had been accepted as suitable by the RDSO in February 1982, the Railway Administration had to use the material.

Eastern Railway—Oil machinery medium

In August 1979 the Railway Administration placed an order on firm 'A' for supply of oil machinery against DGS&D running contract. The firm supplied 39,260 litres in January 1982 duly inspected by the Director of Inspection (DGS&D). The Administration rejected the supplies in October 1982 and finally in March 1983, on the ground that the oil was unsuitable for use and may even damage different parts of the machines.

The DGS&D was requested by the Administration in October 1982 to dispose of the substandard oil and to recover the amount paid to the firm. The matter has not been settled so far (December 1984). The entire quantity of oil valued at Rs. 2.35 lakhs has been lying in the stores depot from February 1982.

The Railway Administration stated (December 1984) that the matter was being pursued with DGS&D, who have been asked to withhold an amount of Rs. 2.46 lakhs.

South Eastern Railway—Oil Enclo 85

'Oil Enclo 120' of M/s Hindustan Petroleum Corporation (HPC) or 'Servo system 553' of M/s Indian Oil Corporation (IOC) is used to lubricate parts of WAG electric locomotives.

Against an indent placed by South Eastern Railway for 65,959 litres of 'Oil Enclo 120' or 'Servo system 553' the DGS&D, inadvertantly, placed two orders, *i.e.*, one in December 1980 for 'Servo system 553' and the other in February 1981 for 'Oil Enclo 85'.

'Oil Enclo 85' is of different specification and is not an acceptable substitute for 'Enclo--120'. The Railway Administration, however, failed to notice that its indent had been covered twice by DGS&D and also a wrong lubricant had been ordered. Supply of 'Enclo 85', valued at Rs. 6.36 lakhs, was received in August 1981 and December 1981. The lubricant has not found any use so far. (December 1984).

10. **Central Railway—Supply of defective transformers**

Three transformers, 1500 KVA 3 phase, were procured by Central Railway Administration in January 1980 for Jhansi workshops from firm 'A' of Bhagalpur. The inspection conducted by Rail India Technical and Economic Services (RITES) in August 1979 consisted of routine tests only and did not include temperature rise test and impulse test specified in the purchase order (placed in December 1978). The temperature rise tests stated to have been carried out by the firm were accepted by RITES. In respect of impulse test, for which an extra amount of Rs. 0.15 lakh was payable, RITES accepted a test certificate furnished by the firm from Jadhavpur University, though it had not witnessed the tests. An amount of

Rs. 2.31 lakhs representing 90 per cent of the cost was paid to the firm on the basis of proof of despatch and inspection and the transformers were received in Jhansi workshops in January 1980. The inspection of the transformers by the Railway Administration in the workshop premises jointly with the firm revealed that the transformers had serious internal faults and were unserviceable.

The transformers were rejected by the Railway Administration in November 1980 within the guarantee period—*viz.*, 12 months from the date of despatch.

Though more than 4 years have elapsed since the transformers were supplied, the firm has neither repaired them to the satisfaction of Railways nor replaced them. Meanwhile, in July 1982, the Railway Administration came to know that the impulse test certificate furnished by the firm, stated to have been issued by Jadhavpur University was a fake certificate. In spite of this, the Railway Administration did not take action to recover the amount from the firm or to initiate other penal action.

The Railway Administration stated (October 1982) that the firm had agreed to complete the repairs within 3 months failing which to supply new transformers within 6 months. In March 1983, the firm furnished a Bank guarantee for Rs. 2.46 lakhs and collected the transformers for repairs. The transformers have not been returned by the firm so far (December 1984). The Bank guarantee expired in June 1984.

From the foregoing it would appear that (i) the Railway Administration had entered into a contract with the firm without verifying its technical capability,

(ii) the inspection conducted by RITES was perfunctory and did not include even the specified tests, and

(iii) the Railway Administration had failed to take prompt action against the firm in spite of the fact that it had submitted a fake Impulse Test certificate.

The Ministry of Railways (Railway Board) stated (January 1985) that a claim has been lodged with the State Bank of India, in May 1984 in terms of the Bank guarantee and efforts were being made to realise the amount of Rs. 2.46 lakhs.

11. South Central Railway—Procurement of high speed diesel oil for metre gauge diesel loco shed at Guntakal

The metre gauge diesel loco shed at Guntakal does not have a broad gauge (BG) link with Guntakal station. Consequently, the Railway Administration does not obtain supplies of High Speed Diesel oil (HSD) required at the diesel loco shed at Guntakal from the normal source, *viz.*, the main installation of the Indian Oil Corporation (IOC) at Tondiarpet (Madras). Instead, the supplies of HSD oil were being obtained locally from the Indian Oil Corporation at Guntakal by road in tank trucks (lorries). This involved additional payment of delivery charges and Andhra Pradesh General Sales Tax (present rate 13.1 per cent) at rates higher than the Central Sales Tax (present rate 4 per cent) which would have been payable if HSD oil had been obtained through railway tank wagons directly from the installations of IOC at Tondiarpet (Madras). In March 1976, the Railway Administration decided to lay a pipe line from the BG tank wagon siding to the metre gauge (MG) diesel loco shed at Guntakal at an estimated cost of Rs. 1.13 lakhs to facilitate obtaining supplies of HSD oil directly from Tondiarpet through BG tank wagons. The delay in taking firm decision and the extra expenditure of Rs. 15.90 lakhs arising on account of payment of higher rate of sales tax was commented upon in para 22 of the Report of the Comptroller and Auditor General of India for the year 1975-76—Union Government (Railways).

The work of laying a pipe line, though sanctioned, was not carried out. Instead, the South Central Railway Administration proposed to lay a BG siding connecting Guntakal station to the MG diesel loco shed at an estimated cost of Rs. 9.75 lakhs. This proposal was not approved by the Railway Board. As a result, the Railway Administration continued to obtain its entire requirements of HSD oil for the MG diesel loco shed at Guntakal locally by road till August 1981 and in part upto March 1982. From September 1981 HSD oil is being obtained from IOC's installations at Vasco-da-gama in MG railway tank wagons. This arrangement involves extra haulage cost on the metre gauge.

The IOC informed (February 1984) the Railway Administration that it is uneconomical to carry the supplies of HSD oil from Vasco-da-gama (which falls in Bombay pricing zone of Indian Oil Corporation) to Guntakal and suggested that either the Railway's requirements be met by road from their depot at Guntakal or the Railway Administration should develop facilities for receiving the oil from Tondiarpet (Madras) in BG tank wagons. It also stated that the Oil Co-ordination Committee had pointed out that the practice of making supplies from Vasco-da-gama should not continue beyond March 1984. The Railway Administration has, however, not so far developed siding and other facilities to obtain its supplies of HSD oil at Guntakal from the IOC's installations at Tondiarpet (Madras) through BG tank wagons.

Had the Railway Administration developed facilities to obtain the supplies of HSD oil at Guntakal through BG tank wagons from the IOC's installations at Tondiarpet, it could have avoided the incurrence of avoidable extra expenditure of Rs. 6.87 lakhs on account of cost of haulage during the period of 1982-83 and 1983-84.

12. Southern Railway—Procurement of mild steel cotters

Specified raw material for manufacture of mild steel (MS) cotters, used as fastenings for cast iron sleepers, is mild steel re-rollable billets. Keeping in view the acute shortage of this raw material in the country and the urgent requirements of cotters for various projects, the Ministry of Railways (Railway Board) temporarily relaxed (March 1979) the

specification by permitting the manufacture of cotters out of off-grade billets or structural steel ordinary quality.

Two separate tenders were floated by Controller of Stores of Southern Railway in July 1979 and September 1979 for the supply of 2,60,000 and 4,35,000 mild steel cotters respectively, without mentioning the relaxation in specification.

In October 1979 and December 1979 two separate orders were placed on firm 'X', whose offer was the lowest in each case at a rate of Rs. 1.25 per cotter and Rs. 1.50 per cotter respectively, with a price variation clause linked to the Joint Plant Committee (JPC) price of billets. In each case, the Railway further accepted the stipulation that essentiality certificate (EC) would be issued for the raw material required inclusive of wastage allowance of 30 per cent though the Chief Engineer was aware that essentiality certificates would not be issued by Railway Board for manufacture of cotters.

The firm had offered to supply 15 to 20 per cent of the order with cotters manufactured out of their own raw material provided the orders for the full quantity were placed on them. The balance quantities were to be supplied after receipt of raw material against the essentiality certificates and the supplies completed by 12th December 1979 and 30th June 1980 respectively.

The essentiality certificates were issued to the firm in July 1981 and November 1981 (*i.e.*, 21 months and 22 months after the purchase orders were placed). The firm did not, however, supply any cotter manufactured out of their own raw material on the plea that the Administration did not issue the essentiality certificates. Meanwhile, the price for the cotters had to be revised to Rs. 2.00 each and Rs. 2.213 each respectively for the two orders under the price variation clause, and the delivery dates extended, as desired by the firm, in stages upto 31st December 1982 for the first order and upto 8th June 1982 for the second without penalty.

The failure to incorporate in the tender the raw material relaxation and the acceptance of the firm's condition of supply being linked to the issue of EC by the Railway, resulted in an inordinate delay in supply as there was delay in the issue of the EC by the Railway Board. Consequently, the Railway had to foot the extra cost of Rs. 5.46 lakhs on account of increase in the price of billets. As a result, an extra expenditure of Rs. 5.46 lakhs was incurred. This includes the higher price paid (Rs. 1.04 lakhs) to the firm even in respect of the part quantity of the two orders that was to have been supplied by them by manufacture out of their own raw material at the original agreed rates.

A liberal wastage allowance of 30 per cent quoted by the firm was accepted, without ascertaining the reasonableness of the allowance, when the DGS&D was sent to have normally allowed only a wastage of 5 to 10 per cent for fabrication contracts. This had the effect of allowing the firm the advantage of drawing a scarce raw material, on payment of course, but in excess of normal requirement to the extent of 51.430 tonnes valued at Rs. 1.89 lakhs.

The Administration stated (March 1984) that even if the relaxation in the raw material had been made known to the tenderers, a lesser rate could not have been obtained as all offers unlinked with the issue of EC were higher than those that were linked with the issue of EC.

As the EC was issued for only tested billets, the rates of supplies out of tested billets unlinked to the issue of EC were higher. The structural steel ordinary quality was also authorised to be used as alternative, but the market had not been tested in this regard and hence the argument that even with the relaxation in specification the rates could not have been lower does not hold good.

The firm had themselves come up with the offer of a part quantity out of manufactures from their own raw material available on the date of contract, and acceptance of escalation claim of Rs. 1.04 lakhs for such supplies was against the legal opinion tendered.

13. Integral Coach Factory—Procurement of aluminium roof water tanks

The Integral Coach Factory (ICF) placed orders in May 1978 for purchase of aluminium roof water tanks manufactured out of 5 mm aluminium sheets on firm 'A' for 900 tanks at the rate of Rs. 2345 per tank and on firm 'B' for 912 such tanks at the rates of Rs. 2455 per tank for 322 tanks and Rs. 2495 per tank for the rest of 590 tanks. The delivery of tanks was to be completed by 15th June 1979 by firm 'A' and by 30th November 1978 by firm 'B'.

The specific central excise duty on commercial grade aluminium ingots used to roll out 5 mm aluminium sheets was withdrawn with effect from 18th October 1978 on abolition of dual pricing policy for aluminium. This led to reduction in the price of aluminium ingots from Rs. 13,620 per tonne to Rs. 12,258 per tonne. The reduction in price was partly by way of reduction in ex-factory price by Rs. 368 per tonne and withdrawal of the specific central excise duty at Rs. 800 per tonne plus 5 per cent special duty thereon. Reduction in central excise duty was also applicable to manufactures, *viz.*, aluminium sheet made by primary producers.

On 16th November 1978, the ICF Administration extended the delivery period of firm 'B' upto 15th February 1979 and on the same date increased the quantity on order on this firm by 273 water tanks (by exercising its option to increase the quantity on order by 30 per cent as per terms of contract) at the same rate, *viz.*, Rs. 2495, as in the purchase order placed in May 1978, though it was aware of reduction in the price of aluminium ingots.

In January 1979 the ICF Administration again floated tenders for the requirements of production programme for the year 1979-80 and on the basis of the offers received, placed purchase orders in April 1979 on the firms 'A' and 'B' for purchase of 724 and 723 water tanks respectively at the rate of Rs. 2345 per tank, without exploring the possibility of getting a reduction in price of aluminium ingots. The delivery of tanks was to be completed by February 1980 by firm 'A' and by October 1979 by firm 'B'.

The ICF Administration's decision to increase the quantity on order on firm 'B' in November 1978 as also its failure to take note of the reduction in the price of the commercial grade aluminium ingots at the time of considering the tenders in January 1979 and to secure corresponding reduction in the price of water tanks has led to incurrence of an extra expenditure of Rs. 1.81 lakhs.

The ICF Administration admitted (March 1984) that the facts regarding reduction in price of aluminium ingots and also a reduction in excise duty thereon were not highlighted in the review note leading to exercise of 30 per cent option, the briefing note for the tender committee considering the requirements of 1979-80 and the minutes of the tender committee meeting.

14. South Central Railway—Extra expenditure in procurement of brake beams

Brake beam, a wagon component, is replaced on condition basis during periodical overhaul (POH). This is manufactured by forging or by fabrication. The forged brake beams are costlier than the fabricated ones.

The South Central Railway Administration entered into a contract in March 1980 with firm 'A' for supply of 750 forged brake beams at Rs. 345 per item. The firm supplied only 106 brake beams by November 1980.

Open tenders were invited in August 1980 for supply of 6,390 forged brake beams. Five tenders were received in September 1980 and when these were under consideration, an unsolicited offer from a firm 'S' of Vijayawada was received (January 1981) through Deputy Chief Mechanical Engineer, Rayanapadu for supply of 'fabricated' brake beams at Rs. 380 per item. This offer was accepted by the Railway Administration immediately on single tender basis and an order was placed for 2000 brake beams in February 1981 on the plea that supplies against order placed on firm 'A' had not materialised. The rate of Rs. 380 was considered reasonable compared to the rate of Rs. 345 payable to the firm 'A'. However, the fact that this rate is for a forged brake beam, which was assessed to be costlier by Rs. 100 and also that five offers received in September 1980 were under consideration was not brought to the notice of the competent authority at the stage of obtaining the sanction.

The five offers received against the tender opened in September 1980 were considered and offer of firm 'B' at Rs. 430 for forged brake beam was accepted. An order was placed on firm 'B' in March 1981 for 2000 forged brake beams.

The firm 'S' of Vijayawada supplied 250 fabricated brake beams against 2000 ordered and asked (April 1981) for increase in price on account of increase in price of steel from February 1981. This request was turned down by the Railway Administration as the order placed did not contain any price variation clause. On a further request by the firm the Railway Administration allowed (July 1981) increase in price of Rs. 60 per item (*i.e.*, from Rs. 380 to Rs. 440) for the balance quantity of 1,750 nos. The firm completed the supplies by November 1981.

The Railway Administration placed a further order on firm 'S' for an additional quantity of 2,644 fabricated brake beams at Rs. 440 each in January 1982 with the condition that the supplies would be made only after March 1982 to match the availability of funds. The orders placed on firm 'A' and firm 'B' in March 1980 and March 1981 respectively for supply of forged brake beams were cancelled without financial repercussions.

The following observations are made in this regard :

The Railway Administration assessed in December 1981 that the fabricated brake beams would be cheaper by Rs. 100 per item than the forged type. This price differential between the fabricated and forged brake beams was not reckoned while justifying the acceptance of the rate of Rs. 380 quoted by firm 'S' and was not brought to notice of the sanctioning authority. The rate for forged brake beams obtained in September 1980 tender was Rs. 430 and the corresponding rate for fabricated brake beam should have been only Rs. 330 or less. Consequently the acceptance of the rate of Rs. 380 on single tender basis allowing increase of Rs. 60 over the accepted rate and placing further orders on the same firm at increased rates without inviting tenders was not justified. In fact, against the tender invited in April/May 1983 for fabricated brake beams the lowest rate accepted by Railway Administration was Rs. 315 per item thereby confirming that the rate paid to firm 'S' was excessive.

Computed with reference to the rate of Rs. 315 per item accepted in July 1983 (*i.e.*, 2 years later to the placement of order on firm 'S') the extra expenditure in the procurement of brake beams at higher rates works out to Rs. 5.67 lakhs.

15. Northeast Frontier Railway—Procurement of phosphating plant

Steel plates used on passenger coaches are given phosphating treatment as anti-corrosion measure.

The Ministry of Railways (Railway Board) directed the Zonal Railways in November 1973 to set up phosphating sections in their carriage and wagon repair workshops.

After considering a proposal for departmental fabrication of a phosphating plant in New Bongaigaon

workshop, the Railway Administration placed an indent on the Director General Supplies and Disposals (DGS&D) in August 1975 for procurement of the plant (Hot Dip type). The DGS&D, in turn, placed an order on firm 'A' of Bombay in May 1977 for supply of a phosphating plant at a cost of Rs. 3.35 lakhs including erection charges of Rs. 25,000. As per guarantee clause of the contract with the firm, the plant was required to give trouble-free working for a period of 12 months from the date of its commissioning and acceptance at site.

The plant though received in December 1977 was erected by the firm's representative in June 1979 as the civil works pertaining to the shed for its housing were completed in April 1979 only. However, the plant could not be commissioned soon thereafter due to non-availability of supply of electricity and the chemicals required for its operation. Power supply of 96 KW was made available in June 1979 and purchase orders for the chemicals were placed in February and August 1980 on another firm 'B' of Bombay at a cost of Rs. 77,535. These chemicals were received in March and April 1981 and the plant was commissioned by the firm's representative in December 1981, but it did not work satisfactorily.

As per item 5 of the general and special features of contract the electric load of the plant was estimated at 288 KW. As the power available (96 KW) in the plant was found to be inadequate, an additional transformer of 500 KVA capacity was installed in January 1984 to augment the supply. Even then, the plant did not function as its temperature did not rise to the desired level. In the meantime, the guarantee given by firm 'A' expired on 6th December 1982.

The chemicals procured (March and April 1981) at a cost of Rs. 77,535 also became unserviceable on expiry of their storage life of 2 years. Further, due to non-working of the plant, phosphating treatment to the steel plates of ICF coaches is not being given with the result that the coaches turned out after periodical overhaul are prone to excessive corrosion.

The failure to commission the plant purchased, within the guarantee period on account of faulty planning, has resulted in an infructuous expenditure of Rs. 4.13 lakhs. The Railway Administration, while admitting that the plant could not be used for the purpose for which it was intended, has stated that efforts were being made to rectify the defects.

16. Southern Railway—Excess payment of customs duty

Insulators of different varieties imported by the Ministry of Railways (Railway Board) at Madras Port were subjected to customs duty at 75 per cent of cif value under customs tariff heading 85.18/27(1) covering items 'not elsewhere specified' in that heading. On insulators imported *via.* Calcutta Port customs duty was levied under tariff heading 85.18/27(7) covering the said insulators and duty was paid at 45 per cent of cif value. Railway's claim for refund of Rs. 18.51 lakhs for levy of higher rate of duty was rejected (June 1979) by the Assistant Collector of Customs, Madras on the ground that the original assessment made by an officer above his rank could not be agitated before him and that the claimant, if aggrieved with the assessment, may obtain a speaking order for preferring an appeal.

The Railway Administration took more than two years to obtain (September 1981) the speaking order, an essential prerequisite for appealing for refund of duty. Meanwhile, duty on the consignments received during February 1979 and onwards was also assessed at higher rates and paid for by the Railway involving excess payment of duty by Rs. 195.41 lakhs.

After receipt of the speaking order the Railway Administration preferred (November 1981) an appeal to the Appellate Collector of Customs, Madras for refund of duty amounting to Rs. 18.51 lakhs on the initial consignments received in November 1978. The appeal was rejected in February 1982 by the appellate authority on the ground that the imported insulators, though of rating above 400 volts, were used in a distribution system and not in a transmission system and were not covered by tariff heading 85.18/27(7). The Railway Board, on being apprised of the position, advised (July 1982) the Railway to file a revision appeal with the Ministry of Finance, Department of Revenue challenging the decision of the Appellate authority, pointing out that technically the imported insulators rated at 44 KV (phase to phase) could go into no distribution system in the world but only into a transmission system and that the tariff heading 85.18/27(7) does not distinguish between transmission and distribution. The distinction drawn was only between voltages above and below 400. Insulators used in transmission system at voltages of 400 and above would fall under tariff heading 85.18/27(7). The patent anomaly in the rates of duty charged at the two ports (Madras and Calcutta) was not brought to the notice of the Ministry of Finance under the apprehension that the duty charged at Calcutta might be increased.

Out of the excess duty of Rs. 195.41 lakhs paid on the consignments received from February 1979, refund claims amounting to Rs. 20.88 lakhs for the shipments received upto April 1980 were not preferred by the Railway Administration till October 1984. Claims for refund of the balance Rs. 174.53 lakhs, though preferred (December 1982 to February 1984), are yet to be decided by the customs authority, except for an amout of Rs. 36.55 lakhs allowed (July 1984) to the Railway and rejection of Rs. 30.60 lakhs for which appeals are pending with the concerned Appellate authorities. The outcome of the appeal filed by the Railway Administration in pursuance of the Railway Board's directive (July 1982) is also still awaited.

Failure to apprise Finance Ministry of the anomalies in rates of duty charged for the same insulators imported *via* Calcutta and Madras Ports for bringing about uniformity in application of tariff resulted in continued over charging at the latter port, involving excess payment of about Rs. 195.41 lakhs. Preferment of claims for refunds of excess payments and/or appeals for rejection of claims was inordinately delayed by the Railway.

The levy of duties at higher rates, though pushing up the receipts of the Union Government at the cost of its own limb led to inflating the Railway's capital structure. The inflation in capital cost of rail facilities will manifest itself by way of hike in railway freight structure and consequential implications downstream.

17. **Western Railway—Payment of sales tax on sale of coal ash, scrap material, coal, cinder, etc.**

Section 6 of Rajasthan Sales tax Act, 1954 requires that every dealer liable to pay tax under the Act shall get himself registered as prescribed therein. Unserviceable and scrap material collected at various stores depots, coal ash accumulated at various points such as loco sheds and yards etc., were being disposed of by the Railway Administration through the agency of auctioneers.

The Rajasthan sales tax authorities directed the Divisional Superintendent (DS), Jaipur through a notice dated 22nd June 1970 to state why penal action should not be taken in terms of Section 16(1) (a) of the aforesaid Act in view of the Railway not having deposited sales tax in respect of sale of coal ash as leviable under the said Act. The DS held that the sales tax had to be paid by the auctioneers. This plea was, however, not accepted by the sales tax authorities and as per legal advice the DS, Jaipur applied for and was granted necessary dealership registration by the Rajasthan sales tax authorities on 11th November 1970 retrospectively from 1st April 1962. The sales tax authorities demanded sales tax amounting to Rs. 2.31 lakhs in respect of the sale of coal ash made during the period from 1962-63 to 1971-72 as per the records submitted by the Railway to the sales tax authorities. Since the DS had no record to produce in support of the contention that the sales tax as leviable under the Act was actually collected by the Railway auctioneers and deposited by them direct with the sales tax authorities, the full amount had to be paid by him in August 1980 after the Board of Revenue, Rajasthan rejected the plea of DS, Jaipur. On a further demand of sales tax on sale of coal and cinder to the Railway staff during the period 1st April, 1969 to 31st July 1977, the DS had to pay a sum of Rs. 0.55 lakh which amount has not been recovered from the staff. There is an additional demand from sales tax authorities for a sum of Rs. 0.94 lakh towards interest on sales tax arrears. This issue is yet to be settled.

The Administration became aware in July 1970, on the basis of legal advice, that the Railway should register themselves as dealers, and the Divisional Rail Manager (previously Divisional Superintendent), Jaipur had been granted such registration in November 1970. However, it did not take action for registration as 'dealer' in respect of sale of railway materials at other stations in Rajasthan.

On 19th April 1972, the Commercial Tax Officer, Ajmer served a notice on District Controller of Stores (DCOS), Ajmer for getting himself registered as dealer under the provisions of the Act and making the Railway liable for registration from 1964. The appeals preferred by the Railway Administration though initially admitted in June 1974 were rejected later on by the Deputy Commissioner of Commercial Taxes, Ajmer in September 1975 and by the Board of Revenue in January 1979 and finally in June 1980. Meanwhile, in pursuance of Railway Board's instructions dated March 1976 the DCOS, Ajmer got himself registered as a dealer in January 1977, having retrospective effect from 1st April 1964. The Sales Tax authorities finalised the assessments for the years 1964-65 to 1974-75 and demanded sales tax amounting to Rs. 13.48 lakhs in November 1979 which was revised to Rs 14.31 lakhs in August 1981. The Railway Administration has finally deposited a sum of Rs. 14.31 lakhs in June 1982. The Administration has also preferred an appeal against this assessment which is pending before the Board of Revenue, Rajasthan.

In this connection, it is to be stated that in 1970 the Railway Adminstration had become aware of its liability to get itself registered for payment of sales tax. Notwithstanding its contentions and appeals before the Board of Revenue, the Railway Administration could have collected details of amount of sales tax paid by the auctioneers on its behalf in order to safeguard itself against further taxation.

In fact, the agreement (May 1972) with the auctioneers provided that delivery orders (for stores auctioned) would be issued by railway only on production of cash receipts for the purchase price (less advance paid) together with the receipt of sales tax deposit. The Railway Administration did not take action to maintain the record of sales tax paid, if any, by the auctioneers though it had received a notice from the sales tax authorities in April 1972. Even when it became aware, in August 1975 of the auctioneers' application to sales tax authorities, in 1975 for de-registration (as a non-dealer) it failed to file appropriate proceedings before sales tax authority but merely asked the auctioneer to transfer the amount of sales tax collected by the latter. No legal remedy was even initiated. The auctioneers succeeded in getting themselves declared as 'non-dealer' in March 1980. The possibility of recovering the amount from the auctioneers therefore, appears to be remote.

The various lapses, in both the cases mentioned above, have resulted in avoidable payment of Rs. 17.17 lakhs.

The Railway Administration stated (January 1985) that—

(a) it was not aware of the applicability of Sales Tax Act to sale of scrap materials and coal ashes etc., till 1970,

(b) out of Rs. 2.31 lakhs, mentioned in the para particulars of payment of Rs. 0.62 lakh made by auctioneers to the sales tax authorities had been traced and that efforts were being made to trace the balance amount and thereafter to claim refund,

(c) an amount of Rs. 0.55 lakh was written off,

(d) in respect of payment of Rs. 14.31 lakhs being sales tax on sale of scrap, the amount would have to be termed as payment 'under statutory obligation' as no response was forthcoming from auctioneers in respect of sales tax already collected or paid by them, and

(e) as the appeal preferred by the Adminstration to Board of Revenue Rajasthan is pending it would be premature to conclude that the payment was avoidable.

Keeping in view the legal advice obtained by the Railway Administration in 1970, had the Railway Administration maintained the records of receipts of sales tax deposits by the auctioneers, the payment of major part of the amount of Rs. 14.31 lakhs could have been avoided.

18. Central, Southern, South Eastern and Northeast Frontier Railways—Procurement of dry batteries 'Leclanche' type

Batteries dry 'Leclanche' type are used in Railways for telecommunication, signalling, control telephones, gate telephones, arc and light repeaters and block instruments. Failure of these batteries directly affects the punctuality of train operations.

The Railways have been procuring batteries dry 'Leclanche' type to specification No. IS 586-1976 from a firm 'A' of New Delhi against running contracts of Director General Supplies and Disposals (DGS&D) entered into from time to time since 1977. In January 1979, the DGS&D informed the Controllers of Stores of all the Railways that in view of the reported unsatisfactory performance of the dry batteries (6-I cells) manufactured by firm 'A', the Ministry of Railways (Railway Board), in October 1978, had directed that no further supplies from the firm should be accepted unless the Research, Designs and Standards Organisation (RDSO) of Railways had completed detailed tests and cleared the stores as suitable. The DGS&D also advised the Controllers of Stores that the question of cancellation of the contract placed in March 1978 on the firm was under consideration in consultation with the Ministry of Law. Subsequently in March 1979, the Railway Board decided to accept the supplies subject to firm's guarantee for 9 months' shelf life.

Despite poor performance of the dry batteries supplied by the firm against earlier contracts, the DGS&D continued to place further orders on the firm and the Railways continued to accept them at considerable loss as mentioned in the following subparagraphs :

The DGS&D entered into a running contract with the firm 'A' in August 1980 for supply of 2 lakh dry batteries 'Leclanche' type—value Rs. 36.90 lakhs—to be supplied to various Railways.

The Central Railway received 27,256 dry batteries between September 1982 and November 1982 of which 13,206 numbers were not conforming to specification and 50 numbers were found short. Tests conducted by National Test House (NTH), Bombay (from samples drawn during joint inspection in January 1983) confirmed that the batteries had failed in the test. In the meantime, a further quantity of 3,698 batteries were rejected by the Railway Administration bringing the total rejections to 16,954 numbers, *i.e.*, 62 per cent of the supply. In December 1983, however, the sub-standard batteries were accepted by the Railway and DGS&D at a price reduction of 25 per cent of the basic price of Rs. 1,845 per 100 batteries offered by the firm. The performance of the batteries accepted at reduced rates is not known.

The Southern Railway received 15,591 dry batteries against the contract between May 1981 and September 1982. Though the Railway Administration informed the DGS&D in September 1981, about the substandard quality of batteries and the specific defects came to be known in December 1981, it did not take action to test, reject or stop further supplies. According to Railway Administration the defects could be noticed after the batteries were put into use for some time. Only in March 1984 the DGS&D was informed that 13,922 batteries were of poor quality (*i.e.* about 89 per cent of the supply) and that its life was about 120 days against 300 days specified. The question of acceptance of sub-standard batteries at reduced price is stated (June 1984) to be under correspondence between the Railway Administration and DGS&D.

The South Eastern Railway received 13,035 batteries against August 1980 contract of which 1,005 were rejected. The firm refused to replace the batteries under warranty and held that replacement was possible only if the consignee had rejected the stores within 45 days of actual delivery of consignment. According to the Railway Administration the batteries supplied by the firm lasted for 17 per cent only of the guaranteed life.

In addition, South Eastern Railway Administration had received 16,072 and 17,800 batteries against DGS&D running contracts placed in March 1981 and July 1982 respectively. These were also of poor quality.

The Northeast Frontier Railway Administration received 10,553 batteries against the August 1980 contract of which 6,006 batteries were rejected by it. The final outcome of the rejections is not known.

From the facts mentioned above, it will be observed, that :

(i) In spite of sub-standard supplies by the firm against earlier contracts, the DGS&D had chosen the firm for ordering large quantity in August 1980, valued at Rs. 36.90 lakhs and again in March 1981 and July 1982—value Rs. 41.31 lakhs and Rs. 9.81 lakhs respectively.

(ii) Even after the initial reports by Railways about poor quality, subsequently confirmed by National Test House, Bombay, the Director of Inspection (DGS&D) continued to accept the supplies.

(iii) In the face of 62 to 89 per cent of supplies not conforming to specification, the reduction of 25 per cent only in price accepted by DGS&D and even that for a part quantity (of Central Railway) was not justified.

(iv) The Railways had not taken prompt action to test the supplies and reject them though they were aware of past performance of the firm.

Consequently, the Railways have suffered substantial loss because of the need for frequent replacements of batteries supplied by the firm which failed in service or in storage before being put into use.

The paragraph was issued to Central, Southern, South Eastern and Northeast Frontier Railway Administration in September 1984; their replies are awaited.

The DGS&D has stated (December 1984) that—

(a) it was not correct to say that the firm was chosen despite sub-standard supplies,

(b) the test conducted by National Test House was only in respect of heavy intermittent discharge test and not in respect of all the parameters of Indian Standards (I.S.) Specification, and

(c) the reduction in price was accepted only for the Central Railway consignee on the ground that the storage conditions were not those stipulated in the I.S. Specification.

It may, however, be mentioned that the firm was chosen by DGS&D in spite of the fact that there were a large number of complaints/rejections in the supplies against earlier contracts on the same firm. The battery cells ordered were to conform to I.S. specification and tests conducted by National Test House had shown that the cells supplied by the firm had a life of as low as 14 hours against 110 hours required. The contention of the DGS&D that the NTH tested only one of the parameters of I.S. specification does not appear to be relevant. In view of the very low life, as shown by tests conducted by NTH, the reduction in price of 25 per cent only does not seem to be adequate. The issue of price reduction in respect of supplies to Southern Railway has not been settled so far (January 1985).

CHAPTER V

WORKS AND OPERATION

19. North Eastern Railway—Gauge conversion of branch line between Sonepur and Palezaghat

Original estimate (April 1972) for conversion of main line between Samastipur and Barabanki from Metre Gauge (MG) to Broad Gauge (BG) did not provide for the conversion of Sonepur-Palezaghat branch line (5.5 km). A ferry service had been plying between Palezaghat and Mahendrughat—connecting North Bihar with Patna. Later, while submitting the survey report prepared at the behest of the Ministry of Railways (Railway Board) (June 1974), General Manager, North Eastern Railway, stated (May 1976), *inter alia*, as under :

1. Prior to conversion of Muzaffarpur-Sonepur section (on the main line between Samastipur and Barabanki), 6036 passengers were being ferried daily between Palezaghat and Mahendrughat in both the directions; but after the conversion 1118 passengers daily had been diverted to road in both the directions.

2. There had been a large number of representations from the public regarding inconvenience caused to them for not converting Sonepur-Palezaghat branch line into Broad Gauge.

However, the Financial Adviser and Chief Accounts Officer of the Railway made (May 1976) the following observations in this connection :

(i) The project is mainly justified on the grounds, *inter alia*, that conversion would avoid transhipment at Sonepur in the case of passengers coming from Muzaffarpur side *via* BG route. While the passengers using B.G. services from Muzaffarpur side would benefit from the conversion, the passengers reaching Sonepur via MG route from Chhupra, Barauni and Bachwara sides would still be put to almost equal inconvenience.

(ii) The techno-economic study conducted by the National Council of Applied Economic Research (1968) had estimated that almost all the local traffic now moving by rail between Sonepur and Mahendrughat would be diverted to the new road bridge connecting Hajipur with Patna, expected to be completed by June 1978.

(iii) The project was not financially viable as the rate of return was only 4 to 5 per cent for the first two years, that is, till opening of the new road bridge, and thereafter it would be only 3 to 4 per cent for the entire life of the project, viz., thirty years.

(iv) The proven utility of the project would be for a period of 2 years only, and thereafter there was no clear indication about the retention of the line itself and the connected ferry service.

(v) The project was justified not on operational considerations but for the convenience of a section of travelling public.

As the Railway Administration had (May 1976) no definite data about the exact quantum of rail-cum-ferry traffic that would be moving by this route after the opening of the road bridge, they suggested to the Ministry of Railways (Railway Board) that on completion of the road bridge, another traffic survey should be conducted to determine retention of the above branch line.

The Ministry of Railways (Railway Board) directed (February 1977) the Railway Administration to make a realistic assessment of (i) the trend of passenger traffic converging from different routes on Sonepur-Palezaghat branch line since the gauge conversion of Muzaffarpur-Sonepur section of the main line and (ii) the traffic pattern after the completion of the road bridge at Hajipur.

The Railway Administration stated (May 1977) in reply as under :

(i) The daily average of passengers converging from different routes on Sonepur-Palezaghat branch line had decreased from 1098 in 1975-76 (before completion of gauge conversion on Muzaffarpur-Sonepur section in February 1976) to 661 in 1976-77 (upto February 1977), indicating overall decline of 40 per cent.

(ii) No definite data could be furnished about the exact quantum of traffic that would be moving by rail-cum-ferry service even after the opening of the road bridge. The Government of Bihar had intimated that road bridge would not be completed before 1978-79.

Despite the fact that the existing M.G. track was more than sufficient to meet the current traffic, and a further decline even in this meagre traffic was apprehended after opening of the road bridge under construction, the Ministry of Railways (Railway Board) sanctioned (October 1977) an abstract estimate (Rs. 31.27 lakhs) for providing BG/MG mixed gauge between Sonepur and Palezaghat, as a material modification to the project "Gauge conversion of Barabanki-Samastipur main line". The cost was subsequently modified to Rs. 27.77 lakhs in August 1978. As the work had been treated as a part of the main project, no separate account of the expenditure (incurred) on this work was maintained. The expenditure which could be identified as relating to this work has been assessed at Rs. 27.16 lakhs (March 1979).

The work was completed and opened to traffic in October 1978; but its maintenance remained with the BG Construction Organisation for 14 months till December 1979.

The road bridge was opened to traffic on 2nd March 1982. A reduction in traffic carried by rail-cum-ferry service was noticeable immediately thereafter, as indicated below :

Name of the station	Average number of tickets sold daily during		Percentage of reduction in the number of tickets sold
	20th to 31st March 1981	20th to 31st March 1982	
Palezaghat . .	3888	1907	50
Mahendrughat . .	4734	2286	51

According to an assessment made by the Railway Administration in April 1982, the reduction in the passenger traffic as a result of opening of the road bridge was 80 per cent, as compared to the corresponding period of the previous year and atleast 4 out of 7 pairs (up and down) of steamer services would require to be cancelled.

Further investigation by Audit (August 1982) revealed that rail traffic after opening of the road bridge in March 1982 had been declining steeply, as indicated below :

Name of the station	Daily average of No. of passengers/ earnings (February 1982)	Daily Average of No. of passengers/ earnings (July 1982)	Daily Average of No. of passengers/ earnings (August 1982)	Percentage of reduction in No. of passengers/earnings (Col. 4 to 2)
1	2	3	4	5
Palezaghat	3701	284	248	93
	(Rs. 7,946)	(Rs. 1090)	(Rs. 1129)	86
Mahendrughat	5314	313	287	94
	(Rs. 19,792)	(Rs. 1321)	(Rs. 1174)	94

The declining trend of traffic forced the Railway Administration to close plying of ferry services between Palezaghat and Mahendrughat on and from 29th August 1983. The running of B.G. trains on Sonepur-Palezaghat section was also stopped with effect from 1st April 1984. Consequently, the mixed gauge track laid on Sonepur-Palezaghat section at a cost of Rs. 27.16 lakhs became redundant. Besides, tickets numbering 50.14 lakhs and costing Rs. 12.54 lakhs (inclusive of printing charges) were rendered surplus/obsolete, and had to be destroyed (February 1983 and December 1983). It may be added that the Railway Administration, with a view to checking the diversion of rail traffic to road, has entered into contract agreement with private bus operators to ply railway passengers from Hajipur to Mahendrughat (Patna) and *vice versa* on the road bridge with effect from 6th January 1984.

The Railway Administration stated (November 1983) that the B.G./M.G. mixed gauge had been provided between Sonepur and Palezaghat in order to enable passenger traffic from Muzaffarpur area to be taken to Palezaghat without any transhipment at Sonepur.

It was not prudent on the part of the Ministry of Railways (Railway Board) to have sanctioned provision of mixed gauge track for Sonepur-Palezaghat MG branch line in October 1977 in the context of the following known facts :

1. A road bridge was already under construction by the State Government of Bihar in the area served by the branch line, and the existing rail borne traffic was likely to be diverted to road on the completion of the road bridge.

2. The North Eastern Railway Administration had twice conveyed (May 1976 and May 1977) to the Ministry of Railways (Railway Board) that no definite data could be had about the exact quantum of traffic that would be moving by rail-cum-ferry service after opening of the road bridge.

3. The conversion of the branch line was neither financially viable, nor operationally needed.

4. The capacity of the existing M.G. track was more than sufficient to meet the current traffic.

5. Maintenance of this railway line for 14 months by the Construction Organisation after its completion has added unproductive capital burden on the Railways.

20. Western Railway—Unnecessary provision of (i) two broad gauge by-pass lines and (ii) additional transhipment facilities at Ratlam

I. *By pass lines*

A Traffic Survey Team set up by the Ministry of Railways (Railway Board) in October 1972 to assess the extent of rail transport facilities required to match nearly 100 per cent increase in coal production by the end of the fifth five year plan (1974—78) recommended (December 1975) provision of a separate down yard consisting of 2 broad gauge (B.G.) by-pass lines on the west side of main line opposite the up reception yard, in order to facilitate change of locomotives of the various by-pass trains at Ratlam. A detailed estimate for Rs. 43.7 lakhs was sanctioned on 22nd February, 1979. The work had already been commenced on 25th December 1978. Reasons for the commencement of the work prior to the sanction of the estimate are not known.

Meanwhile, in a meeting held at Bombay on 6th February 1979 between the Director General, Transport, Railway Board, Chief Operating Superintendents and Chief Mechanical Engineers of Northern, Central, Western, South Central and South Eastern Railways, it was concluded as under :—

"With the objective of improving the mobility of trains and thereby the turn-round of locomotives and

wagons, the major thrust by way of extending the concept of integrated operation has to be continued. End to end running of trains across major interchange points will be adopted to the maximum extent possible".

As a result of this integrated operation, the locomotives started plying on a wider area and the need for change of locomotives of by-pass trains at Ratlam yard was almost eliminated. The total expenditure incurred on the new down yard till February 1979 was Rs. 1.85 lakhs. No instructions were, however, issued by the Ministry of Railways (Railway Board) or the Railway Administration to stop further work in the yard immediately thereafter.

The Ministry of Railways (Railway Board) had issued instructions in August 1981 that all Jumbo/BOX rakes should be subjected to intensive examination on originating station itself instead of conducting examination enroute. Besides, General Manager, Western Railway decided in July 1980 that in order to maximise through running of trains, all trip schedules (periodical repairs) of the locomotives of diesel shed, Ratlam, should be concentrated at points outside Ratlam.

In the context of the aforesaid measures aimed at integrated operation, the work of providing two additional by-pass lines sanctioned in February 1979 had become redundant. However, no action was taken by the Railway Administration to stop construction on this work till August 1981 when it was frozen. It was only in October 1982 that the Divisional Railway Manager, Ratlam finally decided that there was no need to provide these two by-pass lines at Ratlam. The total expenditure incurred on this work upto July 1982 was Rs. 37.27 lakhs including Rs. 1.97 lakhs for electrical portion not adjusted. Even after allowing for Rs. 24.59 lakhs for likely retrievable items, the infructuous expenditure on this work is assessed at Rs. 12.68 lakhs.

The following points arise :—

(1) After having taken a policy view in regard to integrated operation in February 1979, the Ministry of Railways (Railway Board) did not issue any followup instructions to the Railway Administration for stoppage of works not found necessary in the changed context.

(2) After having come to know in February 1979, that the new yard at Ratlam was no longer required, the Railway Administration did not take timely action to stop further work in the yard.

This para was issued to the Railway Administration in August 1984; its reply thereto is still awaited (December 1984).

II. *Additional transhipment facilities*

The Railway Works Programme for 1972-73 provided, *inter alia,* for additional transhipment facilities to deal with anticipated increase in traffic from 35 wagons per day to 63 wagons per day at Ratlam at an estimated cost of Rs. 32.89 lakhs. The work commenced in March 1979 and an expenditure of Rs. 11.95 lakhs was incurred till September 1980 for providing the following facilities :

(i) extension of existing loose transhipment platform where rock phosphate and other loose traffic was transhipped, and

(ii) provision of separate transhipment platform with a dump in the loco shed area for transhipment of coal.

In the meantime the survey for a new BG line between Kota and Chittaurgarh had been included in the budget for 1979-80 (presented in February 1979).

Further work on the provision of additional transhipment facilities at Ratlam was discontinued by the Railway Administration in October 1980 in view of the consideration that the proposed new BG Kota-Chittourgarh link would in course of time lead to transhipment at Chittaurgarh instead of Ratlam. The resultant infructuous expenditure on this account at Ratlam has been assessed at Rs. 9.01 lakhs (after allowing credits for materials likely to be released). The actual daily transhipment of wagons during 1977-78 (before the commencement of work in March 1979) to 1980-81 (when the work was discontinued in October 1980) was in the range of 24 to 36 wagons per day, which was nearly within the existing capacity of 35 wagons per day.

The Railway Administration stated (April 1983) that the aforesaid figures (24 to 36 wagons per day) pertained to overall (annual) averages, while in certain months (July and September 1979) the average had touched 47 wagons per day. It may be pointed out that the cases of increased daily averages of transhipment in certain months could only be taken as stray instances, and did not justify creation of additional facilities, so long as the overall yearly figures ranged in the proximity of the existing capacity of 35 wagons per day. The work included in 1972-73 works programme was commenced in March 1979 when it had already become known to link Chittaurgarh with Kota by a Broad Gauge line.

The above two cases are indicative of the lack of total view of perspectives and co-ordinated planning.

21. Southern and South Central Railways—Extra expenditure owing to inadequate planning

Extant instructions of the Ministry of Railways (Railway Board) envisage that planning of works should be done with adequate care and in sufficient detail and that the final scope of a work should be fully determined before tenders are invited, so as to avoid large variations, later on, in the quantity of work. Two cases of letting out works without adequate planning are reported below :—

I. *Southern Railway*

The Ministry of Railways (Railway Board) sanctioned in October 1980 an urgency certificate amounting to Rs. 53.25 lakhs for works to be executed in

connection with the setting up of a new Divisional office at Bangalore. This included a provision of Rs. 10 lakhs for construction of four temporary sheds for office accommodation. No detailed plans for the sheds had been drawn up before inviting the tenders (September 1980) and the contract with a completion period of three months awarded (November 1980). In the Tender Notice the various items of work were grouped under two schedules 'A' and 'B' to cover items included under the Basic Schedule of Rates (BSR) and lump sum quotations for specific items respectively. The work was awarded (November 1980) to contractor 'N' whose tender (value : Rs. 6.27 lakhs) was the lowest both in terms of the premium over BSR and the lump sum rates quoted for the specific number of items included in schedule 'B'.

The work was started by adopting details and plans for sheds erected in the Wheel and Axle Plant. However, the plans were found unsuitable for the requirements of the Divisional offices. As compared to the contracted quantities the work involved many variations in the quantities of items under Schedule 'A' beyond the permissible tolerance of 25 per cent, besides an increase in the number of items in Schedule 'B' and introduction of many new items under both the Schedules.

The construction of the sheds proceeded without any rates being fixed in advance for new items. The contractor demanded higher rates ranging from 250 per cent to 300 per cent over SSR (as against tender percentage of 112 per cent) and accepted payments 'under protest' without prejudice to his claims. The contractor claimed in January 1983 an additional sum of Rs. 6.85 lakhs (including element of interest of Rs. 1.45 lakhs for delayed payments). Though the work was completed in July 1981 (as against the scheduled date of February 1981), the agreement was kept current by successive extensions and even by July 1984 the contractor's claims were not settled. The total payments made to the contractor amounted to Rs. 10.06 lakhs. The Contractor sought arbitration the outcome of which is awaited (July 1984).

After completion of the work the detailed estimate for the sheds was sanctioned in September 1983 for Rs. 21.14 lakhs.

The following points arise in this case :—

1. The work of putting up temporary sheds is obviously not of such complicated nature that details of requirements could not have been settled before the tenders were called ;

2. Though the work had been completed in July 1981, the contract has not been finalised as many items of work were got executed without settlement of rates before-hand.

3. The value of the contractual portion of the work is likely to go up from Rs. 6.27 lakhs to Rs. 14.25 lakhs (127 per cent increase), taking into account the contractor's claims (excluding interest). A final picture will emerge after the arbitration award is made.

Though the work was sanctioned on urgency certificate in October 1980, the detailed estimates were sanctioned only in September 1983.

The Administration stated in July 1984 that the work was taken up with details obtained from the Wheel and Axle Plant due to paucity of time and that the drawings and plans were drawn up "progressively as the work was being executed". It was also stated that action was taken to settle rates for various items of work through negotiations but the rider agreement could not be executed before the work was done "in view of the urgency and practical difficulties which were beyond the control of the Administration".

While the above explanation reveals a lack of planning in execution of the work, the payment of higher rates for certain items of work without execution of a formal agreement has kept the way open to the contractor to demand even higher rates by resort to arbitration.

II. *South Central Railway*

A contract (value : Rs. 22.03 lakhs) for earthwork in formation, construction of bridge etc. in Reach III of new broad gauge (B.G.) line from Manickgarh to Chandur (28.6 Km.) was awarded to Shri 'Y' in April 1981 with completion period scheduled for 12 months. The contract included construction of a major bridge across "Rajura Nallah". After only 20 per cent of the earthwork had been done during the first seven months, the contractor stated (November 1981) that he had learnt that the open foundations as provided in the contract would have to be changed to well foundations, and hence he offered to the withdrawal of the bridge work, alongwith earthwork in approaches, from the scope of the work, without any liability on either side. The Railway Administration, without consulting their Associate Finance, accepted the contractor's offer on 24th April 1982, resulting, *inter alia*, in deletion of 25000 M^3 (out of the total contracted quantities of 70,000 M^3) of earthwork in embankment with contractor's earth (alongwith dry compaction) valuing Rs. 3.25 lakhs. This reduction in quantities of contractor's earth was allowed despite the fact that the insufficiency of Railway earth was already known to the Railway Administration in March 1982. Within two days of the Administration's acceptance of the contractor's offer, he requested on 26th April 1982 for an increase in the rate of earthwork with contractor's earth.

After executing the reduced quantities (70,000 M^3 minus 25,000 M^3 = 45,000 M^3 plus 25 per cent tolerance) of earthwork with contractor's earth, the contractor asked for (August 1982) higher rates as under :—

Description of work	Original rate	Rate demanded
	(Rs. per 10 M^3)	(Rs. per 10 M^3)
Earthwork in embankment with contractor's earth . . .	110	250
Extra for dry compaction . .	20	35

The following variations in the estimated quantities of the two types of earthwork were noticed in the course of an assessment made in September 1982.

Description of work	Quantity provided in the contract		Revised Qty. to be done	Increase (+) Decrease (—)
	Original	Modified after deletion of bridge work		
	(In M3)	(In M3)	(In M3)	(In M3)
(i) Earthwork in embankment with Railway's earth	1,32,000	1,32,000	42,300	(—)89,700
(ii) Earthwork in embankment with contractor's earth	70,000	45,000	1,39,000	(+)94,000

After negotiations, the contractor offered the revised rates of Rs. 205 and Rs. 25 per 10 M^3 for earthwork with contractor's earth and for compaction respectively. The tender committee (consisting of two officers instead of three officers as prescribed) recommended acceptance of these rates after comparing them with the rates obtained in August/October 1982 for earthwork with contractor's earth in three reaches of Wirur-Makudi-Sirpur doubling project, *viz.*, Rs. 220, Rs. 210 and Rs. 239 per 10 M^3 respectively. The enhanced rates were accepted by the Administration on 19th November 1982.

While recommending the above higher rates, the committee had not taken cognisance of the rates of Rs. 135 and Rs. 20 per 10 M^3 obtained in July 1982 for earthwork with contractor's earth and for dry compaction respectively in the case of 'Rajura Nallah' bridge. The latter were more relevant in asmuch as these pertained to a work within the same reach of the same project, and had been found to be reasonable on the basis of an independent rate analysis done by the Administration. Thus, the increase in rates over and above those of 'Rajura Nallah' was not justified.

The Railway Administration incurred an extra expenditure of Rs. 6.90 lakhs on account of its decision to reduce 25,000 M^3 of earthwork with contractor's earth from the scope of the contract (Rs. 3.12 lakhs) and acceptance of higher negotiated rates (Rs. 3.78 lakhs).

The above changes made in the course of execution of the work resulted in vitiation of the initial evaluation of tenders made at the time of awarding of the contract. In consequence, the second lowest tenderer would be lower than the lowest tenderer to whom the work was awarded, by Rs. 1.28 lakhs.

The following are the main points in this case :

(i) After 20 per cent of earthwork had been completed, it became known that the open foundations of the bridge work as provided in the contract would have to be substituted by well foundations. This shows that the work had been commenced without finalising the plan/design of the major bridge.

(ii) The substitution of large quantities of 'earthwork with railway's earth' by 'earthwork with contractor's earth' shows that proper survey had not been done and trial pits had not been dug in order to determine the extent of availability of railway's earth.

(iii) While agreeing to the contractor's offer for deletion of the bridge work from the scope of the contract, it was neither mandatory nor judicious on the part of the Railway Administration to have agreed to deletion of 25,000 M^3 of 'earthwork with contractor's earth', particularly when it had already come to know of the in-sufficiency of railway's earth for the work.

(iv) The Railway Administration stated (May 1984) that the rate of Rs. 135 per 10 M^3 adopted for earthwork with contractor's earth in the case of Rajura Nallah bridge could not be applied to Reach III in general, as the latter involved more lift. This plea is not tenable inasmuch as the tender committee did not evaluate this rate alongwith the extra lift, if any, for comparison with the rate recommended by it for contractor 'Y'.

The above paras were issued to the concerned Railway Administrations in September 1984 and August 1984 respectively; their replies thereto are still awaited (December 1984).

22. Western Railway—Extra liability due to termination of a contract without enforcement of the contractual provisions

The Railway Administration awarded (May 1978) a contract valued at Rs. 36.61 lakhs to firm 'A' for quarrying, loading and supplying stone ballast/broken stone/rubble/crusher dust from the Railway quarry at Virar for a period of three years. The rates and quantities provided in the contract for the various items were as under :—

Sl. No.	Description of item	Rate	Quantity
		(Rs. per cum)	(cum.)
1.	Stone ballast 1½" gauge	23.34	1,25,000
2.	Stone ballast 1" gauge	23.34	9,000
3.	Broken stone ¾" to ¾" gauge	23.34	5,000
4.	Rubble	14.00	10,000
5.	Crusher dust	7.00	1,000
6.	Loading in wagons	1.80	1,50,000

The supply was to commence three months after award of the contract or handing over the possession of the quarry. Though the possession of the quarry was offered by the Administration in June 1978, the firm took it over in August 1978, and commenced the supply in December 1978. Till October 1979, the

firm supplied only 8,906 cum. of stone ballast as against 55,000 cum. required to be supplied.

The firm explained (November 1979) that their failure to supply the required quantity of metal was due to general price rise which had affected their working adversely. The firm demanded enhancement in the contracted rates, as indicated below :—

Sl. No.	Description of item	Rate (Rs. per cum.)
1.	Stone ballast 1½" gauge	30.00
2.	Stone ballast 1" gauge.	30.00
3.	Broken stone ½" to ¾" gauge	30.00
4.	Rubble	16.10
5.	Crusher dust	7.00
6.	Loading in wagons	3.40

The total increase aggregated to Rs. 12.51 lakhs, *i.e.*, 34 per cent of the total value of the work. The Administration made an assessment (March 1980) of the prevailing market trends and found that the rate likely to be obtained for the main items, viz., quarrying and supplying stone ballast/broken stone would be Rs. 46 per cum. as against Rs. 30 demanded by the contractor. The Administration, however, was not in a position to enhance the rates as there was no provision for price escalation in the contract. The approval of the Railway Board for enhancement in rates was also not sought on the plea that it would involve considerable time while the ballast was required urgently. The contractor was ultimately informed on 17th July 1980 about the Railway's inability to allow any increase in the rates. The firm requested the Administration on 22nd July 1980 to close the contract without financial repercussions on either side. The Administration agreed and a minute sheet to this effect was executed by both the parties in September 1980, and security deposit of Rs. 43,890 was refunded.

The Railway Administration invited fresh tenders (October 1980) and awarded the work to another contractor 'B' (February 1981) at the following higher rates :

Sl. No.	Description of item	Rate (Rs. per cum.)
1.	Stone ballast 50 mm gauge (nominal)	37.00
2.	Stone ballast 25 mm gauge	45.00
3.	Broken stone (6 mm to 19 mm)	45.00
4.	Rubble	29.00
5.	Crusher dust	25.00
6.	Loading in wagons.	5.00

These rates were higher than even the enhanced rates demanded by the contractor 'A'. The extra liability involved in obtaining the residual supply at the new contract rates is estimated at Rs. 24.19 lakhs on the basis of original rates of contractor 'A' and at Rs. 10.80 lakhs on the basis of the enhanced rates of contractor 'A'.

The following comments arise in this case :—

(1) Contractor 'A' was not penalised for delayed commencement of supplies.

(2) Contractor A's security deposit of Rs. 43,890 was not forfeited for breach of contract on account of short supplies.

(3) The Railway Administration did not terminate the contract at the risk and cost of the defaulting contractor. Had this been done, the Railway Administration would have been entitled to effect recovery of Rs. 24.19 lakhs from contractor 'A'.

(4) Even after estimating cost escalations, Administration did not attempt to negotiate a suitable rate with the existing contractor. Had this been done, extra liability of Rs. 10.80 lakhs arising out of retendering could have been avoided.

This para was issued to the Railway Administration in August 1984; its reply thereto is still awaited (December 1984).

23. Western Railway—Delay in providing a turn-table at Kharaghoda

Turn-table with 45′ dia installed at Kharaghoda was inadequate in size to turn W.G. locomotives, deployed on Viramgam—Kharaghoda section (36 Kms) after relaying of track with 90 R rails in 1970. Consequently, the W.G. locos in tender-foremost position from Kharaghoda to Viramgam, could not run at the normal speed. The speed was further restricted to 25 Kmph in Viramgam—Kharaghoda Section as ballasting of the track had not been done after its relaying in 1970.

The Railway Administration decided (May 1972) to replace the above turn-table by 75′ dia turn-table (September 1973) at an estimated cost of Rs. 2.40 lakhs, with scheduled date of completion as March 1975. The work of fabrication of girders of the turn-table was entrusted to the Engineering Workshop at Sabarmati in July 1974. The Workshop Manager advised, in August 1974, that only main girders for the turn-table would be manufactured in the workshop and all other mechanical parts should be procured directly from the Mechanical Department. Fabrication of the girders was completed by the Workshop in April 1977 and the girders were despatched to the site of the work in June 1977. The Civil Engineering portion of the work was completed by the end of May 1977. The Railway Administration, however, took no action during this period to procure the other mechanical parts required for commissioning of the turn-table. Order for manufacture of mechanical components was placed on loco workshop at Dahod only in February 1978.

The work was ultimately dropped in April 1982 on the ground that steam locomotives were no longer used on Viramgam-Kharaghoda Section due to dieselisation with effect from August 1980.

The expenditure booked against this work upto December 1982 was Rs. 3.29 lakhs. Of this, an expenditure of Rs. 1.27 lakhs incurred on foundation for turn-table, earthwork, freight and other establishment charges etc. had become infructuous. The amount of Rs. 2.02 lakhs representing the balance expenditure on procurement of girders and other materials required for the work would remain blocked till alternative use for these materials is found.

Besides, the running of W.G. Locos at the restricted speed of 25 Km p.h. against the normal speed of 50 Km p.h. from 1970 to 1980 resulted in avoidable loss of Rs. 1.68 lakhs on account of excess consumption of coal by the locos during the period.

This para was issued to the Railway Administration in August 1984; its reply thereto is still awaited (December 1984).

24. Western and South Eastern Railways—Construction of road-over/underbridges in replacement of level crossings

The expenditure on construction of road-over/underbridges in replacement of level crossings is shared between the Railways and the State Governments concerned, and the State Government's share is subsequently reimbursed to it through grants from the Railway Safety Works Fund (financed by the Ministry of Railways and regulated by Ministry of Finance). The main idea behind these reimbursements is that the State Governments are not put to any undue financial burden on account of such works which are executed to avoid accidents (and the consequential Railways' liability towards compensation) and detention to road traffic at the busy level crossings.

It has been observed that in a number of cases, level crossings first closed due to the construction of road-over/underbridges at the site, were subsequently reopened due to persistent public demand. This resulted in re-exposure of the general public to the same hazards as existed before construction of the bridge negating the basic purpose of meeting the expenditure out of Railway Safety Works Fund. It was in keeping with the ultimate objective of this fund that the Railway Board had issued instructions (December 1965) that in case a level crossing was kept open after the construction of road-over/underbridge in lieu thereof, the road authority should refund the entire cost borne by the Railway. However, no such refunds have been made by the State Governments.

One such case had appeared as para 8 of the Advance Report of the Comptroller and Auditor General of India for the year 1981-82. The level crossing at Mandya on Bangalore City—Mysore Section of Southern Railway was reopened after about 4 years of its replacement by a road-overbridge at the site. The State Authorities have not yet paid the Railway's claim of Rs. 13.20 lakhs on this account.

Two more such cases have come to the notice of Audit, as brought out in the succeeding paragraphs :

On Western Railway a road-overbridge was constructed on Jaipur-Delhi Section at the instance of the Government of Rajasthan with the understanding (as stipulated under clause 12 of the terms and conditions) that after the opening of the road-overbridge the level crossing would be closed permanently. It was further provided that in case the existing level crossing was required to be kept open or restored due to any reason after the road-overbridge was opened to traffic, the entire expenditure incurred for the construction of the bridge including other charges would be borne by the State Government. The total cost of construction of the road-overbridge was Rs. 44.77 lakhs, the share of the Railway and the State Government being Rs. 18.68 lakhs and Rs. 26.09 lakhs respectively. The State Government's share was fully reimbursed from the Railway Safety Works Fund. The road-overbridge was opened to traffic from 1st August 1976 and the level crossing closed and dismantled in January 1977.

In April 1977, the Railway Administration forwarded a public representation for reopening the level crossing to the State Government, stating categorically that in case of reopening of the crossing, the State Government would have to reimburse the cost borne by the Railway. The Ministry of Railways (Railway Board) also reiterated this stand in their communication to the State Government in July 1977. Again in April 1980, the Ministry of Railways (Railway Board) in response to the Railway Administration's communication of March 1980 directed that the level crossing might be reopened only under the relevent terms and conditions. The level crossing was, however, reopened on 28th May 1980. At Railway Board's instance (July 1980) the Railway Administration took up (September 1980 and March 1981) the question of recovery of the full cost of the bridge from the State Government and requested them for reimbursement of Rs. 46.68 lakhs including Rs. 1.91 lakhs towards expenditure incurred on restoration of level crossing. The State Government refused (January 1983) to accept the liability saying that the level crossing had been duly closed after opening of the road-overbridge and that it had not been reopened on their request. The prospects of recovery of the Railway dues are bleak in view of the stand taken by the State Government.

On South Eastern Railway a road-overbridge was constructed at the request of the Government of Bihar in replacement of the level crossing near Ranchi station yard and commissioned on 3rd August 1975. An amount of Rs. 35.32 lakhs representing the State Government's share was reimbursed from Railway Safety Works Fund in April 1975 (Rs. 33.58 lakhs) and May 1979 (Rs. 1.74 lakhs). The cost borne by the Railway worked out to Rs. 22.55 lakhs.

During construction of the road-overbridge, a temporary level crossing had been provided by the Railway Administration to divert the traffic. This has not been closed even after opening of the bridge in August 1975. As a result, an extra expenditure of Rs. 1.44 lakhs had to be incurred by the Railway Administration towards its maintenance during the period from August 1975 to March 1984. In the meantime the State Government has not agreed to refund Rs. 57.87 lakhs which have become due from it consequent to retention of the level crossing after opening of the road-overbridge.

This para was issued to the concerned Railway Administrations in October 1984; their replies thereto are still awaited (December 1984).

25. Southern Railway—Extra expenditure on account of cancellation of lower tenders

Indian Railways Way and Works Manual provided that the size of stone ballast in railway track should be as under :—

(1) Wooden sleeper and cast iron pot sleeper track.	50mm (2″) gauge
(2) Cast iron plate sleeper and steel trough sleeper track . . .	40mm (1½″) gauge
(3) Under 'Points & Crossings' . .	25mm (1″) gauge.

With a view to introduce uniform size of ballast for various types of track structures, Ministry of Railways (Railway Board) issued instructions in December 1979 saying that 50 mm (nominal size) ballast should be used in track with all types of sleepers except in points and crossings where use of 25 mm size ballast could be continued. The attendant revised specifications for 50 mm (nominal size) ballast stipulated that 85 to 90 per cent of such ballast should pass through 40 mm square mesh sieve, and that 100 per cent should pass through 60 mm square mesh sieve; whereas the previous specifications applicable (from 1967 onwards) to 2″ (50 mm) and 1½″ (40 mm) ballast provided that in the case of the former, 90 to 100 per cent should pass through 2″ (50 mm) square mesh sieve, while 100 per cent should pass through 2½″ (60 mm) square mesh sieve; and that in the case of the latter, 90 to 100 per cent should pass through 1½″ (40 mm) square mesh sieve, and 100 per cent should pass through 2″ (50 mm) square mesh sieve.

A comparison of the revised specifications applicable to 50 mm (nominal size) ballast with the previous specifications applicable to 40 mm ballast would show that the two were similar in essence.

However, on receipt of the Ministry of Railways (Railway Board) instructions of December 1979, the Railway Administration decided in January 1980 to cancel the tenders for supply of 40 mm ballast called for earlier in November 1979 on Palghat and Madras Divisions, and invited fresh tenders for 50 mm (nominal size) ballast between August 1980 and February 1981. The rates now obtained were higher than those in the previous tenders. This resulted in an extra expenditure of Rs. 6.68 lakhs.

The cancellation of orders based on cheaper tenders was based on the Railway Administration's wrong assumption that the specifications applicable to 50 mm (nominal size) ballast were materially different from those applicable to 40 mm ballast. In reply to Railway Administration's reference of March 1980, Ministry of Railways (Railway Board) clarified in July 1980 that a good percentage of 50 mm (nominal size) ballast was also required to pass through 40 mm sieve, and therefore, there was no need for the Railway to have held up action on the tenders.

On Madurai Division also, tenders invited in September 1979 at the risk and cost of a defaulting contractor 'A' for residual supply of 40 mm stone ballast valuing Rs. 3.81 lakhs out of the total contract for Rs. 4.42 lakhs, were cancelled in January 1980, consequent on receipt of the Ministry of Railways (Railway Board) instructions of December 1979. Fresh tenders were invited in February 1980. Negotiations with the tenderers were held in August 1980 and the lowest offer received after negotiations was for Rs. 7.54 lakhs. The Railway Administration, however, assuming that risk action against the defaulting contractor was not feasible because of the change in specifications, and that it would be more advantageous and economical to collect the ballast alongside the track instead of at depot, as envisaged earlier, invited fresh tenders in December 1981 and awarded the contract to firm 'B' in March 1982 for Rs. 8.75 lakhs. Thus, the extra expenditure incurred in this case was Rs. 4.94 lakhs. Besides, the Railway Administration also voluntarily forfeited its right to take any risk action against the defaulting contracor 'A' by changing the terms and conditions of the contract.

The Railway Administration stated (June 1984) that they had no discretion to allow 40 mm ballast in place of 50 mm (nominal size) as stipulated in the Railway Board's instructions of December 1979. This is not tenable as both these kinds of ballast, when adjudged alongwith the attendant specifications, are similar in essence. The clarification given by the Railway Board in July 1980 also corroborates it.

The following comments arise :

1. The Railway Administration failed to realise the implications of the instructions issued by the Ministry of Railways (Railway Board) in December 1979, as indicated in the detailed specifications appended to the instructions.

2. The Railway Administration did not get timely clarification from Ministry of Railways (Railway Board) before deciding in January 1980 that the existing tenders should be cancelled.

3. The instructions issued by the Ministry of Railways (Railway Board) in Decemebr 1979 did not explicitly state what was implied in the detailed specifications appended thereto.

4. The extra expenditure incurred by the Railway Administration worked out to Rs. 11.62 lakhs.

This para was issued to the Railway Administration in September 1984; its reply thereto is still awaited (December 1984).

26. Central Railway—Non-utilisation of exchange yard constructed for Defence siding at Bhandak

Siding facilities (34.77 kms. track) at Bhandak (near Chandrapur) for the Defence Department of Government of India, completed at a cost of Rs. 107.56 lakhs, were handed over to Open Line on 23rd February 1970. They consisted of exchange yard and five lines one of which was opened for goods traffic on 10th November 1967 itself.

An exchange yard (approx. cost Rs. 7.14 lakhs) situated outside the factory area which was a part of the siding has not been utilised so far (1984) due to its defective layout and non-provision of certain safety measures such as barbed wire fencing, search light towers, telephones and non-execution of modifications in the yard layout for quicker and more efficient turnround of wagons by the Defence Department in consultation with the Railways. Placement and removal operations from the various spurs inside the factory premises were performed by railway locomotives till the Defence Department procured a loco in February 1981. Since 1979, the question of remodelling of the layout inside the factory premises and provision of additional facilities at the exchange yard has been under correspondence between the Railway and Defence Department.

No demurrage charges for wagons detained in the siding were levied by Railway Administration till end of September 1981 as the interchange point between the Railway and the Defence authorities for placement of wagons was not determined. The demurrage bills of Rs. 1,41,94,723.80 for the period October 1981 to March 1983 prepared against the Defence Department were settled by Railway Administration for Rs. 20,94,794.25 ; and the balance amount of Rs. 1,20,99,929.55 was waived after review of cases. The details of the number of wagons detained and specific reasons for waiver are not available. Placement charges for wagons were not billed for against the Defence Department.

At present, no separate agreements are executed between the Railways and the Defence Department for provision of Railway sidings. The Railway Board had directed North-Eastern Railway to prepare a draft memorandum of the agreement to be executed with the Defence Department, which is yet to be finalised.

The following factors emerge from the above case :

(a) An exchange yard which was provided by the Railway Administration at a cost of Rs. 7.14 lakhs (approx.) for the siding has not been utilised so far (1984) due to its defective layout though the siding was opened for goods traffic in November 1967, the assets created have remained unutilised. The Railway Administration had to pay dividend of Rs. 5.96 lakhs on this asset from 1967-68 to 1982-83.

(b) There has been abnormal delay (since 1979) in finalisation and execution of the modifications to the exchange yard by the Defence Deparment and the Railways resulting in heavy detention to wagons and accrual of demurrage.

(c) Demurrage bills have not been preferred at all till end of September 1981 though there were heavy detentions to wagons in the siding. The demurrage accrued from October 1981 to March 1983 to the extent of 85 per cent was also waived because of the operational problems faced by Defence Department.

(d) No placement charges are levied from the Defence Department.

27. North Eastern Railway—Avoidable detention to goods trains at Sonepur due to non-provision of BG running lines and loops of requisite length

Sonepur is an important junction on the main trunk route between Samastipur and Barabanki of North Eastern Railway (587 kms) which was converted from metre gauge (MG) to broad gauge (BG) in stages between January 1975 and July 1981*. Though the MG section from Samastipur to Sonepur was converted into BG in April 1976 and opened for BG train operation, necessary terminal facilities for BG goods train operation, such as provision of running lines and loops of adequate length were neither planned nor provided immediately after conversion of the section or even during the course of conversion of the remaining portion from Sonepur to Barabanki during 1976 to 1981. As a result, when the sections beyond Sonepur were opened for BG traffic from February 1981 there were no BG running lines or loops of adequate length at Sonepur to hold full length goods trains with 45 to 70 wagons or more. This operational constraint led to heavy detention to goods trains short of Sonepur on either side (Hajipur and Nayagaon). Thus, Sonepur though an important junction, virtually became a non-crossing station after conversion from MG to BG and when a (BG) goods train of normal length was dealt with at Sonepur yard, the entire length of 17 km. comprising the three stations—Hajipur—Sonepur—Nayagaon formed one single block section causing detention to several goods trains from opposite directions for long hours either at Hajipur or at Nayagaon.

A review in audit disclosed that 475 goods trains during 1981-82 and 374 goods trains during 1982-83 suffered avoidable detention in excess of one hour each, on the average, at either end of this long block-Hajipur and Nayagaon, resulting in loss of earnings of Rs. 7.15 lakhs.

*Sections	Date of opening
(i) Samastipur-Muzaffarpur	2nd January 1975
(ii) Muzaffarpur-Sonepur	3rd April 1976
(iii) Sonepur-Chhapra Kacheri	4th February 1981
(iv) Chhapra-Kacheri-Gorakhpur	18th April 1981
(v) Gorakhpur-Gonda	12th June 1981
(vi) Gonda-Barabanki	8th July 1981.

The Railway Administration stated (January 1984) that remodelling of Sonepur yard to provide full length goods running lines was completed in February 1983.

The Railway had thus failed to plan and provide running lines and loops of adequate length to accommodate full length BG goods trains at Sonepur despite the junction being brought on BG in 1976 and the conversion of section beyond Sonepur being in progress between 1976 and 1981. The need for provision of these traffic facilities in the Sonepur yard by way of remodelling etc., which cost only Rs. 37.10 lakhs was also not recognised by it even after opening of the BG section in February 1981 till February 1983.

28. Southern Railway—Remodelling of Jolarpettai hump yard

Based on a work study report of November 1968, remodelling of the Jolarpettai yard at a cost of Rs. 4.87 crores with a classification yard (21 lines), reception yard (10 lines) and despatch yard (7 lines) including provision of mechanised hump was justified for dealing with 2000 wagons per day and for giving relief to the more distant yards at Erode, Olavakkot, Shoranur and Baiyyappanahalli (Bangalore) which had limited capacity. Besides, with the mechanisation of hump and provision of retarders the time taken for humping per train (load of 40—70 wagons) was anticipated to be cut down (from 25 minutes to 12 minutes) resulting in reduction of wagon detention. Accordingly, Jolarpettai yard was remodelled with a mechanised hump etc. at a cost of Rs. 4.87 crores during 1977—79; the mechanised hump was commissioned in August 1981.

A review in audit of the Railway operations in this yard (September 1984) disclosed that none of the anticipated benefits have been realised so far :

(1) The number of wagons dealt with in the Jolarpettai yard after remodelling during the years 1981 to 1984 was only 800 on the average against 2000 anticipated.

(2) The administration attributed the under utilisation of capacity of Jolarpettai yard to increasing emphasis on running through trains, particularly block loads to distant yards.

(3) Not only the anticipated reduction in humping time from 25 to 12 minutes per train has not been realised but the same has increased from 25 minutes per train during pre-mechanisation period to 35 minutes. The average wagon detention ranged from 40 to 45 hours against the target detention of 25 hours per wagon fixed at present for this yard.

(4) The hump worked for 9 to 10 hours a day only as against expected 18 hours per day according to the norms fixed by the Railway Board in May 1978 due to less number of wagons dealt with.

(5) The working of the progression system installed as part of the mechanised hump, *i.e.*, system of storage of cuts and operations of points failed quite often resulting in wagons being wrongly humped and resorted.

Immediately after remodelling of the yard (1979-80), it came to notice that the despatches of trains to Erode and Baiyyappanahalli sides interfered with the drawing out of loads from the classification yard owing to inadequate length and availability of sorting lines. To overcome this draw-back, additional woks costing approximately Rs. 69.40 lakhs (since revised to Rs. 64.60 lakhs) have been sanctioned. These works, *inter alia*, included modification of the existing steam loco shed at a cost of Rs. 7.05 lakhs, and acquisition of land valued at Rs. 14 lakhs for provision of sorting lines etc. The modified loco shed was closed within 3 months of its commissioning due to complete withdrawal of steam traction from this yard entailing infructuous expenditure of Rs. 3 lakhs. As the declining trend of wagons dealt with became evident from 1979-80 with more emphasis on block rake movement to distant yards, the Railway Administration froze the provision of additional sorting lines in August 1982. Thus, there was no necessity to plan further facilities for sorting/classification lines again during 1980-82 incurring further expenditure of Rs. 51.91 lakhs excluding cost of land (Rs. 14 lakhs) yet to be incurred.

According to the Railway Administration (August 1984) the investment so far made in the yard including the provision of Receipt and Despatch lines, acquisition of land etc. would cater to the increasing trend of traffic due to rapid industrialisation of the area. However, considering the known facts such as the pattern of traffic (block rake movement), withdrawal of steam engines, and the small number of wagons dealt with *vis-a-vis* the capacity created, bulk of the investment made by the Railways in this yard, overlooking paucity of funds and trends of traffic, has become premature, apart from being avoidable and infructuous in certain respects.

The Public Accounts Committee, while commenting on a similar case* of non-fructifying major investment (Rs. 4.79 crores) on expansion and mechanisation of marshalling yard at Mughalsarai brought to their notice in an earlier Report of Comptroller and Auditor General of India—Union Government (Railways) (1979-80) had called for** a cost benefit study of such investment in respect of each yard so as to ensure that these investments are commensurate with the anticipated growth in traffic and likely saving, both in regard to health of wagons as also deployment of man power, *i.e.* whether the cost of yard operation in totality has come down after commissioning of the system. Such a cost benefit study has not been taken up at Mughalsarai or at Jolarpettai so far (September 1984) by the concerned Railways.

---

*Para 18 of Advance Report of C. &A.G. of India for the year 1979-80—Union Government (Railways).

**Para 63 of PAC 73rd Report (1981-82)—7th Lok Sabha.

CHAPTER VI

EARNINGS

29. Northern and Western Railways—Loss of freight on POL traffic

Railway traffic in POL* and other commodities originating from Bajuwa (Baroda) and other important commercial centres of State of Gujarat and Maharashtra to the broad gauge (BG) destinations of Northern Railway was moved *via.* the shortest MG-*cum*-BG route, involving transhipment from MG to BG at one of the transhipment points—Bhatinda, Hissar and Shakurbasti. Bhatinda and Hissar were closed for transhipment of POL traffic from March 1956 and BG siding facilities became available at Kandla (Khari Rohar Road) in January 1973. Consequently all the traffic involving inter-gauge movement was required to be moved and charged by the next shortest open route in accordance with the tariff rules. The chargeable route was the MG-*cum*-BG route *via* Shakurbasti till January 1973 and from January 1973, the all broad gauge route *via* Ratlam, Kota and Delhi involving an extra distance of about 250 kms. to the BG stations in northern region. However, in the year, 1965, the Ministry of Railways (Railway Board) decided to make an exception by permitting the Oil Companies to move their POL traffic from Bajuwa by the all BG route *via* Ratlam, Kota and Delhi but to charge the freight by the shortest MG-*cum*-BG route *via* Bhatinda and Hissar which had been closed for transhipment of POL in March 1956.

There was phenomenal growth of POL traffic after 1970-71 from the loading points of Western Railway-Kandla (MG) and Bajuwa (BG)—to the various BG destinations of Northern Railway. To cope with the increased movement of POL and other types of traffic from the Kandla Port, it was connected to Viramgam by a BG line and to augment the loading capacity, a BG siding at Kandla (Khari Rohar Road) was also provided in January 1973. Besides, traffic capacity on the BG trunk routes on Western Railway was augmented with more capital inputs from 1964-65 to carry the increasing volume of POL and other traffic.

Despite the closure of MG/BG route in 1956 as mentioned above, the Ministry of Railways (Railway Board) again decided in September 1971 that the POL traffic from Kandla also would move from its BG siding by the BG route while the freight charges therefor be recovered on a notional basis, by the shortest MG-*cum*-BG route. The transport of POL by all BG route was justified for Railways convenience to avoid further investment on additional MG tank wagons and that the oil companies had created terminal facilities on assurance given to them that they would be asked to pay only freight by the cheapest MG-*cum*-BG route. They also assumed that the POL movement from Kandla (and from Bajuwa) by the longer route involving extra haulage would be eliminated after commissioning of the refinery at Mathura anticipated by 1976 and hence this concessional freighting would be only temporary.

The refinery at Mathura did not, however, come up in 1976. As the POL traffic on the BG increased by 45.5 per cent from 2.2 million tonne in 1970-71 to 3.2 million tonne in 1976-77, the Western Railway's holding of BG tank wagons increased by 72 per cent from 1934 to 3739 during this period.

The Mathura refinery was commissioned in January 1982 only. As this refinery could not meet the entire requirement of POL products of north west region, the movement of POL by the all BG route from the Western Railway loading points referred to above continued even after 1981-82 on a substantial scale *viz.*, 4.5 million tonnes by end of 1982-83; their BG tank wagon holding further increased to 5021.

In the light of the additional investments made by the Western Railway in traffic-capacity and in tank wagons, specifically to carry the POL traffic by the all BG route since 1964-65 from Kandla and Bajuwa, the decision of the Ministry of Railways (Railway Board) to charge freight for such POL traffic by the shorter MG route on a notional basis even as a temporary measure till 1976, was not in the financial interest of the Railways, especially when this traffic with a lead of 1000 to 1600 kms is not prone to diversion to road in view of long lead.

By 1976, it was known that commissioning of the Mathura refinery was not expected before 1980-81; the Board did not review the need for discontinuance of the concessional freight even at that stage.

The concessional charging of the freight on POL traffic moved by the all BG route from Bajuwa and Khari Rohar Road (Kandla) on a notional basis by the shortest MG-*cum*-BG route was objected to in Audit in August 1980 and thereafter in April 1983, after commissioning of Mathura refinery in January 1982. Thereupon, in November 1983, the Ministry of Railways (Railway Board) withdrew the concession to both the streams of POL traffic from Kandla and

*Petroleum and other lubricants.

Bajuwa from 1st December 1983. The loss of earnings in POL traffic loaded from Kandla and Bajuwa due to the above concessional freight to the Oil Companies was Rs. 3.23 crores for the period from February 1982 to end of November 1983.

The following points arise in this case :

(i) Despite the shortest MG-*cum*-BG route to the Northern Railway being closed for POL traffic from 1956, the Ministry of Railways (Railway Board) agreed for its freighting by this closed route on a notional basis to the financial disadvantage of Railway. The loss of earnings for the period from February 1982 to November 1983 alone was Rs. 3.23 crores from the above loading points of Western Railway.

(ii) There was failure to take a total view of the investments needed to match the increasing traffic on broad gauge route such as provision of BG siding facilities at Kandla and connecting BG line from Khari Rohar Road to Viramgam and other traffic capacity works to augment the capacity on the BG for this traffic while conceding the concessional freighting in September 1971. Only the investment on MG tank wagons was considered at that stage.

(iii) There was no basis to assume in 1971 that the POL traffic from Western Railway to the BG stations of Northern Railway would be eliminated by 1976 with the commissioning of the refinery at Mathura in 1976.

(iv) Even after the commissioning of the Mathura refinery in January 1982, the Railway Board failed to review their 1971 decision till November 1983.

30. Central, Southern and Western Railways—Loss of earnings due to incorrect application of rail tariff

Wagon load freight tariff classification of commodities ranges from lowest/cheapest class 32.5 (revised to 65 from April 1983) to the highest class 150 (revised to 300) keeping in view, *inter alia*, value of the commodity or value service principle commonly known as "charging, what the traffic will bear". Further, with a view to attract traffic in bulk, a concessional train load classification, lower than the existing wagon load classification, was introduced from February 1982 by the Railway Board subject to the consignor offering in one booking or under one invoice, a specified minimum tonnage.

A review in audit disclosed that the above principle/ changes in rail tariff were incorrectly applied resulting in heavy under-charges to the extent of Rs. 11.91 lakhs as detailed below .

(1) *Central, Southern and Western Railways— Delay in revision of classification for coloured (white) cement*

As early as from 1958, the wagon load classification for coloured (including white) cement was higher at 42.5A against 37.5A for ordinary cement keeping in view the higher market price of the former. This difference in the level of classification had continued upto 1975 when the classification (for wagon loads) for ordinary cement was revised to 52.5, that of coloured (white) cement stood at 57.5.

The Ministry of Railways (Railway Board) progressively revised the classification of ordinary cement on 24th January, 1st July and 1st September 1981, 15th February 1982 and 1st June 1982 from 52.5 to 65. However, the classification applicable to coloured cement (57.5) remained unchanged with the result that it was on par with ordinary cement from 1st September 1981 to 14th February 1982 and was lower from 15th February 1982 to 31st July 1982. This anomaly continued upto 1st August 1982 when the classification of coloured cement was uprated to class 70.

Failure to uprate the classification for coloured cement as and when the classification for ordinary cement was revised resulted in loss of earnings assessed at Rs. 10.10 lakhs in respect of traffic from one station on Central Railway (Rs. 1.31 lakhs), two stations on Southern Railway (Rs. 8.38 lakhs) and one station on Western Railway (Rs. 0.41 lakh) during September 1981 to July 1982.

The Ministry of Railways (Railway Board), stated (January 1985) that it is not always possible to identify all the analogous commodities and revise their classification simultaneously by the Railway Board. They *ab initio*, concentrate on 8 to 10 major Commodities to revise classification and the rest are taken up in course of time.

The following points arise in this case :

(i) There was repeated failure to uprate the classification of coloured cement alongwith the upward revision of the classification of ordinary cement during January 1981 to August 1982 keeping in view the value service principle.

(ii) There is no system of identifying commodities which need consequential revision of rates as and when rates for major commodities are revised.

(iii) The Zonal Railways (specially Central, Southern and Western) failed to take timely action to point out to the Railway Board the above anomaly in classification.

(2) *Southern Railway—Incorrect application of train load classification*

The concessional train load classification applicable from February 1982, to certain petroleum and other oil products provided clubbing of different petroleum and other oil products to satisfy the minimum tonnage if a separate train load classification existed for each of the commodity booked. Certain petroleum and other oil products like kerosene, motor spirit etc. were excluded from the purview of the train load classification and as such cannot be clubbed with other eligible products for purposes of satisfying the minimum weight condition. A review in audit of the booking of petroleum and other oil products during the month of February 1983 from Tondiarpet Oil siding revealed that benefit of concessional train load rates, amounting to Rs. 1.81 lakhs was allowed by computing the minimum tonnage prescribed, by clubbing commodities like kerosene and motor spirit which were excluded from the purview of train load rates.

31. **Central and South Central Railways—Loss due to carriage of consignment by a longer route**

According to the Tariff rules, goods should be booked by the shortest route and the cheapest route unless an alternative (longer) route is prescribed through Rationalisation Order to overcome any operational constraint, on the shortest route.

Parli Vaijnath on South Central Railway is connected both by metre gauge (MG) line from Purna (*via* Parbhani) in the north and broad gauge (BG) line from Vikarabad in the south. There is regular wagon load traffic in salt (for industrial use) and iron rods etc. from the BG stations-Khargoda, Patdi (Western Railway) and Jalgaon (Central Railway) to Parli Vaijnath for which the shortest/cheapest route is the BG/MG route *via* Akola and Purna involving transhipment at Akola.

It was noticed in audit (December 1983—August 1984) during inspection of the accounts of Parli-Vaijnath that 243 out of 254 wagons received from the above stations on Western and Central Railways during January 1983 to July 1984, though booked by the shortest route *ibid*, were carried by all BG route *via* Balharshah, Kazipet, Secunderabad and Vikarabad stations involving extra haulage of 666 km. and additional transit time for the BG wagons as under :—

Sl. No.	From	To	Distance /Km. By shorter route	By all BG route	Extra distance
1.	Khargoda	Parli Vaijnath	1151	1817	666
2.	Patdi	-do-	1144	1810	666
3.	Jalgaon	-do-	510	1176	666

Only 11 wagons were hauled by the booked route. The avoidable expenditure on the extra haulage of 243 wagons was Rs. 2.85 lakhs. Further, comparison of the transit time taken by these wagons (in 8 out of 11 cases) in the shorter (BG/MG) and longer (all BG) route in respect of wagons from Jalgaon disclosed that the time taken by shorter route, despite transhipment, was 11 to 21 days only against the average transit time of 39.2 days by the all BG route.

According to South Central Railway Administration (May 1984), the Central Railway was responsible for routing of traffic and all the wagons in the instant cases had been handed over to it at Balhalshah or at Wadi necessitating haulage by longer BG route.

The BG yard at Akola, controlled by Central Railway, could not hand over the BG loads to South Central Railway which controls the MG yard as the latter could not provide matching empty MG wagons.

Normally three MG wagons are utilised to load the contents of two BG wagons and *vice versa*. However, a review of the number of wagons transhipped at Akola during April 1982 to September 1984 indicated that on an average while contents of 326 to 348 MG wagons per month were transhipped into 308 to 325 BG wagons, the number of MG wagons back loaded was only 205 to 273 per month disclosing thereby, a very comfortable position of availability of released empty MG stock after transhipment.

The Central Railway Administration stated (January 1985) that it had to move the BG loads *via* all BG route to Balharshah/Wadi to avoid their detention and bunching in the BG yard at Akola, as the South Central Railway had not provided matching empties for transhipment.

The following points arise in this case :—

(1) The Central Railway staff at Akola yard failed to observe the prescribed booking and routing instructions inasmuch as the BG loads required to be terminated at Akola as per the invoice were irregularly hauled beyond Akola upto Balharshah. The above failure led to haulage of 243 wagons from Khargoda, Patdi and Jalgaon being moved over longer distance of 1817, 1810 and 1176 km respectively instead of the invoiced distance of 1151, 1144 and 510 kms. respectively. The avoidable loss on extra haulage was Rs. 2.85 lakhs and the excess transit time of rolling stock, 18 to 28 days. Extra haulage of loads from Jalgaon was more than double the booked distance.

(2) While Akola BG yard was controlled by Central Railway, the MG yard including provision of matching empty MG wagons for transhipment of BG wagons was controlled by South Central Railway. Lack of co-ordination between these two Railways resulted in non-observance of the routing as per the invoice.

(3) Despite receipt of a good number of wagons regularly by other than the booked route,

the station staff at Parli Vaijnath failed to take note of the same and report the irregular diversion of these wagons to their Railway Administration for remedial action so far (August 1984).

32. Southern and South Central Railways—Loss of revenue due to detention of unconnected wagons and payment of compensation

Para 1.15 of the Advance Report of the Comptroller and Auditor General of India—Union Government (Railways) 1982-83 highlighted the increasing number of unconnected wagons in the major yards of the Railways between 1977 and 1982 due to failure of the Operating and Commercial Departments to follow the prescribed rules and procedure in regard to marking of goods, provision of "paste on" labels on wagons at repacking, transhipment and marshalling yards etc. Apart from such wagons remaining immobilised for long periods, these were subjected to pilferage when they remain/or on move as unconnected resulting in payment of compensation due to pilferage, damage by wet etc. Rules, therefore, provide that stations/yards, on receipt of unconnected wagons, should connect them within 72 hours or 3 days and despatch them to correct destination. If this is not possible, its contents should be unloaded in the presence of security personnel and stacked in a safe place pending disposal to the consignee. If no satisfactory storage accommodation is available at a particular station or yard, instructions of Divisional Office should be obtained in regard to further action to get the wagons released within the time limit of three days. A system of fortnightly circulation of statements of unconnected wagons on one railway to other railways and Railway Board also exists in order to help tracing such wagons. However, it had become ineffective due to delay in circulation and incompleteness of data in the fortnightly statements. By the time the statement (list) was available for tracing, the contents of such unconnected wagons were subjected to loss by pilferage, damage by wet, etc., or disposed of in auction. Brief details of a few such cases of detention to wagons and loss of goods in transit and avoidable haulage of wagons due to their misdespatch are given below :

A.—Detention to unconnected wagons

A test audit of the position of unconnected wagons on Southern Railway at one of the important junction yard (Tondiarpet) in December 1983 disclosed that there were many occasions when loaded wagons were despatched from this yard to the adjacent Madras Harbour terminal of the Madras Port Trust without label and correct seal card particulars. In the absence of these particulars, the Madras Port Trust Railway returned such wagons which were sent back again to the Port Trust terminal. During November 1981, 30 such loads were returned by Madras Port Trust Railway which included wagons which had been originally received at Tondiarpet Marshalling yard in January, February, April and May 1981. Despite such cases being pointed out by the yard authorities to Divisional Headquarters, this irregular practice recurred in subsequent months, for instance, in September 1982, 34 such wagons were sent back to this yard as unconnected for want of seal card particulars.

One BRH wagon loaded with imported iron plates was received in this yard on 10th November 1980 from Visakhapatnam Port with destination marked as Madras Harbour. As the consignment was not intended for them, the Harbour authorities returned the wagon. The wagon could not be released of its consignments (each iron plate weighing 22 tonnes) at Korukkupet (Madras) as no crane of adequate capacity was available. Since then the wagon was being moved about in Madras area. The correct destination—Bokaro, was ascertained from Visakhapatnam by deputing an inspector in November 1983 and the wagon was despatched to Bokaro thereafter. The wagon thus remained unconnected for three years. Similarly, five other cases of unconnected wagons in this yard came to notice where detention ranged from 126 days to 355 days. Had prompt and timely action been taken to unload the consignments for releasing these wagons or in moving them to correct destinations by the Operating Department, there would have been saving in wagon days and additional freight estimated at Rs. 5.0* lakhs. Besides, these wagons blocked line capacity.

According to the Southern Railway Administration (July 1984) every wagon (referred to above as unconnected) had since been connected and released and that the phenomenon of unconnected wagons cannot be avoided in the exigencies of operations and that too, in the context of the heavy volume of traffic dealt with and that every effort is being made to connect the wagons by monitoring the movement particulars of wagons through computer printouts** etc.

It may, however, be mentioned that on Southern Railway the number of unconnected wagons at the beginning of 1982-83 was 58; the number of wagons received as unconnected during the year was 1257. However, as only 1165 could be traced, the balance of unconnected wagons remained at the end of 1982-83 was 92. Even at the end of 1983-84, the number of wagons that remained unconnected was 73. In the entire railway system 452 wagons remained unconnected as at the end of 1983-84 (*i.e.*, on 31st March 1984).

During the audit inspection of marshalling yard Juhi on Northern Railway also it was noticed that large number of wagons without labels were received in the yard or detached from the through trains. The 'without label register' maintained by the Chief Yard Master, Juhi, revealed that during the two months (July 1983 and August 1983) 317 wagons suffered

*Computed on the daily average earnings of Rs. 116 per wagon on Southern Railway during 1981-82.

**The computer installed in Railway Board in 1972 monitors the movement of BG wagons interchanged at 44 interchange points every fortnight.

detention in the yard for period varying from 3 days to 121 days till fresh labels were provided which resulted in loss of earnings to the extent of Rs. 9.17 lakhs for the periods they were detained.

In 19 cases, the wagons suffered detention for more than 2 months which resulted in loss of earnings to the extent of Rs. 2.48 lakhs for the periods they were detained.

A test check of the position of unconnected wagons in respect of one of the yards on Western Railway; *viz.* Bandra Marshalling yard for the period 1982, 1983 and 1984 (upto May 1984) revealed that there were as many as 50 cases where the wagons were detained for more than 2 months after receipt in the yard. The detention ranged from 63 days to 496 days and the total detention was 5343 days. The loss of earning capacity of these wagons works out to Rs. 4.73 lakhs.

B—*Misdespatch of wagons and payment of compensation*

(i) *Irregular auctioning of gift consignment*

A gift consignment of 1000 bags of fortified bulgar wheat by CARE* meant for supply of free meals to children was booked on 13th/18th April 1978 from Madras Harbour in a BG wagon to Nizamabad (MG) (941 km) after transhipment from BG to MG at Maula Ali (near Secunderabad). This wagon reached Maula Ali without labels on 13th May 1978. The consignment was sent on 30th August 1978 to the unconnected Goods and Parcel office at Secunderabad. Despite the party having repeatedly requested for delivery of the goods during this period, Nizamabad station had no intimation about the whereabouts of the goods. At Secunderabad, on unloading, the marking on the bags indicated that these were gifts. There were only 861 bags against 1000 bags booked and these were auctioned on 26th September 1978 for Rs. 10,500. The party preferred (February 1979) a claim of Rs. 59,500 for non-delivery which was settled for Rs. 50,368 by the Railways in April 1982.

(ii) *Misdespatch of a Tank Wagon containing Rice Bran Oil*

One tank wagon containing rice bran oil was booked from Samalkot (South Central Railway) to the Tata Oil Mills siding, Bombay (BPTG) (1347 kms) on 8th September 1980. At Wadi (Central Railway), the tank wagon was diverted owing to wrong guidance to Budge Budge (Eastern Railway) where it reached on 6th July 1982.

Meanwhile, the party made repeated claims from October 1980 to March 1981 and ultimately (April 1981) filed a suit in the court at Kakinada which had decreed against the Railways for Rs. 1.23 lakhs towards compensation and interest thereon on 6th December 1982. The wagon with the rice bran oil has been lying since 6th July 1982 at Budge Budge without being connected, was subsequently disposed of (April 1984) by auction for Rs. 18,200.

*Cooperative for American relief to everywhere.

(iii) *Misdespatch and abnormal delay in delivery of wagons with ground nut seeds*

(1) One wagon of ground nut seeds was booked from Gudur to Karad on 21st April 1978 (both stations are on South Central Railway—Distance 1264 kms). This wagon moved from Gudur on 20th May 1978 after a delay of one month. It was marked sick on its arrival at Bitragunta, 73 kms away from Gudur on the same day and the contents were transhipped in another wagon. But this wagon left Bitragunta only on 22nd June 1978 after further delay of one month. It was overcarried to Miraj and reached Karad on 15th August 1978 involving a total transit time of 3½ months. As the consignment was by then unfit for human consumption, the party refused to take delivery and filed a suit in court for Rs. 98,395 with interest and costs. The suit was decreed in favour of the party resulting in payment of Rs. 1.26 lakhs as compensation by the Railways. Details of action taken against the staff responsible for detention to the wagon at Gudur and Bitragunta and its overcarriage to Miraj are not known.

(2) Another wagon (MG) of same commodity was booked from Dharmavaram (MG-South Central Railway) to Lonand (BG-South Central Railway) distance—825 kms on 14th February 1981. The wagon was despatched from Dharmavaram on 23rd February 1981 only and was marked sick at Kalluru on Guntakal Division. The contents transhipped into another MG wagon and subsequently despatched from Kalluru arrived Guntakal on 29th April 1981. It was however despatched on 24th May 1981 from there under wrong guidance *viz.* LMM** instead of LNN (Lonand). The contents of this wagon were transhipped into BG wagon at Akola transhipment-point and despatched on 16th July 1981 under entry ILL to LMM (Lailakh Mamlakha) on Eastern Railway. It reached Cossipore Road (Eastern Railway) on 16th August 1982 from where it was re-booked to Lonand and was received on 1st April 1983 (after a period of 2 years and 1 month) with contents in damaged condition.

Meanwhile, a suit filed by the party in September 1981 for non-delivery of the consignment was decreed for payment of compensation of Rs. 92,595 in June 1983.

(iv) *Misdespatch of a wagon with rice bran*

A wagon with rice bran was booked from Kakori (BG-Northern Railway) to Hyderabad (South Central Railway) (distance 1561 km) on 3rd January 1981. Due to abnormal delay in transit, it reached Sirpur-Kagaznagar only in May 1981 where the wagon developed hot axle. The consignment was transhipped into another wagon but the same was misdespatched on 1st July 1981 to Trichur (Southern Railway) from where it was despatched to Hyderabad on 20th August 1981 in another wagon and was received at Sanatnagar (Hyderabad) on 13th September 1981. Though the wagon was placed for unloading on 22nd September 1981, the contents were not unloaded; but the entry was altered on 10th October 1981 as

**LMM—Lailakh Mamlakha.

'TO WB' (Wadibunder) resulting in its misdespatch to Wadibunder on 14th October 1981. The consignment was unloaded at Wadibunder on 21st October 1981 and was sent back to Sanatnagar in two wagons which were finally received at the destination on 10th December 1981 (*i.e.* after a period of 11 months of its booking for a distance of 1561 km). There were shortages and damages for which the party preferred a claim of Rs. 25,170 which was finally settled for Rs. 19,357.

(v) *Irregular diversion of wagons with raw petroleum coke (R. P. coke)*

(1) Six wagons of R. P. Coke were booked from a siding in Simaria (near Barauni-Eastern Railway) to Renigunta on 25th September 1980. One out of the six wagons with 23.9 tonne of R. P. coke was diverted to Korukupet (near Madras-Southern Railway) by giving wrong guidance at Gudur on 23rd December 1980. The said wagon remained at Korukupet (Madras) unconnected till 29th September 1981 when the contents were auctioned for Rs. 4,450. The consignee preferred a claim on 27th February 1981 for non-delivery which was settled in November 1983 for Rs. 67,977.

(2) A rake of 59.5 units of wagons of R. P. Coke was booked from a siding at Barauni (Eastern Railway) to a party at Haldia (South Eastern Railway) 600 kms away. The rake was, however, received at Tiruchchirappalli transhipment point (Southern Railway)—2500 Kms. away enroute to Tuticorin (MG) on 19th May 1983 due to wrong guidance. After transhipment of the contents into MG wagons, the (MG) rake was sent to Tuticorin and as there was no claimant, it was returned to Tiruchchirappalli and again transhipped into BG wagons for onward despatch to Haldia between 26th and 28th May 1983. The total haulage due to wrong guidance was 4623 kms. involving extra cost of Rs. 6.05 lakhs. It was not known whether any claim for damage from the party was received and paid by South Eastern Railway.

The South Central Railway Administration explained (June 1984) that the instructions in regard to procedure to be followed for booking, loading, proper documentation, transhipment and expeditious movement to destination were being reiterated and the staff found responsible for lapses were taken up. However, inadequate knowledge and illegible writing, non-familiarity of the staff at various stations with the geographical and other details of the country as a whole resulted in a few cases of misdespatch noticed in audit and these instances cannot be generalised. They further stated (September 1984) that Divisional Railway Managers concerned have been advised to take appropriate action against the staff at fault and also remedial action to avoid recurrence of such cases.

The Southern Railway Administration also stated (December 1984) that despite efforts there may be some stray cases of omissions which can not be ruled out in the exigencies of working. When compared to total traffic dealt with such instances may be few and unavoidable.

However, as already brought out in para 1.15 of the Advance Report of the Comptroller & Auditor General of India for 1982-83, the incidence of unconnected wagons has been on the increase in recent years and even the list of unconnected wagons circulated among the Railways was incomplete.

The following points arise from the above cases :

(i) Wagon load consignment, after booking, suffer abnormal delay in transit to the next yard for transhipment or change of destination giving scope for tampering of seals, labels and contents of the wagons.

(ii) There have been instances of lapse in the observance of rules and procedure by the staff at various levels.

(iii) Though a procedure of circulation of wagons exchanged at the interchange points of the Railways exists this system does not provide any effective counter-check on the movement of wagons either piecemeal or rakes, so as to monitor their misdespatch or diversion from the booked route even at the interchange point. Such data was not effectively used by the Claims Department which failed to trace such wagons in time, *i.e.* before the contents of such wagons were auctioned at very low prices in many cases referred to above.

(iv) Reasons for diversion, misdespatch of wagons, wagons becoming sick enroute etc. are not investigated adequately for taking remedial action to avoid recurrence of such cases.

33. Central, Southern and Western Railways—Non-observance of routing and rating instructions

The rules under the Indian Railways Act 1890 were amended in 1974 to provide that the goods offered could be carried and freighted by a longer route (irrespective of the existence of alternative cheaper route) provided a general order to that effect was issued by Ministry of Railways (Railway Board) in the public interest. The object of the amendment was to afford relief to the saturated/congested routes and to optimise utilisation of available routes on which capital has been invested. The general order (rationalisation scheme) is to be renewed from time to time keeping in view the trend of traffic over a particular route, haulage cost on rationalised route, especially on metre gauge, proneness of traffic to road diversion, etc. Once a general order is issued, it leaves no option to consignor or Railway staff to book and route the traffic by any route other than the rationalised route.

1. *Central Railway*—Omissions to observe the rationalisation orders.

(i) According to rationalisation order in force from 1982, the goods traffic in rakes from the Bombay Port Trust stations and from stations between Wadibunder and Kalyan of Central Railway to stations on

Eastern, Northern, North Eastern, South Eastern and Northeast Frontier Railways were to be routed and charged via Bandra Marshalling Yard, Surat and Jalagaon to give relief to the saturated shorter route via Kalyan and Igatpuri. However, two rakes of fertilizers booked from Trombay station (before Kalyan) in December 1982 and January 1983 to Belanganj (Agra) were not routed and charged by the Central Railway according to the rationalised route entailing a loss of earnings of Rs. 0.91 lakh.

Similarly, all traffic ex-Bombay area moving in tank wagon rakes for destinations on Northern Railway and Mugalsarai was to be booked and routed via Bandra Marshalling Yard, Surat and Jalgaon. Again, 25 rakes of bitumen booked, during July 1982 to 2nd September 1983 from Trombay to destination stations on Northern Railway were routed and rated incorrectly via Dadar, Kalyan, Igatpuri and Tughlakabad resulting in loss of earnings of Rs. 15.90 lakhs. The Central Railway Administration stated (November 1983) that the rationale of these order was to ensure routing of block rakes of Roller Bearing stock Ex-Bombay area via Bandra Marshalling yard-Surat-Jalgaon so as to avoid breaking up of these rakes over the north east ghat section which have load restrictions.

However, the general orders of the Ministry of Railways specified only the streams of traffic and not the particular stock which should be booked by a particular route.

(ii) Similar omissions to observe the rationalisation orders were noticed on Central Railway in respect of traffic received at Belanganj from Balharshah side and traffic booked from Belanganj to Vijayawada side, which were issued to give relief to the trunk route via Itarsi and Nagpur. The loss of earnings in these cases amounted to Rs. 2.17 lakhs.

2. *Southern Railway*

According to the Rationalisation order in force from 1982, all traffic in coal for metre gauge (MG) destinations in Mysore and Bangalore Divisions of Southern Railway are to be booked and routed via Tondiarpet and Baiyyappanahalli (Bangalore city) transhipment point instead of by the shorter route via Secunderabad and Dronachalam.

It was, however, noticed that coal wagons booked from stations on the Central and South Eastern Railways to a firm at Harihar station in Mysore Division though moved by the rationalised route, were charged by the shorter route as the Railway Receipts were made out incorrectly, indicating the shorter route for charging freight. As a result, there was undercharge to the extent of Rs. 24.72 lakhs for the period March 1982 to June 1983. The firm had declined to pay the freight by the carried (rationalised) route stating that the charges were payable according to the route and rates mentioned in the Railway Receipts and that the wording "may be booked and routed" used in the Rationalisation order would appear to make the routing "not mandatory" and allow option of the routes.

Orders were amended later, by substituting the word "should" for "may".

The firm has yet to pay undercharges of Rs. 24.72 lakhs (June 1984).

The Southern Railway stated (December 1984) that the firm has obtained in May 1984 an interim stay restraining the Administration from taking any action to realise the amount and that they have also filed a counter petition for its vacation.

3. *Western Railway—Irregular refund of freight in contravention of rationalisation order*

In order to relieve the congestion at Viramgam transhipment point and to expedite the gauge conversion works between Viramgam, Okha and Porbandar, the Railway Board had rationalised during 1975 to 1979 the movement of all traffic in coal to stations on Katkola—Porbandar MG section via Sabarmati instead of by shorter route via Viramgam. The Western Railway, however, moved bulk of the traffic for Porbandar-Katkola sections (41083 out of 62473 wagons in case of a few firms) by the shorter route for operational convenience but charged the freight on such traffic as per the rationalisation order. As the consignees represented against levy of freight charges by the longer rationalised route and sought refund of freight, the same was conceded by the Railway Board (April 1983). A sum of Rs. 1.34 lakhs has since been refunded and their claim of Rs. 2.29 lakhs is pending. Apparently, having rationalised a longer alternative route for operational convenience, the Western Railway as well as the Railway Board failed to review the working of this rationalisation order periodically for its continuance. Moreover, when the order was inforce, claims for refund of freight were entertained and admitted by the Railway Board from the trade who are not in the knowledge of operational movement.

In granting the refund the Railway Board had taken the view that consignments booked by rationalised route but carried by another route for operational purposes did not attract the provisions of general order for levy of freight charges by rationalised route. This contention of Railway Board does not seem to be correct as the general orders are issued by Central Government in exercise of powers under Section 27A of Indian Railways Act 1890 and are, therefore, mandatory. Besides, if for operational purposes consignments are diverted by a longer route (though the rationalised route is cheaper) the Railways can not levy the freight by the longer route. Similarly, if the consignments are diverted by shorter (cheaper) route for operational purposes, the freight already levied for carriage by rationalised route should be retained.

4. *Western Railway—Diversion of traffic to road after rationalisation*

For the traffic originating from the metre gauge section in and around Jodhpur of Northern Railway to and from Udaipur city and to and from Ratlam side, the shortest route is via Marwar and Mavli junction. Due to gradient of 1 in 50 over a stretch of 6 km

between Khambli ghat and Phulad, banking engines were provided to work the passenger and goods trains in this section and the section capacity, due to this constraint, was being utilised to the extent of 24 to 30 per cent only. For the above streams of traffic there is also an alternative route via Marwar, Ajmer, Chittorgarh and Mavli junction involving an extra haulage of 250 kms (to Udaipur only) to 105 kms (traffic towards Ratlam). However, the section on this longer route specially between Marwar and Ajmer was saturated with capacity over 90 per cent (1983-84). From August 1981, the Railway Board at the instance of Western Railway had rationalised the traffic from Udaipur and Ratlam side to be routed and charged by the longer route via Marwar-Ajmer-Chittorgarh and Mavli junction. This had imposed a heavy freight burden on the traffic, specially to and from Udaipur zone to Jodhpur side. The distance by road between these two areas is around 280 kms. and hence the goods traffic was diverted to road movement resulting in 100 per cent decline in Railway revenue by Rs. 15.46 lakhs for 1982-83 and 1983-84 on the basis of total tonnage during the years 1979-80 and 1980-81. Besides, the sections capacity of shorter route between Marwar and Mavli as well as the banking engines were being grossly under utilised.

The following points arise from the above :

1. There were recurring failures on Central Railway to observe the routing and rating instructions contained in the Rationalisation orders issued in 1981-82. The staff at the supervisory levels (Commercial and Accounts Inspectors) have also failed to eliminate the incidence of incorrect application of the instructions thus defeating the objectives of the Rationalisation order.

2. On Central and Southern Railways, due to failure of the staff to record correctly the route to be charged on the invoice/Railway Receipt, the consignees have refused to admit the correct freight leviable.

   Both the Railways are yet to recover the outstanding freight due as per the rationalised routes involved in the cases pointed out by Audit, though a period of two years has elapsed.

3. The Railways have failed to review the need for rationalisation of different routes from time to time. On the Western Railway, despite the traffic being rationalised to move via Sabarmati on the plea of capacity constraints on the shorter route via Viramgam, bulk of the traffic continued to move by the shorter route leading to consignees claiming refund of freight.

4. The objectives of the rationalisation scheme were not also kept in view by the Ministry of Railways (Railway Board) as may be seen from their approval to the routing and rating of traffic from Udaipur-Ratlam side to Northern, Central and South Central Railways *via* Marwar-Ajmer-Chittorgarh which was already saturated in preference to a much shorter route Marwar-Mavli which was grossly under utilised.

34. Central, Northern, North-Eastern, Southern, South-Central, South-Eastern and Western Railways—Loss of revenue due to delayed receipt of rate circulars at stations

Tariff revisions notified by the Railway Board from time to time are to be implemented by the zonal railways through notifications/rate circulars, etc. without delay after giving two weeks notice (14 days). Any delayed action to notify such changes to stations would entail loss of earnings due to non-collection of freight/fares at the revised rates. The Public Accounts Committee had commented* upon certain cases of abnormal delay to notify revision in tariff and stressed the need to avoid delays in such cases. The Railway Board had noted (1978) the observations of Public Accounts Committee for remedial action.

As a result of recommendations of the Rail Tariff Enquiry Committee (RTEC) 1980, series of tariff revisions were made by the Ministry of Railways (Railway Board) during 1980-81 to 1983-84. A review by Audit of the position in regard to issue of draft notifications on some of the zonal railways during 1983-84 disclosed that there had been considerable delays in implementing the changes in fares and freight resulting in loss of earnings and accumulation of station outstandings under 'objected debit'. Gist of a few cases noticed in audit are detailed in succeeding paragraphs :—

A—*Loss due to delayed issue of rate circulars*

Northern Railway

On the Northern Railway, out of 166 rate circulars issued during 1983, 55 were not issued in time and the requisite period of two weeks or 14 days was not allowed for giving effect to them. As a result, the station staff could not apply, in certain cases, the revised tariff from the dates notified nor the trade could be given due notice. The undercharges pointed out in internal check for recovery were objected to by the stations on grounds of delayed notification/intimation. Such amounts outstanding for recovery against 9 stations on Northern Railway totalled Rs. 14.37 lakhs at the end of December 1983. Credits amounting to Rs. 5.91 lakhs were allowed to stations after accepting their plea of late receipt of circulars in March and May 1983. The Northern Railway Administration has also written off a sum of Rs. 3.48 lakhs of the outstanding objected debits relating to the stations in Jodhpur and Bikaner Divisions, the staff involved having retired from service in the meantime.

North Eastern Railway

The rates for live stock (horses, ponies, pigs etc.) for transport by coaching vehicles, as amended from

*1. Para 2.58 of 11th Report of PAC (1977-78) 6th Lok Sabha.
2. Page 18 of 107th Report of PAC (1978-79) 6th Lok Sabha.

1st June 1981, prescribed levy of freight on vehicle load basis for minimum weight of 60 quintals for BG and 45 quintals for MG 4-wheeler wagon.

On the North Eastern Railway pigs were booked in 8-wheeler vehicle (equivalent to two four-wheelers) from Izzatnagar, Badaun and Kasganj during October 1981 to January 1982 realising freight on the basis of only 45 quintals per 8 wheeler instead of 90 quintals. Debits for undercharges amounting to Rs. 1.45 lakhs were raised by the Accounts Office against the stations concerned in January and March 1982, which have still not been realised as the stations have objected on the ground that the relevant rate circular effective from June 1981 was not received by them till January 1982 when the error was pointed out by the Account Office.

Southern Railway

Short realisation of freight charges amounting to Rs. 8.48 lakhs at 39 stations (Rs. 6.81 lakhs pertaining to period 1980 to 1984 and Rs. 1.67 lakhs for the period prior to 1980) was noticed on account of the following factors :—

(Rs. in lakhs)

	Period prior to 1980	During the period 1980—84	Total
1. Delayed notification of rationalisation orders effecting the chargeable distance between pairs of stations having alternative routes .	..	1.49	1.49
2. Delayed receipt of calibration chart of tank wagons	1.45	..	1.45
3. Others/including changes in classification, minimum weight etc. of commodity booked	0.22	5.32	5.54

In all the above cases, though debits have been raised through error sheets in internal check, the station staff have disputed the same on the ground that the circulars had not been received at the time of delivery of goods.

Western Railway

Special checks of stations having goods earnings of more than Rs. 50 lakhs per month during June 1981 and July 1981 conducted by Railway Administration disclosed undercharges amounting to Rs. 22.03 lakhs due to non-implementation of changes in classification etc. made effective from December 1980 mainly on account of late receipt of rate circulars by stations. During the period from April 1980 to March 1983 undercharges amounting to Rs. 1.92 lakhs due to late receipt of circulars by the stations, was written off.

B—Refund of wagon registration fee due to delayed notification of Railway Board's instructions

South Eastern Railway

Wagon registration fee deposited by the indentor was refunded within 10 days in the event of cancellation by the indentor due to non-availability of wagons. In order to curb the malpractice of multiple indenting of wagons by the traders, the Railway Board raised the cancellation period progressively to 30 days from 6th October 1979, 60 days from 3rd December 1980 and to 90 days from 19th May 1981. A test check in audit at 61 major stations out of 115 on South Eastern Railway disclosed that the relevant Railway Board's instructions were communicated to the stations by the Zonal and Divisional Headquarters after a delay ranging from 37 to 150 days. Meanwhile, the stations granted refunds on the basis of pre-revised rules thus entailing available refund of Rs. 2.33 lakhs. So far debits to the extent of Rs. 1.53 lakhs had been raised against 33 stations but the same had to be withdrawn on account of late receipt of instructions at the stations.

C—Short collection of passenger fares

Based on recommendation of the RTEC, the Railway Board decided (September 1981) that in respect of the big cities served by a number of stations falling within the same municipal area (radius of 10 km.), the fares should be charged in respect of journeys of more than 300 km to and from the principal station serving the city. This scheme was to be implemented from 1st April 1982 by all the Zonal Railways.

Each Zonal Railway had to notify the principal station to all its stations locally and to the Headquarters of other zonal railways for similar notification to their stations for collection of fares to and from the principal station only (instead of to and from adjacent stations).

A limited review in audit of the implementation of notification on certain Railways during 1983-84 disclosed the following :

South Central Railway

With effect from 1st April 1982 Hyderabad was notified as principal station out of the four stations *viz.* Hyderabad, Secunderabad, Begumpet and Kacheguda falling in the same municipal area. Though it sent (February 1982) a copy of its notification to all other zonal railways, only the Western and the North Eastern Railways issued notifications in time giving effect to the scheme from 1st April 1982. The South Eastern Railway brought into effect the instructions for charging fares upto Hyderabad only from 1st June 1982. The Northern Railway notified the instructions to its stations only after the omission was brought to their notice by the Railway Board in November 1983, and the Central Railway still later, in February 1984

Central Railway

Bombay VT was declared as the principal station only from 1st June 1982 and accordingly tickets to and from stations within the radius of 10 km. *viz.* Dadar and Byculla, were issued and charged from and to Bombay VT from that date. Though Central Railway advised other Railways in January 1983 after a delay of six months, the latter further delayed issue of notifications to their stations. During the audit inspection of Jalna station on South Central Railway

in March 1983, it came to notice that station was not collecting the fares correctly even at that time upto the principal station *viz.* Bombay VT and had been issuing tickets to Dadar and Byculla in Bombay area owing to non-receipt of notification from its Headquarters. Similar omissions were noticed in tickets issued from other stations in Hyderabad, Secunderabad, Guntakal and Hubli divisions resulting in short collection of fares. Remedial action was taken by South Central Railway only in July 1983.

The delay in issue of notifications by Central and South Central Railways alone resulted in short collection of fares to the extent of Rs. 2.89 lakhs and Rs. 1.70 lakhs respectively during 1983 as revealed in test audit.

Northern Railway

The Northern Railway Administration notified with effect from 1st April 1982 Delhi, Varanasi, Allahabad and Ambala city as the principal stations for purpose of charging fares from passengers, travelling to and from any of the various stations located within a radius of 10 km. of these cities. A review in audit (October 1984) disclosed that some of the stations did not realise fares as per notification resulting in short realisation of fares of Rs. 5.35 lakhs during the period 1st April 1982 to 31st March 1983.

Mainly due to delay in issue of notification and non-implementation of revision of fares and freight in time etc., the amount of station outstandings under 'objected debits' steeply increased from Rs. 4.26 crores at the end of March 1980 to Rs. 10.97 crores at the end of March 1983. The four Railways—Central, Northern, Southern and Western together account for Rs. 8.30 crores (78 per cent) of the station outstandings of Rs. 10.87 crores under 'objected debits'.

Following points arise in this connection :

1. There has been delay in taking follow up action on Railway Board's instructions regarding revision of tariff notified from time to time.

2. Though notice of 14 days is *sine qua non* for revision of tariff, the Railways failed to adhere to such instructions. Due to the Railways taking much longer period to issue the rate circulars (one month to over a year), there was substantial loss of earnings.

3. Failure to issue notification in time was one of the factors contributing to the increase in amount under 'objected debits' from Rs. 4.26 crores at the end of March 1980 to Rs. 10.97 crores by end of March 1983.

4. Inadequate efforts in watching the recovery from station staff resulted in accumulation of station outstandings and in writing off substantial amount thereof as irrecoverable due to concerned staff having retired from service.

35. **South Eastern Railway—Loss of earnings due to abnormal detention to wagons**

Railways rolling stock has been exempted under the Indian Railways Act, 1890 from any attachment to satisfy a decree issued under the authority of law except with the prior sanction of the Central Government.

Notwithstanding the provision aforesaid, during March/April 1980, the Deputy Commissioner, Chaibasa without obtaining prior sanction of the Central Government ordered Sub-Divisional Magistrate, Seraikela (Government of Bihar), to seize 13 wagons containing 3496 quintals of coal lying at Kandra and Rajkharswan stations of Chakradharpur division of South Eastern Railway. The consignment was booked to various stations of Northern and Central Railways. No seizure orders were served to the Station Masters either at the time of raids or later.

Though the fact of the seizure was communicated by the Station Master concerned to the Divisional Authorities immediately, Divisional Authorities failed to annul the action of the civil authorities by recourse to the provisions of the Indian Railways Act 1890. In June 1980 wagons were brought to the Chakradharpur station and kept detained in loaded condition till 8th November 1982 (2 years and 8 months) awaiting the clearance certificate from the civil authorities.

The Railway Administration belatedly decided to unload the wagons and ultimately released them on 8th November 1982 after stacking the material at the Chakradharpur goods shed and informed the State Civil Authorities accordingly. The stacked material (2838 quintals) was disposed of by auction by the Railway Administration for Rs. 56,320 and the amount in question has been kept under suspense pending finalisation of claims received, if any, for non-delivery of consignments. Failure of the Railway Administration to enforce the provisions of the Indian Railways Act led to unnecessary detention to wagons for over two years and eight months entailing loss of their earning capacity valued at Rs. 15.70 lakhs.

The following points need consideration in this case :—

(i) Although the fact of seizure of wagons was brought to the notice of the Divisional Authorities instantly by the stations concerned, the latter failed to initiate action in terms of Railways Act for release of the seized wagons.

(ii) The Railway Administration took an unusually long time (two years and 8 months) to unload the wagons leading to undue detention and loss of revenue.

(iii) The amount of claim preferred, if any, on account of non-delivery of the wagons at destination station on Northern and Central Railways is yet to be ascertained.

(iv) There was acute demand for wagons during the period in question in Chakradharpur

Division and the Railway Administration was deprived of the traffic that could have been handled, if the wagons had been released earlier and made available for traffic use.

36. **South Eastern Railway—Abnormal delay in realisation of due freight from a Public Sector Corporation**

Kirandul—Kottavalasa Broad Gauge line was constructed at a cost of Rs. 54.58 crores and opened for traffic from November 1968 mainly for transport of iron ore for export to Japan from the Bailadilla mine of National Mineral Development Corporation (NMDC). Prior to its opening, however, iron ore was moved over the line from 6th May 1967 at the specific request of the NMDC. A provisional freight rate of Rs. 30 per tonne was fixed by the Ministry of Railways (Railway Board), subject to payment of the differential between the provisional rate and the rate to be fixed on a subsequent date was accepted by the NMDC.

From 6th May 1967 to 31st October 1968 freight rates underwent several revisions as under :

Rs. 26.90 per tonne between 6th May 1967 to 14th May 1967, Rs. 31.72 per tonne from 15th May 1967 to 14th June 1967, Rs. 32.65 per tonne from 15th June 1967 to 31st March 1968 and finally Rs. 33.50 per tonne from 1st April 1968 to 31st October 1968 in tune with the general revision of tariff rates between 1967 to 1968.

The level of inflation to be adopted in the distance for charge over the K.K. line was fixed and notified by the Railway Board in January 1971. After a lapse of 5 years, in August 1976 the Railway Administration worked out the differential freight of Rs. 15.73 lakhs on the basis of the aforesaid final rates and preferred a claim therefor against the NMDC.

The NMDC did not settle the claim but referred the matter to the Ministry of Steel and Mines for a decision in August 1978. The South Eastern Railway also reported non payment of the above amount to the Ministry of Railways (Railway Board) in September 1978 and again in December 1981. The issue remains unresolved despite the Ministry of Railways taking up the matter with the Ministry of Steel and Mines in October 1978, June 1979 and November 1983.

The Ministry of Steel and Mines stated (October 1978) that increases in freight rates have been made very frequently without taking into account socio economic aspects and as such they were not in a position to support such a claim unless full background and justification with supporting documents and relevant references were furnished.

In accordance with the extant rules, the differential freight of Rs. 15.73 lakhs, on realisation, would be treated as receipt on capital account thereby reducing the capital cost of construction of the project, as these earnings had accrued during the period of its construction. Due to delay in realisation of this amount (Rs. 15.73 lakhs), the South Eastern Railway continues to incur additional liability of payment of dividend thereon to the extent of Rs. 94 thousand per year from 1974-75 onwards or Rs. 9.40 lakhs for ten years (till 1983-84).

The following points arise for consideration in this case :

(i) There has been abnormal delay of over 5 years on the part of South Eastern Railway in the preferment of its claim for the differential freight.

(ii) Efforts made to resolve the dispute even at interministerial level have not shown any fruitful results and the South Eastern Railway is saddled with additional dividend liability of Rs. 94 thousand per year.

CHAPTER VII

OTHER TOPICS OF INTEREST

37. Welding of rail joints

The Indian Railways have gone in for welded rails in a phased manner from early sixties, as a part of the track modernisation programme to improve safety and to reduce maintenance and fuel costs. The welded rails reduce noise levels and the number of fish plated rail joints resulting in safer and more comfortable rail travel besides less wear and tear of both the rails and rolling stock. On trunk routes, rails welded into continuous length of one km. or more (LWR) are used, while short welded rail (SWR) panels of 39 metres have been adopted on other routes. Of the total running track length of 76,197 kms., as at the end of 1982-83, only 46,307 kms. have been laid with welded rails of which 9,774 kms. comprise long welded rails.

Rails are welded by thermit and flash butt processes. While thermit welding is done *in situ*, welding under the latter process is done at the location of Flash Butt Welding Plants (FBWP) and the welded rail panels are transported to sites for laying on the track. Flash Butt welded rail joints are universally recognised as stronger and sounder than those welded by thermit process. A review in audit of the rail welding activities on the Railways revealed the following :

I. Dependance on a single source for thermit welding

Thermit welding developed by the only firm—M/s. India Thermit Corporation Ltd., Kanpur involves ignition of thermit mixture for developing the requisite temperature for welding. The contracts entered into by the Railways over the years with the firm provide for :

(i) payment per weld depending on whether the welding is done at site or *in situ;*

(ii) free supply of skilled and unskilled labour and petrol required for welding; and

(iii) free transport of rails, contractor's materials, tools, plant etc. to the site of work and storage accommodation therefor.

The overall cost of a thermit weld as per South Eastern Railway's estimate (for 1982-83) works out to Rs. 240 inclusive of the cost of free supply items (Rs. 100) by the Railway as against the average cost of Rs. 95 per joint welded in the FBWPs. Thus, thermit weld, apart from being weaker than flash butt weld, is also costlier. Nevertheless, the Railways have been resorting to large scale thermit welding by contract with the firm for several decades, the number of thermit welded joints obtained by the Railways during 1970 to 1980 alone being over 17.63 lakhs.

Even welding of short rail panels, transport of which from the flash butt welding depot to the site normally presents no problem, was often entrusted by Central Railway to the contractor for costlier thermit processing. Short rail panels got welded by thermit process on the Central Railway during three years ended 1982-83 alone were 978 track kms. or about 97,800 joints, while the utilisation of its own FBWPs at Chalisgaon and Kalyan continued to be 46 per cent and 39 per cent below their annual capacity of 10,800 and 8,000 joints respectively. During April 1980 to December 1983 a total of 2.50 lakh joints for both LWR and SWR welded by thermit process on Central Railway involved payment of Rs. 1.90 crores to the contractor. Similar payments on the Southern, South Eastern and Eastern Railways amounted to Rs. 1.30 crores, Rs. 1.09 crores and Rs. 0.39 crore respectively for 1.49 lakhs, 1.27 lakhs and 0.53 lakh of thermit welds for the period 1979-80 to 1983-84. Despite heavy recurring expenditure involved on thermit welding through contract, no concerned drive seems to have been made over the years either for ensuring an optimum mix between thermit and flash butt weld or for acquiring the technical know how for thermit welding or developing alternative sources and optimising flash butt welding so as to minimise Railways' dependence on the single source. It is only after two and a half decades that the Northern Railway developed (November 1980) thermit welding at an investment of Rs. 17.4 lakhs with an installed capacity of 250 welds per day.

II. *Working of the flash butt plants*

The performance of the flash butt plants on the Railways during 1972-73 to 1976-77 was mentioned in para 10 the Report of the Comptroller and Auditor General of India for the year 1976-77—Union Government (Railways). The output of the plants

in terms of rail joints during the last six years compared with the rated/target capacity per shift assessed taking into account the local working conditions was as under :—

Railway	Location of the plant	Date of instal-lation	Installed/ target capacity per annum	Actual output					
				1978-79	1979-80	1980-81	1981-82	1982-83	1983-84
				(In terms of rail joints)					
Central	Kalyan	1974	8,000	3225	5211	3212	3442	6487	6920
	Chalisgaon	1960	10,800	7772	6677	5849	5230	8877	7610
Eastern	Mughalsarai	September 1970	10,000	NA	NA	NA	9001	8604	12060
Northern	Meerut	June 1970(A)	14,400	13240(A)	18591	11601	15403(A)	15907	15466(A)
Southern	Arakonam	August(B) 1965	12,500	8182	10012	10944	11411	11667(B)	13320
South Eastern	Jharsuguda	December 1966	14,400	3247	6588	8542	8590	6643	7630
Western	Sabarmati	May 1966	15,600	7732	16368	11765	9662	10769	17510

(A) As the plant worked double shift for some time during 1978-79, 1981-82 and 1983-84 prorata outturn on single shift adopted for comparison.

(B) Double shift working for 4 months in 1982-83 and 5 months in 1983-84.

It would be observed that the outturn of the plants on Central, South Eastern and Southern Railways all along lagged behind the rated/target capacity except in 1982-83 and 1983-84 when on the Southern Railway targetted production for single shift could be reached with double shift working. The total output of the Eastern Railway Plant over a period of about 14 years since its installation (September 1970) was only 95,954 joints as against 2,33,295 joints turned out of the Northern Railway Plant (installed in June 1970) in the corresponding period upto March 1984. The shortfall in outturn on these Railways was attributed mainly to power failure, want of rails, loading and unloading difficulties, mechanical/electrical repairs etc. Based on the number of days each plant worked during 1983-84, the productivity per shift per day was the lowest on South Eastern (40 joints) followed by Southern and Central (50 joints each) and Eastern Railway (60 joints), while Western Railway despite its plant being two decades old (replaced in October 1983), could achieve production of 80 joints per shift as on the Northern Railway. The low productivity of the plants on South Eastern, Central Southern and Eastern Railways led to higher cost of production *viz.*, Rs. 245, Rs. 112, Rs. 128 and Rs. 104 respectively per joint as against Rs. 59 on Western Railway.

III. Diversion of rails

While shortage of rails was pleaded as one of the factors for shortfall in outturn, the South Eastern Railway diverted 2,651 loose rails and 6,650 rails in block rakes received for welding at Jharsuguda plant to other stations during the period 1979 to 1984 (May). There was similar diversion of 13,199 loose rails and 8,170 rails in block rakes during 1981-82 and 1982-83 from the Sabarmati plant to other stations on Western Railway Such diversions would point to lack of proper planning and coordination for allotment and supply of rails taking into account production performance of the plants and result in unnecessary freight and handling charges, though not susceptible of precise quantification.

IV. Non/short receipt of rails

For supplies of rails from the Bhilai Steel Plant, 100 per cent payments are made by the Railways on proof of despatch. 633 loose rails valuing Rs. 5.92 lakhs despatched by the steel plant to FBWP at Meerut during July 1974 to November 1980 have not been received so far (December 1984). There was also short receipt of 59 rails valuing Rs. 86,843 at the Southr Eastern Railway Plant Depot during 1977-78 to 1982-83. Northern Railway preferred a belated claim in September 1983 on the Commercial Department after a lapse of over 4 to 9 years, whereas South Eastern Railway preferred a claim in March 1984. These are yet to be settled (December 1984).

V. Delayed/non-commissioning of loading and unloading facilities

For mechanisation of unloading/loading of loose/welded rails from and on BFR wagons hitherto done manually, a 7.5 tonne capacity crane ordered for the Meerut plant, was received by October 1981 and payments therefor amounting to Rs. 16.20 lakhs made in June 1981 and December 1982. The crane was installed in November 1983 but not commissioned so far and was under trial for a period exceeding one year (December 1984). Meanwhile, the warranty period expired in April 1983, depriving the Railway of the cover of free replacement of defective/faulty components if any. The delay in commissioning of the crane besides blocking the investment, adversely affected loading and unloading operations, resulting in avoidable expenditure of Rs. 1.52 lakhs on continued manual operation and demurrage charges

amounting to Rs. 4.99 lakhs on account of heavy detentions to stock during the period 1981 to 1984. For mechanical loading and unloading of welded rail panels South Eastern Railway modified 6 BFR under frames, 4 running coach under frames and 2 thread under frames at a total cost of Rs. 4.75 lakhs. The modified underframes sent to the Jharsuguda plant in March 1982 have not been put to use so far (December 1984) due to non-availability of end drilled panels and its associated equipments.

VI. *Idling of a flash but plant*

Prior to installation (1970) of the plant at Mughalsarai, Eastern Railway had installed (1958) a flash butt plant (cost Rs. 2.96 lakhs) at Bandel. The output of this plant was about 6000 joints per year, being the average of 3 years immediately preceeding its overhauling in 1976-77 at a cost of Rs. 2.14 lakhs. After overhauling, the plant had resumed functioning in December 1976 and welded 2927 joints by December 1977. It was also certified (June 1977) by the General Manager that the condition of the plant was fairly good and capable of giving an outturn of 60 joints per day. Nevertheless, the plant was shut down in January 1978 on the grounds that (a) it was overaged, (b) quality of welding had deteriorated, (c) cost of production was high (Rs. 83) and (d) the rails got damaged in manual unloading as pointed out (10th September 1976) by the Chief Engineer on an inspection while the plant was undergoing overhaul. In the Xth Flash Butt Welding meeting (January 1980) of the Chief Engineers of the Railways with Railway Board it was also noted that the plant at Baudel "is in good working condition and the question of its diversion to some other Railway was under consideration since the IXth meeting held in 1978". The plant is, however, still lying idle with the following financial implications :

(i) idling of the investment (Rs. 2.96 lakhs) on the plant;

(ii) idling of the labour from February 1978 to March 1984 involving an unproductive expenditure of Rs. 9.11 lakhs; and

(iii) overhauling cost of Rs. 2.14 lakhs rendered infructuous.

VII. Defective purchase of new welder machine

While the diversion of the spare plant at Bandel remains undecided since 1978 the Central Railway, with the approval of the Railway Board, imported (May 1983) a flash butt rail welder machine (cost Rs. 74.06 lakhs) in replacement of the existing plant at Chalisgaon which had throughout been underutilised. The machine was erected in July 1983 but could not be commissioned so far (December 1984) as the input transformer which had been tailor made locally at a cost of Rs. 2 lakhs for the old plant and erected in May 1982, could not measure up the rated capacity (500 KVA single phase) for welding of 52 kgs. rail sections. According to the supplier of the rail welder machine, the transformer is only of 280 KVA capacity and when put to load suffers sudden drop in voltage. On being advised (November 1983) by the supplier that welding cannot be done without replacement of the existing transformer, the Central Railway Administration ordered (March 1984) a new transformer (1000 KVA 3 phase) at a cost of Rs. 1.35 lakhs. Reasons for not ordering the transformer 'as a package' with the new plant are not on record. The old plant having already been decided for replacement, acquisition of a tailor made transformer therefor was unwarranted and involved wasteful expenditure of Rs. 2 lakhs, as it being of single phase cannot be put to use elsewhere. Besides, the investment of Rs. 74.06 lakhs on the new welder machine has remained unproductive since May 1983.

VIII. *Delay in arranging direct power supply for FBWPs*

The Mughalsarai plant had been operating on a captive 350 KVA diesel generating set. As the cost of welding was cheaper by about Rs. 5-6 per joint by bought out power, the Railway Board directed (January 1972) the Railways to buy power supply from the State Electricity Boards. The local licensee (M/s. Benaras Electric Light and Power Co.—BELP) when approached (October 1973) by the Railway, expressed difficulty as the load would be single phase with frequent peaks and low power factors which would create imbalance in their three phase net work of power supply. On the question of 33 KV power supply being taken up with Uttar Pradesh State Electricity Board (UPSEB), the Railway was advised to obtain specific permission from the Uttar Pradesh Government for power supply at Mughalsarai, as it was within the jurisdiction of M/s. BELP. The State Government having granted (November 1972) necessary permission and M/s. BELP finally taken over (February 1975) by UPSEB, 33 KV substation at Mughalsarai was commissioned by them in June 1977. It had, however, to be switched off as the Railway was not in a position to take the connection because its portion of work connected with the power supply (approved in 1971-72 at a cost of Rs. 9.52 lakhs) was not ready by that time. The FBWP was ultimately energised in April 1982, after a lapse of over five years, with direct power from UPSEB. The delay (from June 1977 to April 1982) in switching over to direct power supply after its delivery at the door step of the plant involved extra expenditure of Rs. 6.02 lakhs comprising (a) difference (Rs. 2.26 lakhs) between cost of diesel oil consumed and cost of power, (b) increase (Rs. 2.18 lakhs) in cost of power supply work, and (c) cost of establishment (Rs. 1.56 lakhs) for the diesel generator set, besides loss of saving in welding cost compared to operation with diesel generated power in the intervening period.

There was similar delay of about 3½ years (January 1979 to May 1982) on the Central Railway in availing of direct power supply due to delayed preparation of estimates, non-payment of requisite deposit to Maharashtra State Electricity Board in time etc., resulting in an extra expenditure of Rs. 6.07 lakhs.

Summing up

(i) Absence of predetermined drill for ensuring an optimum mix of thermit and flash butt

welding coupled with lack of adequate efforts over the years for optimising flash butt welding and acquiring the knowhow of thermit process for application whenever necessary led to the Railways continued dependance on the single source for large scale costlier and inferior thermit welding ;

(ii) Production of the plants on South Eastern, Central and Southern Railways has been persistently low compared to their rated capacity and there is scope for improvement as achieved on Western Railway with its older plant;

(iii) Production near about the rated capacity of 12,500 joints per annum on single shift basis could be achieved by Southern Railway in 1982-83 and 1983-84 only by double shift working;

(iv) Due to low productivity (daily 40 joints on South Eastern, 50 joints on Southern and Central and 60 joints on Eastern Railways) cost of welding was higher on these Railways (South Eastern—Rs. 245, Eastern—Rs. 104, Central—Rs. 112 and Southern—Rs. 128) compared to Western Railway (Rs. 59);

(v) Under-utilisation of Flash Butt Welding Plants was, by and large, due to managerial problems;

(vi) Wide variation in cost per weld ranging from Rs. 59 per weld on Western Railway to Rs. 245 per weld on South Eastern Railway, especially with very little variations of input costs is indicative of potentialities by suitable managerial improvements and controls;

(vii) For mechanisation of loading/unloading of rails the facilities (cost Rs. 20.95 lakhs) created on Northern and South Eastern Railways have remained unutilised (since October 1981 and March 1982 respectively), rendering the investment unproductive, besides resulting in continuance of manual operation involving an expenditure of Rs. 1.52 lakhs and payment of demurrages amounting to Rs. 4.99 lakhs;

(viii) Closure (January 1978) of the Bandel plant shortly after its overhauling (December 1976) rendered infructuous the overhauling cost (Rs. 2.14 lakhs) besides idling of the labour (cost Rs. 9.12 lakhs up to March 1984). The plant though found to be in good working conditions has not been transferred to other Railway so far as contemplated in January 1980;

(ix) A new rail welder machine (Rs. 74.06 lakhs) imported (May 1983) by Central Railway has not been commissioned so far due to the input transfer (cost Rs. 2 lakhs) obtained (May 1982) separately being of lower capacity. Matching transformer (cost Rs. 1.35 lakhs) has been ordered now (March 1984). This indicates flaws in planning resulting in unproductive investment besides wasteful expenditure of Rs. 2 lakhs; and

(x) Delays in arranging direct power supply for operating the plants on Central and South Eastern Railways resulted in an extra expenditure (Rs. 12.10 lakhs), besides loss of saving in welding cost compared to working the plants with diesel generated power in the intervening period.

38. **Safety Works on Railways**

A. Vigilance control devices

The vigilance control devices (VCDs)—a safety measure—was introduced (1964) to ensure that the locomotive driver is vigilant at all times, thereby minimising the risk of accidents.

The Railway Accident Enquiry Committee (1968) recommended that within the shortest possible time all diesel and electric locomotives should be fitted with driver's vigilance control device and all locomotives manufactured at Diesel Locomotive Works (DLW) and Chittaranjan Locomotive Works (CLW) should have it as a mandatory device. The recommendations were accepted by Railway Board. However, the progress of implimentation was very slow. Up to October 1978, 1,150 out of 1,702 diesel locomotives had been fitted with this device. These equipments had been procured from firm 'A', firm 'B', and Podanur Workshop (manufactured). But right from the date of installation of this device, serious problems in actual operation and the reliability had been reported by the Railways from time to time. Reports received from Railways showed that the equipments were not functioning properly mainly on account of poor maintenance and for want of spares. The Commissioner for Railway Safety also pointed out that functioning of VCDs was far from satisfactory and concluded that five out of six accidents which took place between 1968 and 1973 could have been avoided had the VCDs been in proper working order.

In 1980, the Railway Accident Enquiry Committee 1978 had recommended that the installation of VCD on locomotives need not be pursued till the Railways adopt a system of singleman crew on diesel and electric locomotives. Accepting the recommendations the Railway Board directed the Railways to remove these devices from the locomotives.

The Commissioner for Railway Safety did not agree with the recommendations of the Railway Accident Enquiry Committee, 1978 and pointed out that even in railway systems of other advanced countries the device was provided even though the cabs were manned by a crew of two members. The Railway Board did not, however, revise their earlier decision and directed the Railways that VCDs available on railways should be continued in service to the extent spares were available. As on July 1983 out of 1,259

VCDs available on Indian Railways, only 263 were in working order. Review conducted on Central Railway revealed that out of 217 VCDs available none of them was in working order. According to the earlier decision of the Railway Board, these equipments had been removed from the locomotives and components disposed of resulting in loss of Rs. 12.66 lakhs to Central Railway alone.

On foreign Railways, idea of providing VCD on locomotive was initially conceived, as a single person was operating the locomotive whereas on Indian Railways the system of providing a crew of two had been in force for a long time. This significant fact does not appear to have been given due weightage while accepting the recommendations of the Railway Accident Enquiry Committee, 1968. Thus, in a matter involving railway safety the Railway Board not only failed to conduct detailed examination of the suitability of control device but also failed to ensure their satisfactory functioning under Indian conditions. They were merely acting on the recommendations of the Railway Accident Enquiry Committees. The Railway Board also did not develop a suitable design for the device though the proposal had been initiated in 1973; instead kept on changing the source of supply without ensuring the suitability of the equipment. Meanwhile, an amount of Rs. 85 lakhs has been spent on purchasing equipments which did not work either because they were unsuitable or because of poor maintenance.

B. Automatic train control/warning system

Automatic train control (ATC) also referred to as Automatic warning system (AWS) is intended to ensure automatic obedience by the engine crew to the respective indications exhibited by the signals en route by giving audible and visible warning to the driver in the engine. Evasion of danger aspect of the signal results in automatic application of the brakes bringing the train to a stop before the signal, by operation of two separate devices, one on track, which is governed by the signal ahead and the other on locomotives which is activated by the track device according to the aspect of the signal.

In the context of increasing train speeds and utilising train services, the Railway Accident Enquiry Committee (1962) stressed the need for introduction of automatic train control as a safeguard against the possibility of accidents occurring from driver's failures to observe and obey the signals. Reiterating these recommendations the Railway Accident Enquiry Committee, 1968 also recommended that the lines on which speeds of 100 kmph or over were permitted should be provided with ATC and it should cover all trains including goods trains run on the section.

In 1964, the Railway Board selected Howrah—Burdwan and Gaya—Mughalsarai sections of Eastern Railway for provision of AWS. Later on, it was decided to introduce the AWS equipments to suburban sections and trunk routes on which trains run at speed of 120 kmph and more.

The progress of introducing AWS on trunk routes and suburban sections in the last 20 years has, however, been slow. The sections selected for provision of AWS and the progress made so far is as below :

S. No.	Name of the work	Year of initial works programmes	Anticipated cost (Rs. in thousands)	Outlay up to 1983-84 (Rs. in thousands)	Outlay proposed for 1984-85 (Rs. in thousands)	Physical progress as on 1-4-1984
1.	Central Railway					
	Bombay-Kalyan and Harbour Branch suburban sections (Phase I)	1978-79	200,15	2,29	100	—
2.	Northern Railway					
	Delhi-Mughalsarai section	1970-71	70,00	57	120	—
3.	Western Railway					
	Churchgate-Virar suburban sections	1976-77	271,55	38,56	19,00	6 per cent
4.	Eastern Railway					
	Howrah-Burdwan (Main line)	1968-69	20,02	20.02	..	**
	Howrah-Burdwan* (Chord line)	1967-68	14,74	14,74	..	**
	Gaya-Mughalsarai*	1967-68	12,03	12,03	..	completed
	Burdwan-Gaya	1969-70	29,54	29,54	..	60 per cent

*(sanctioned together)

**Completed in March 1984 but not commissioned.

It would be observed from the table given above that except for one work, no progress had been made on provision of AWS on the Railways (September 1984).

On the Eastern Railway, the work on Howrah-Burdwan (Chord) and Gaya-Mughalsarai sections were complete in 1980, with imported equipments (track magnets and engine cab magnets). Though 18 electric locomotives, 12 EMUs and 3 diesel locos had been fitted with the AWS equipments, only in 14 locomotives and 12 EMUs, the equipments were in working order and the others were not working on account of damages, diversion of locomotives to other circuits without returning the equipments etc. The imported equipments were also modified. Out of 189 track magnets provided on these sections 85 were stolen and 20 were damaged. The cost of replacement of these equipments is estimated around Rs. 12 to 16 lakhs. Consequently the AWS system was working only in a limited way on Howrah-Burdwan chord line.

The work on other sections is still in progress awaiting supply of equipments by ECIL. In the meantime, other matching equipments procured from trade at a cost of Rs. 8.48 lakhs had been lying idle for 3-4 years.

In order to overcome the problem of theft of the track magnets, the Railway Administration proposed replacing them with fibre-glass-bodied track magnets (which cost around Rs. 5,200 each against Rs. 2,500 each for the aluminium-body track magnets which were stolen). This replacement work is still to be carried out and the AWS brought into working order. Meanwhile, the Railway Board have decided that the engine magnet equipments received for fitting on electric locomotives should be fitted in EMU cabs. With this decision of Railway Board, the objective of introducing AWS on Howrah-Burdwan and Gaya-Mughalsarai section to cover mail/express trains runnning at speeds of over 120 km would remain unfulfilled and the expenditure on fitting track magnets would remain an idle investment.

Even before the suitability of design and equipments ordered for Eastern Railway could be tested, the AWS work on Western Railway on the suburban section of Churchgate-Virar had been sanctioned in 1976-77, estimated to cost Rs. 157.89 lakhs—since revised to Rs. 271.55 lakhs. For this work, the Western Railway chose to place an order on firm 'S' of Bombay for supply of equipment. Though ECIL had developed an indigenous design and also supplied the equipments to Eastern Railway, the costlier offer of firm 'S' had been accepted on the consideration that the design of three frequency system developed by ECIL was not adequate for suburban section and the firm 'S' offer of high frequency system was more suited for the type of working on suburban sections. The equipments offered by firm 'S' had also not been tested under Indian conditions or in the country of origin (West Germany). Besides, out of 106 numbers of EMU equipment and 530 track equipments to be supplied and commissioned in 24 months from October 1979, firm 'S' have so far (September 1984) supplied 5 EMU equipments and 101 track equipments only. The progress of the work is 6 per cent only.

The works sanctioned on Northern Railway and Central Railway were frozen by Railway Board in August 1981 after incurring an expenditure of Rs. 2.86 lakhs, as the Railway Board recognised that the AWS on Eastern Railway had not proved successful and the experience of Eastern Railway had also shown that the system was totally inadequate. However, in April 1984, though there was no evidence that the total system had worked satisfactorily on any railway, the Railway Board revised the decision of August 1981 and decided that the works already sanctioned should be progressed expeditiously. The work on Western Railway is now expected to be completed by December 1986.

It will be observed from the above that

(i) though the Railway Board had accepted in 1964 the need for installation of Automatic Warning System on trunk routes as a safety work, even after a lapse of 20 years the system has not been installed properly even on one section,

(ii) the four works on Eastern Railway which were provided in the works programme of 1969-70 and earlier still remain half done.

(iii) the investment of Rs. 1.18 crores made so far has largely remained idle, and

(iv) in the matter of equipments also the Railway Board has not attempted standardisation of specifications which would be suitable for all Indian Railways. On the contrary, the system specification approved for Eastern Railway suburban section was not adopted for Western Railway suburban section and equipment (estimated cost Rs. 271.55 lakhs) which had not been tested (even in the country of origin) was chosen in preference to equipment offered by ECIL which is reported to have spent Rs. 15 lakhs on the development of the system.

39. South Central Railway—Working of Railway Printing Press

I. *Introduction*

Central Railway Printing Press located at Secunderabad with a capacity of printing 1.8 crores of double foolscap impressions (d.f.c) per annum on a single shift working formed part of South Central Railway Administration on its formation October 1966. The Railway Administration introduced double shift working in September 1969. With commissioning of additional building and machinery by the end of 1974 at a cost of Rs. 27.87 lakhs, the Printing Press was equipped for printing 5 crore d.f.c. per annum in single shift working and 10 crore d.f.c. per annum in double shift working.

II. *Outturn achieved by the Press*

The Press had 21 machines in 1974 of which 7 were new and had been installed between December 1970 and August 1972. These seven machines and the three obtained in 1982 (in replacement of old machines) alone could give an outturn of 1,03,600 d.f.cs per single shift, *i.e.*, 5.49 crore d.f.cs per annum in double shift working. However, the Railway Administration had derated the installed capacity (10 crore d.f.cs. to 7.43, 6.08 and 5.71 crore d.f.cs. during 1980-81, 1981-82 and 1982-83 respectively. The reasons for derating the capacity from year to year are not on record. The actual outturn achieved was much less as shown below :

Year	Installed capacity (in crores of d.f.cs)	Rated capacity (in crores of d.f.cs)	Outurn (in crores of d.f.cs)	Shortfall (in crores of d.f.c)	Percentage of shortfall with reference to		No. of staff	Paper consumed (in metric tonnes)
					installed capacity	rated capacity		
1	2	3	4	5	6	7	8	9
1977-78	10	Not available	5.02	4.98	49.8		520	366
1978-79	10	3.72	5.10	4.90	49.0		523	643
1979-80	10	4.98	4.91	5.09	50.9		523	540
1980-81	10	7.43	4.42	5.58	55.8	40.51	523	652
1981-82	10	6.08	4.14	5.86	58.6	31.90	562	775
1982-83	10	5.71	4.04	5.96	59.6	29.24	697	809

It will be observed that though the number of the staff in the Press and quantity of paper consumed have been progressively increasing over the years, the outturn was 40.4 per cent of the installed capacity and 70.76 per cent of the derated capacity in 1982-83 indicating gross under-utilisation of capacity and higher wastage. The Railway Administration attributed the underutilisation to ageing of machines and increased wear and tear on account of double shift working. It may be mentioned that even according to Railway Administration's own estimate of the capacity, there was shortfall to the extent of 29.24 to 40.51 per cent in various years.

As a consequence of the poor outturn the Railway Administration had to get the printing done through trade. The number of orders and the value of work done through trade *vis-a-vis* the value of work done in the Press is shown below :

Period	Wurk done through trade		Work done in Railway Press	
	No. of Orders	Value Rs. (lakhs)	Outturn (crores of d.f.cs.)	Value Rs. (lakhs)
1980-81	259	8.76	4.42	76.27
1981-82	166	2.65	4.14	79.08
1982-83	395	16.42	4.04	107.43

Further the poor outturn resulted in accumulation of work orders as the Press could execute the work orders placed on it to the extent of 52 to 26 per cent only as shown below :

Year	No. of work orders as on March 1983		Percentage of work orders completed to those issued
	issued	completed	
1980-81	1125	586	52
1981-82	1165	553	47
1982-83	835	219	26

The following factors were found to contribute to the unsatisfactory working and low outturn of the printing press :

(a) Inadequate facilities for maintenance of machines—The Railway Board issued instructions in 1972 for creation of an organisation for proper servicing and maintenance in the Printing Press to achieve 95 per cent utilisation of the machines installed. No organisation for servicing and maintenance of machines was, however, set up by the Railway Administration to comply with the Railway Board's instructions. History sheets of the plant and machinery indicating the capacity of each machine, the number of hours the machine was out of use and details of repairs etc., were not maintained.

(b) Under-utilisation of machines and man-power—The percentage of utilisation of available machine hours was only 53 per cent in 1980-81, 62 per cent in 1981-82 and 52 per cent in 1982-83. Similarly the percentage of utilisation of available man-power was only 71 in 1980-81, 73 in 1981-82 and 72 in 1982-83 as shown below :

Year	Machine hours		Man-hours	
	available	utilised	available	utilised
1980-81	86,266	45,373	1,67,419	1,19,145
1981-82	76,680	47,585	1,51,228	1,10,174
1982-83	75,096	39,332	1,48,106	1,07,248

(c) Shortage in stock of type metal—The stock of type metal had come down from 60.9 tonnes in November 1970 to 34.7 tonnes in September 1979, *i.e.*, a shortage of 26.2 tonnes in 9 years against the average wear and tear of 1 tonne per annum during the period November 1970 to March 1974. Heavy shortages in stock of type metal

took place because of lack of proper security arrangements in the Press and unrestricted access to type metal room. The Railway Administration stated (August 1984) that :

(i) poor outturn was on account of a number of machines being overaged by 1974,

(ii) the strength of maintenance staff had since been increased and it was expected to improve the servicing and maintenance of machines in the Press, and

(iii) the shortages of type metal had not affected the production.

III. *Delay in introduction of Cost Accounting System*

The Railway Board directed in the year 1969 that the Railway Printing Presses should adopt from 1st April 1970 the accounting procedure prescribed in the Indian Railway Code for the Mechanical Department by operating 'Workshop Manufacture Suspense' account. The Railway Board further directed the Railways to introduce costing system. The Railway Administration has not implemented these directives so far (December 1984).

The Railway Administration stated (August 1984) that their proposal for creation of 8 posts—an Assistant Foreman, a Chargeman, a Planner Computer, a Clerk Grade I, a Clerk Grade II, two Section Heads and a Section Officer (Accounts)—required for introduction of the Cost Accounting System had been submitted to the Railway Board in the year 1978 which was still under their consideration.

IV. *Delay in installation of Plant and Machinery*

The Railway Administration had obtained 7 machines between 1982 and 1984, in replacement of old machines.

A single colour offset machine (cost Rs. 10.11 lakhs) and two reduced stop cylinder letter press printing machines (cost Rs. 8.89 lakhs) obtained on replacement account in October 1982 and March 1983 were installed in February and May 1983 only.

The three new machines were expected to give an outturn of 4800 d.f.cs per hour against 2300 d.f.cs per hour of the old machines replaced. The delay in installation has resulted in a loss of production capacity of 91 lakh d.f.cs. per annum. In addition, a rotary machine (cost Rs. 15.39 lakhs) was ordered in October 1981 for increasing the outturn by 1.5 crore d.f.cs per annum in single shift. The delivery period of the machine was deferred from October 1982 to December 1983 at the request of the Railway Administration as the new building to house the machine was not ready. The machine was installed in July 1984. It is working under trial and is yet to be commissioned on a regular basis.

V. *Working of the Ticket Printing Press, Secunderabad*

The following irregularities/deficiencies in working of the Ticket Printing Press during the year 1980-81 to 1982-83 were noticed :

(i) Duplicate tickets with same numbers were supplied.

(ii) In the tickets supplied there were cases of omission of a series and printing of duplicate tickets of another series.

(iii) Tickets with incorrect printing of fare, destination and other particulars were received.

(iv) Certain bundles in the tickets stated to have been despatched to stations as per the memo of despatch were missing.

(v) Tickets were despatched to stations other than the indenting stations.

A committee of officers appointed in February 1980 to investigate into the working of the press with regard to the printing and supplies of tickets and money-value books to stations had recommened streamlining the procedures and intensifying the supervision. However, there appeared to be no improvement in the position as such irregularities continued to recur.

The Railway Administration stated (August 1984) that suitable steps had been taken to minimise such irregularities, pin-point human/machine failures and prevent recurrence of mistakes.

VI. *Drawal of blank card tickets for printing*

(i) The Ticket Printing Press is drawing its requirements of blank cards for printing from Stationery and Forms Depot. A stock verification conducted in June 1983 by the Accounts Department in the Ticked Printing Section revealed a huge deficiency of 6.12 crore tickets valued at Rs. 5.05 lakhs. The shortages are yet to be investigated (December 1984).

(ii) The Ticket Printing Press also had a huge stock of unserviceable blank card tickets accumulated over the years. The quantity of unserviceable blank card tickets in stock was estimated at 11.35 tonnes (approx.) or 1 crore tickets in December 1982.

(iii) Further, the total number of tickets printed by the press during the years 1980-81, 1981-82 and 1982-83 was 49.43 crores, whereas the number of tickets to be printed on the basis of indents received was only 44.86 crores. Thus 4.57 crores of tickets were printed in excess of the indents. The cost of the excess tickets printed amounts to Rs. 5.94 lakhs. The disposal of these excess tickets printed has not been investigated as linking up of the statement of printed tickets with the indents has not been done by the Railway Administration so far (December 1984).

VII. *Loss due to non-return of fabricated blank card tickets by a Contractor*

Twentyfive reams of ticket boards were given to a firm of Secunderabad on 7th February 1979 to fabricate and supply blank card tickets. As per the terms, the contractor was to supply 25 lakh blank card tickets to the Stationery and Forms Depot but the contractor supplied only 1.8 lakhs blank cards tickets on 21st February 1979. On enquiry by the Stationery and Forms Depot, for supply of remaining tickets it was stated that these were supplied direct to the Ticket Printing Press. But the Ticket Printing Press has neither confirmed the supply of 23.20 lakh blank card tickets by the contractor nor accounted the receipt. The matter was reported to be under investigation by C.B.I. (August 1984).

VIII. *Miscellaneous items*

(a) Under-utilisation of assets

The estimate for an additional building accommodation sanctioned in 1971 provided for a BG siding at a cost of Rs. 2.12 lakhs for an anticipated traffic of 150 wagons per annum. The construction of siding was justified as economical compared with cost of operating two lorries for doing the work. The siding was opened for traffic in August 1977. It was, however, noticed that during the period August 1977 to March 1983 only 38 wagons per annum were received/despatched at this siding as against the projected traffic of 150 wagons per annum.

The Railway Administration stated (August 1984) that in the absence of the siding it would have been extremely difficult and highly expensive if the press had to clear huge consignments like rolls for rotary machine each weighing 200 to 250 kgs.

(b) Accounting irregularities

The main consumable item at the General Printing Press is paper. The paper required is drawn on the basis of work orders placed on the Press and the cost of the paper drawn is debited/distributed to the indenting departments of the Railway. However, as mentioned earlier, the press has been able to execute less than 50 per cent of the work orders placed. Thus there had been huge accumulation of stock of paper drawn against work orders not executed. But no account of the paper such as receipt, issue and balance etc. are maintained. No physical verification of the balance of paper was arranged.

The Railway Administration has not reconciled (December 1984) the stock of paper drawn on work orders to be executed with actual stocks available.

(c) Working hours of the Press

The rostered working hours per shift in the Press are 42 hours in a week, at 7 hours per day for six days as against 48 hours in a week prescribed for Railway workshops in the Railway Code for Mechanical Department and 47½ hours a week actually followed by the Railway workshops at Secunderabad. Thus the working hours of the Printing Press are considerably less as compared to the workshops.

The Railway Administration stated (August 1984) that the Press has been working seven hours a day since the days of Nizam State Railway and this matter is engaging its attention for apprising the Railway Board of the same. The working of the Press for forty-two hours in a week results in a loss of Rs. 4.9 lakhs per annum.

Summing up

- By the end of 1974 the South Central Railway Administration had equipped the Press with additional machinery and building at a cost of Rs. 27.87 lakhs so as to achieve an outturn of 10 crore d.f.cs per annum in double shift working. However, the actual outturn achieved in the various years was only 40 to 50 per cent of the installed capacity.
- The Administration had derated the capacity to 5.7 crore d.f.cs per annum in 1982-83 though some of the machines installed were new and capable of giving an outturn of 5.49 crore d.f.cs per annum. As a consequence of the poor outturn, the Railway Administration had to offload work of the order of Rs. 16.4 lakhs *i.e.,* about 15 per cent of the value of the work done in the Press which had remained under-utilised.
- The under-utilisation of the capacity was observed to be mainly due to poor maintenance of the machines, under-utilisation of manpower and shortage of type metal.
- The Railway Administration had not taken action for proper maintenance of the machines in spite of the instructions of the Railway Board.
- There were delays in the installation of the machines purchased during the period 1982 to 1984 resulting in loss of production capacity of 91 lakh d.f.cs per annum.
- The working of the Ticket Printing Press in regard to printing and supplies of tickets and money value books to stations was unsatisfactory. There were number of cases of supply of duplicate tickets with same numbers, omission of series, incorrect printing of fare, destination and other particulars on tickets, despatch of tickets to stations other than indenting stations etc.
- There was a huge deficiency of 6.12 crore blank card tickets valuing Rs. 5.05 lakhs as revealed by Accounts Stock Verification, accumulation of a huge stock of unserviceable blank card tickets estimated at 1 crore tickets and excess printing of tickets valued at Rs. 5.94 lakhs.
- Blank card tickets numbering 23.20 lakhs stated to have been supplied to the Ticket

Printing Press by a fabricating contractor have not been confirmed by the latter as having been received. The matter is under investigation by C.B.I.

— A broad gauge siding constructed at a cost of Rs. 2.12 lakhs in August 1977 for an anticipated traffic of 150 wagons per annum, dealt with only 38 wagons per annum from August 1977 to March 1983.

— There is a huge accumulation of stock of paper drawn against work orders not executed, which has not been accounted for.

— The rostered working hours per shift in the Printing Press are 42 hours in a week against the prescribed 48 hours per week, resulting in a loss of Rs. 4.9 lakhs per annum.

40. Central, Northern and South Central Railways—Movement of tarpaulins

The rules for the maintenance, upkeep and movement of tarpaulins, *inter alia,* provide that tarpaulins should have identification marks of owning Railway followed by serial number of year of purchase and should be stored at one or more central goods depots of each Railway. Individual numbers of tarpaulins used on wagons for protecting consignments should be entered on invoices and other documents.* The forwarding stations should telegraph destination stations to return the tarpaulins immediately on release to the originating or the depot station. Forwarding and destination stations should maintain a proforma register showing the use, receipt and disposal of tarpaulins to ensure prompt return of tarpaulins to the forwarding depot/stations.

A review by Audit of records of custody and movement of tarpaulins maintained at the base depots on the Railways indicated loss/non-accountal, improper use, unnecessary procurement and premature condemnation of tarpaulins due to non-observance of prescribed rules as described in the following paragraphs.

Loss/Non-accountal

The rules require that tarpaulins utilised on open wagons booked to other Railways should be returned by them to the owning Railway within 90 days of the date of invoice failing which the owning Railway should raise debit on the destination Railway concerned, allowing a further period of 2 months to prove delivery of tarpaulins to the owning railway. A review of the position on the South Central and the Central Railways showed that these instructions were not being observed in as much as 6 to 20 per cent of the tarpaulin holdings of these railways were lying on other railways for over 90 days as shown below :

Railway	Name of Depot	No. of tarpaulins held	No. of tarpaulins lying with other Rlys.		Amount (in lakhs of rupees)
1	2	3	4		5
Central	Wadi Bunder	12,000	735 (as on 15-1-83)		7.10
South-Central	Secunderabad (BG)	1,853	380	as on 31-3-84	2.88
	Secunderabad (MG)	550	125		1.41
	Vijayawada	2,059	464		3.21
	Hubli	726	137		0.55

The debits raised by these railways had also not been accepted by other railways.

It was also observed that besides the substantial number of tarpaulins stated to be outside the railway, even within the railway, a large number of tarpaulins remained unlocated. As at the end of March 1984, 417 tarpaulins (value Rs. 3.17 lakhs) on South Central Railway and 3,925 tarpaulins (value Rs. 30.45 lakhs) on Central Railway remained unlocated.

Similarly on the Northern Railway, the actual number of tarpaulins held on 31st March 1983 was only 306 against the authorised holdings of 6,423 tarpaulins in Ambala and Ludhiana base depots. The number of tarpaulins which had not been returned to the base depots at the expiry of one month was 5,137, at the expiry of two months it was 4,500, and at the expiry of 3 months it was 3,710. Thus 57 per cent of tarpaulins had not been received back at the depots even after 3 months. The value of 3,710 tarpaulins which have not been traced works out to Rs. 55.65 lakhs. The depots had not taken any action to chase their return by unloading stations.

In April 1978, the Northern Railway constituted a works study team to suggest ways and means to streamline the methodology of documentation and to provide adequate chasing machinery. The recommendations of the work study team for introducing a cardex system, submitted in October 1978, were accepted by the Administration in April 1981. With the

*Outward/inward tally books, wagon labels, vehicle guidances, seal checking books and the number taker books at the starting, intermediate and destination stations.

introduction of cardex system it was expected that the turnround period would be reduced to 27 days, against 23 to 210 days as observed by the works study team in 1978, thereby reducing the requirement of tarpaulins by 62 per cent. These recommendations have not been implemented so far even after a lapse of 3 years. In the meantime, an expenditure of Rs. 54.83 lakhs had been incurred on the purchase of tarpaulins between 1979 and 1983.

Improper use

As many as 2,069 tarpaulins of South Central Railway valued at Rs. 23.34 lakhs and constituting 37.5 per cent of the total tarpaulin holdings, lying at different stations of the Railway, as on 31st March 1984 (as per details given below) are being used for purposes other than coverage of loaded open wagons resulting in increased inventory of tarpaulins at base depots.

Name of depot	Number of tarpaulins lying at stations as on 31st March 1984			*Amount (Rs. in lakhs)
	Box type	KC type	Total	
Secunderabad (BG)	246	195	441	5.25
Secunderabad (MG)	79	106	185	2.03
Vijayawada	560	276	836	10.60
Guntakal	36	10	46	0.62
Hubli.	50	511	561	4.84
	971	1,098	2,069	23.34

*Amount assessed at the rate of Rs. 1500 per BOX tarpaulin and Rs. 800 per KC tarpaulin.

Unnecessary procurement

Secunderabad (BG) Depot procured 120 tarpaulins in August 1982 and 280 tarpaulins in October 1982 valued at Rs. 3.20 lakhs (assessed at Rs. 800 each) without any necessity therefor. These tarpaulins are lying unutilised.

Premature condemnation

The normal life of a tarpaulin is 5 years. It was, however, observed that 197 tarpaulins of South Central Railway valued at Rs. 2.15 lakhs were condemned prematurely during the period 1981-82 to 1983-84 by the Depots as indicated below :

Name of Depot	No. of tarpaulins		*Amount (Rs. in lakhs)
	Box type	KC type	
Secunderabad (BG)	41	103	1.44
Vijayawada	41	12	0.71

*Amount assessed at Rs. 1500 per BOX tarpaulin and Rs. 800 per KC tarpaulin.

S/20 C & AG/84—13.

The premature condmenation of tarpaulins is attributable either to substandard quality thereof or mishandling during transit. 231 tarpaulins valued at Rs. 1.30 lakhs sent to Southern Railway were condemned by the tarpaulin depot at Vijayawada in October 1980 without physical verification of the condition of tarpaulins.

The Northern Railway had purchased 900 tarpaulins in November/December 1982, of which 100 tarpaulins valued at Rs. 1.60 lakhs were condemned after only one turn-round. The new tarpaulins had been sent for covering cement consignments at Shakurbasti where they had been replaced by unserviceable ones and returned. The Railway Administration has not, so far, investigated the loss.

41. Railway Service Commissions

Railway Service Commissions (RSC) cater to the recruitment needs of Group 'C' staff for the zonal Railways. In addition to the already existing nine commissions located at Allahabad, Bombay, Calcutta, Madras, Bangalore, Secunderabad, Gauhati, Muzaffarpur and Patna, Railway Board set up (September 1982) seven more RSCs at Jammu & Srinagar, Chandigarh, Ajmer, Ahmedabad, Bhopal, Bhubaneshwar and Trivandrum with a view to further decentralising the recruitment process and affording opportunity to the candidates in far flung areas. The standard composition of a RSC is a Chairman (Rs. 2000—2250), a Member Secretary (Rs. 1500—2000) and an Assistant Secretary (Rs. 650—1200) with about nine supporting staff. Considering that multiplicity of commissions involves, inter alia, administrative and communicafion problems, the Railway Reforms Committee (RRC) recommended (June 1983) reverting back to nine commissions—one for each Railway, which would be both a workable and economical arrangement concomitant with the National character of Railways. However, contrary to the above recommendation, the Railway Board set up (July 1984) three more RSCs at Malda, Ranchi and Gorakhpur. These commissions have been functioning since last year, although necessary sanction to the creation/operation of the posts for them is yet to be accorded.

In absence of any ban, the candidates are free to apply to more than one commission the jurisdiction of which may not even cover their home towns. This has the effect of not only manifold increase in the workload of the commissions, but also of the proliferation scheme being rendered to little practical utility so far as its objective of affording opportunity to the candidates in far flung areas is concerned. The same objective could have, however, possibly been well achieved by setting up more examination centres at suitable places instead of proliferating the commissions from nine to nineteen. The establishment of ten RSCs in excess of those (nine) recommended (June 1983) by the RRC involves a financial implication of Rs. 58 lakhs (approx.) per annum. (based on assessed cost of three commissions set up in July 1984).

The RSCs conduct mass examinations for filling up vacancies on the Railways under their respective jurisdiction. Certain shortcomings noticed in this regard in the RSCs at Allahabad and Bombay are mentioned below :

Despite receipt of applications several times more than the advertised vacancies the requirement of the Railways could not be fully met during the period 1975-76 to 1981-82 the actual coverage in some years being not even 50 per cent of the demands as would be seen from the details below :

Year	No. of vacancies	No. of applications received	No. recommended	Ratio of applications/ vacancies	Percentage of selections made to the vacancies advertised
		(1) RSC/Allahabad			
1975-76	2,518	1,05,243	1,250	42 : 1	49.6
1976-77	2,515	4,87,086	1,349	193 : 1	53.6
1977-78	1,387	32,623	1,224	24 : 1	88.2
1978-79	4,634	4,98,006	1,983	107 : 1	42.7
1979-80	4,047	4,80,000	2,876	118 : 1	71.0
1980-81	—Not available—				
1981-82	—Not available—				
		(2) RSC/Bombay			
1975-76	3,096	16,122	1,730	5 : 1	55.8
1976-77	4,248	1,41,790	2,307	33 : 1	54.3
1977-78	5,429	1,86,985	2,174	34 : 1	40.0
1978-79	5,303	1,92,380	1,166	36 : 1	21.9
1979-80	11,721	63,086	5,062	5 : 1	43.2
1980-81	15,160	3,28,285	5,952	22 : 1	40.0
1981-82	2,350	..	854	..	37.0

The continued shortfall in coverage of their requirements led to the Railways filling up the vacancies by *ad hoc* promotions of the staff from lower categories often without formal selection, thereby defeating, by and large, the objective of direct recruitment of better personnel through RSCs.

The RSC, Allahabad invited (March 1981) applications for recruitment of Group 'C' staff to 970 non-technical posts on Northern Railway. A written examination was scheduled to be held on 25-10-1981. When all arrangements had been completed for holding the examination and delivery of printed question papers to the representatives of various examination centres commenced (from 19-10-1981 onwards) the RSC on receipt (19-10-1981) of information about leakage of the question papers cancelled (22-10-1981) the examination which was later held on 28th February 1982. Failure to maintain secrecy of the question papers led to cancellation of the examination (25-10-1981) resulting in infructuous expenditure of Rs. 4.83 lakhs towards printing of question papers, call letters and other contingent charges.

The CBI investigation into the matter revealed that contrary to Railway Board's instructions (July 1964) for printing of question papers in security or in Government Press, the RSC, Allahabad had got the question papers printed at the AMU Press, Aligarh where security arrangements were inadequate and to which even Aligarh Muslim University did not entrust the printing of its own question papers. The suspect involved in the leakage of question papers could not be located during the CBI enquiry.

By way of remedial measures, the Railway Board advised (September 1983) the RSCs that for printing of question papers they should seek the help of the State Government Presses which have secret wings for printing of secret papers. Nevertheless, for a subsequent mass examination to be conducted by the various RSCs on 26th February 1984, the Railway Board themselves arranged printing of question papers through a private agency on the Ministry of Works and Housing declining to undertake the job. Again there was leakage of the question papers and the examination had to be cancelled (25th February 1984) involving an infructuous expenditure of about Rs. 11.36 lakhs towards printing of question papers (Rs. 9.07 lakhs) and other contingent charges (Rs. 2.29 lakhs). Besides, free rail travel facilities allowed to the candidates from and to their home stations for appearing at the examination later held on 27th May 1984 also entailed expenditure of Rs. 73.79 lakhs (approx.) in respect of eight commissions alone (position relating to other commissions not readily available). CBI investigation in the matter is in progress.

Repetitive cases of cancellation of examinations involving infructuous expenditure, besides harassment to the candidates, would point to lack of adequate safeguards in the existing arrangements for printing, custody and distribution etc., of the question papers against their leakages and call for suitable streamlining of the procedure.

According to the Railway Board (November 1984), necessary instructions had been issued (March 1984) for tightening up the security measures but it may not be possible to stop completely the leakage of question papers, whatever measures be taken. It is not, however, known whether the Railway Board have ever examined how the system|procedure on the Railways compares with those of the Union Public Service Commission and Staff Selection Commission who also conduct similar mass examinations.

In RSC, Bombay, besides the reported insistence of the Chairman on knowing the question papers well before the examinations, there had been cases of supplementing original application of the candidates, fabrication of answer sheets and their replacement, hold up of answer books, forgery in tabulation and unauthorised appointments etc. Report of the CBI investigation ordered (May 1983) into the malpractices is awaited (November 1984).

Summing up

(i) Unnecessary excessive proliferation of the RSCs involved avoidable expenditure of Rs. 58 lakhs per annum ;

(ii) Failure of the commissions to meet the Railways' requirements led to *ad hoc* departmental promotions of the staff from lower categories without formal selection, thereby defeating the objective of recruitment through RSCs ; and

(iii) Repeated failures to maintain secrecy of question papers resulted in infructuous expenditure of Rs. 89.98 lakhs.

The Ministry of Railways (Railway Board) stated (January 1985) that it had been decided not to accept the recommendation (June 1983) of the RRC.

42. Recruitment of Special Class Apprentices

For the Indian Railway Service of Mechanical Engineers (IRSME) there are two streams of recruitment, both through the Union Public Service Commission out at different levels of initial qualifications. Fifty per cent of the vacancies are filled up through Combined Engineering Services Examination (CESE), open to all graduate engineers, as is done in the case of other engineering departments of the Railways. The balance 50 per cent is recruited as Special Class Apprentices (SCA) for which the minimum qualification is Intermediate (Science) or its equivalent.

In deference to the public pressure for Indianisation in the specialised branch of Mechanical Engineering the scheme for training SCAs was initiated (1927) at Jamalpur—presently Indian Railway Institute of Mechanical and Electrical Engineering (IRIMEE). The SCAs are to undergo a sandwich course of theoretical and practical training (in workshops) for four years and to pass during this period Parts I and II examinations of the Council of Engineering Institutions (CEI), London or Sections A & B examinations of Associate Membership of the Institutions of Engineers (AMIE), India. On successful completion of the apprenticeship and subject to passing of the CEI|AMIE examinations the SCAs are posted as probationary Assistant Mechanical Engineers|Assistant Works Managers (in scale Rs. 700—1300) for further three years' training like the graduate engineers recruited through CESE.

During the period of training the SCAs are allowed stipend (@Rs. 350 per month for the first two years and @Rs. 400 per month thereafter), dearness allowance, free furnished hostel accommodation as also privilege passes and privilege ticket orders. For 244 SCAs undergoing training during period 1978-79 to 1982-83 the direct expenditure on payment of stipend, allowances, examination fees etc. amounted to Rs. 27.11 lakhs, besides the indirect expenses of Rs. 13.22 lakhs towards the pay and allowance of the teaching staff, cost of stores etc. proportionate to the courses exclusively for SCAs. The direct and indirect expenditure per apprentice aggregate to about Rs. 0.16 lakhs per annum or Rs. 0.64 lakh for the entire training period of four years. Reckoned on this basis the training of about 16 SCAs recruited per year on an average during 1978-79 to 1982-83 till their placement in service cost the Railways about Rs. 10.24 lakhs which would not have been involved in direct recruitment of graduate engineers.

The basic consideration, *viz.*, dearth of qualified Indian Engineers which prompted the introduction (1927) of the scheme of training SCAs at the cost of the Railways cannot but be deemed to have ceased to exist with the adequate availability of well qualified engineers from numerous engineering institutions presently in the country. In view of this and the economy involved in the open recruitment of graduate engineers, the continuance of the apprenticeship scheme only for the Mechanical Engineering branch would not appear justified, especially when such dual streams of recruitment are not in existence for other branches of the Railway Engineering, *viz.*, Civil, Electrical and Signal and Telecommunications.

The Ministry of Railways (Railway Board) stated (December 1984) that the continuance or otherwise of the SCA scheme had been examined in depth from time to time and a conscious decision had been taken to continue it alongwith the direct recruitment of graduate engineers for the IRSME keeping in view the relevant factors like recruitment of young boys receptive to training, practical training imparted on the shop floor enabling the apprentices to learn trades of specific application to the Railways besides development of good relationship with the labourers, and theoretical training being of the same standard as obtaining in the graduate engineering colleges.

The following points, however, merit mention in this connection :

(a) Having regard to the adequate availability of qualified mechanical engineers in the country from the large number of Engineering Institutions including IITs which have come up since independence as also the modernisation and sophistication of technology on the Railways, it was decided (December 1981) to discontinue the SCA scheme as it was held to have long outlived its utility ;

(b) The Estimates Committee (Vidhan Sabha, U.P.) had also advocated the discontinuance of the recruitment of IRSMEs through the SCA examination; and

(c) The conscious decision of December 1981 to discontinue the SCA scheme was reversed in March 1982 without spelling out the reasons for the *volte-face* in the decision.

43. Western Railway—Irregularities in the award and working of handling contract at Hapa transhipment point

A new transhipment point was commissioned in April 1980 at Hapa as a temporary measure till the second and final phase of the project Viramgam—Okha-Porbandar was completed and opened for traffic.

A review in audit disclosed the following irregularities in the award and working of goods handling contract at this transhipment point :

(1) Extra expenditure due to delay in awarding fresh contract at Hapa.

It was anticipated at the time when this transhipment was opened (*i.e.* by April 1980) that the remaining MG sections upto Okha and Porbandar would be converted (phase II) and opened in a year's time with a slippage of 2 to 3 months subject to availability of funds and material. Hence after inviting limited tenders and holding negotiations with the tenderers, the contract for transhipment of goods at Hapa was awarded to the lowest tenderer, Firm 'A' initially for a period of one year only from 16th June 1980 with a provision in the agreement that the contract period could be extended by one more year on the same terms and conditions. The contract agreement, *inter alia,* provided escalation clause on the basis of consumer's price index of Ahmedabad published by the Labour Bureau of the Ministry of Labour, Government of India.

Before the expiry of this contract period *i.e.* by May 1981, it became known that the transhipment work at Hapa would have to be continued for 3 to 4 years as the second phase of the conversion project was slowed down for want of funds. The contract period was extended by one year from 16th June 1981 to 15th June 1982. While giving concurrence, the associated finance had brought out (May 1981) that very high rates had been accepted in this contract initially on the consideration that the work at Hapa was not likely to continue for more than 15 months. Further, since the transhipment at Hapa would continue for 3 to 4 years due to meagre budget allocations, and pattern and quantum of traffic handled had also stabilised, it was advisable to test the market by invitation of open tenders.

Keeping in view the above advice, the General Manager, Western Railway decided that action should be taken to invite open tenders and award new contract positively by 15th June 1982 by avoiding delays which tend to creep into the process.

The Railway Administration, however, delayed the action by about 15 months and concluded a contract after invitation of open tenders (February 1983) and negotiations with Firm 'B' the lowest tenderer with effect from 1st August 1983. The value of the new contract was however, higher by 46.07 per cent above the value of the earlier contract at the escalated rates from time to time (upto June 1982).

Earlier, pending finalisation of the new contract, extensions were given to the existing contractor (firm 'A') from 16th June 1982 to 31st July 1983 (13½ months) with a stipulation that payments for the period of extension would be made to them at the existing rates or the new contract rates, whichever were higher.

The following lapses arise in this case :—

(a) The Railway Administration unnecessarily delayed invitation of tenders for nearly 15 months and finally when the new contract was awarded (August 1983) it was known that the transhipment work at Hapa would be continued for another 8 to 9 months only. In the process the Railway lost the benefit of securing lower rates which were expected if contract was given for full period of three years; and

(b) It was not prudent on the part of the Railway Administration to give extensions to the first contractor agreeing to payment for the period of extension at the existing rates or the new contract rates whichever were higher because the rate paid to that contractor were updated from time to time to correspond to the price indices as provided by the escalation clause of the contract. As the rates of the later contract were much higher due to its short tenure, the earlier contractor got unintended benefit estimated at Rs. 33.96 lakhs.

(2) *Overpayment due to payment for two operations*

The transhipment contract at Hapa awarded to Firm 'A' from 16th June 1980 to 31st July 1983 and to firm 'B' from 1st August 1983 to 31st March 1984, *inter alia,* provided for separate rates for transhipment of coal from BG wagons into coal dump and from the coal dump into MG wagons in two operations and from BG wagons direct into MG wagons as under :

(i) Rs. 20.30 per 100 quintal for unloading and reloading *via* the dump *i.e.* Rs. 40.60 per 100 quintal.

(ii) Rs. 30 per 100 quintal, if transhipment is directly from BG to MG wagons.

Both the rates were subject to escalation with reference to consumer price index of Ahmedabad as already stated.

It was, however, noticed during the review of this transhipment point in audit (April 1984) that no coal dump as such was created at Hapa between 1980 and 1984 (this transhipment point was closed in April 1984 on completion of final phase of conversion. In January 1981—March 1981, the Western Railway Administration had also decided not to operate any coal dump at Hapa due to availability of metre gauge wagons released from the converted sections from June 1980. Accordingly, the Divisional authorities at Rajkot controlling the transhipment operations at Hapa were advised (March 1981) that dumping of coal was not to be done at Hapa. It was also observed that the BG coal wagons were regularly transhipped directly into MG wagons at Hapa. In fact BG coal wagons were considered as available for transhipment only when matching MG stock was placed in

position so that direct transhipment could be done. The contractors were, however, paid transhipment charges for two operations at the rate of Rs. 40.60 per 100 quintals duly escalated from time to time, as if the unloading/reloading operation was done *via* the dump which never existed. Since no coal dump existed and no dumping operation was done at Hapa the contractor should have been paid for transhipment of coal from BG wagons to MG wagons at the rate for single operation *i.e.* Rs. 30 per 100 quintal (subject to escalation etc.). The above irregular practice of payment for double operation had resulted in over payment to the extent of Rs. 16.60 lakhs.

Similar type of irregular payment for transhipment of coal for two operations *i.e.* from the BG wagons into the dump and from the dump into MG wagons even when no coal was unloaded at a dump was noticed in audit at the Sabarmati Transhipment point during the period from August 1980 and the avoidable payment involved was to the tune of Rs. 23.06 lakhs upto the period of March 1983 and the irregularity is still continuing with a recurring extra payment of about Rs. 12 lakhs per annum.

The following lapses arise in this case :

(a) The Divisional authorities controlling the transhipment operations at Hapa failed to take note of the instructions of the Western Railway Administration of March 1981 that there was no necessity of operating the coal dump at Hapa.

(b) Despite there being no coal dump and that transhipment was done directly from BG to MG wagons in single operation after provision of matching stock, the contractors were overpaid to the tune of Rs. 51.66 lakhs by operation of rates for two operations for over three years at Hapa and Sabarmati (upto end of March 1984).

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

During the year 1983-84, Rs. 2.86 crores were recovered or agreed to be recovered at the instance of Audit. Further, an amount of Rs. 0.19 crore was also recovered as a result of further review made by the Railway Administrations of these and similar cases.

S. P. Gugnani

New Delhi
Dated the 27th APRIL 1985
7 VAISAKHA 1985
1906

(S. P. GUGNANI)
Additional Deputy Comptroller and
Auditor General of India (Railways)

Countersigned

T. N. Chaturvedi

New Delhi
Dated the 27th APRIL 1985
7 VAISAKHA 1985
1906

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

ANNEXURE—I

(cf. Para 1.2.2)

Statement showing P.O.L. loadings and consumption product-wise

(thousand tonnes)

Product	1981-82		1982-83		1983-84	
	Consumption	Railway loading	Consumption	Railway loading	Consumption	Railway loading
1	2	3	4	5	6	7
Diesel	10832	6794	12013	6985	12489	7077
Kerosene Oil	4693	2512	5214	2682	5505	2873
Petrol	1599	1036	1722	955	1885	945
Other fuel	1128	674	1145	984	1200	1085
Crude		3		56		6
Lube Oil	592	228	605	313	611	196
Other mineral oil	1036	64	1067	208	1093	377
Other mineral oil (Non-dangerous)	7184	3585	7301	3174	7570	3273
LPG	492	101	601	125	747	150
Coal Tar	175	112	1889	121	227	56
Petroleum Coke	174	70	103	113	113	180
Bitumen	1292	719	1379	726	1014	477
Turpentine		17		20		29
Naphtha	2963	636	2958	875	2783	1188
Total	32523	16955	34657	17342	35601	17949

Note :—Variations in totals are due to rounding off.

ANNEXURE—II

(cf. Para 1.5.4)

Statement showing number of tank wagons loaded

Year	P.O.L.	R.F.O.	Bitumen	L.P.G.	Hexene	Total BG	Total MG
1	2	3	4	5	6	7	8
1978-79	466,060	78,094	4047	6066	372	554,639	105,363
1979-80	486,675	68,435	3478	5402	376	564,416	99,307
1980-81	531,112	57,462	631	5596	282	595,083	99,907
1981-82	579,034	92,971	3780	7550	227	683,562	101,497
1982-83	617,355	99,138	3054	9692	194	729,433	96,312
1983-84	665,989	105,317	4054	9706	219	785,285	94,365

ANNEXURE—III

(cf. Para 1.5.9)

Base-wise analysis of loadings vis-a-vis slate during 1983-84

Metre Gauge

Base Station	Daily Slate Average Loading (Number of wagons)		Short-fall mean percent	Shortfall occuring in no. of months
1	2	3	4	5
Kandla	80	65	18	12
Mathura	25	19	24	10
Sabarmati	46	44	4	4
Barauni	8	7	13	2
Siliguri	24	16	33	11
Gauhati	13	11	4	8
Tinsukia	42	30	29	12
Bongaigaon	9	6	33	9
Vasco-da-gama	23	21	8	5
Manmad	11	10	9	8
Bangalore	10	11		3
Tiruchirappalli	19	17	10	10
Madras	4	3	25	6

Broad Gauge

Base Station	White Oil				Black Oil			
	Average Loading Daily Slate (Number of wagons)		Shortfall		Average Loading Daily Slate (Number of wagons)		Shortfall	
			Mean percent	Occurring in no. of months			Mean percent	Occurring in no. of months
1	2	3	4	5	6	7	8	9
Barauni	43	36	17	7	7	4	42.85	9
Siliguri	64	45	29.68	11	46	38	17.39	8
Bongaigaon	14	8	42.85	11	20	10	50	12
Haldia	57	52	8.77	7	23	28	..	3
Rajbandh	30	17	43.33	11	..	..	..	..
Visakhapatnam	164	147	10.36	10	36	33	8.33	9
Budge Budge	14	7	50	11	..	..	..	..
Panki	26	32	..	2	15	13	13.33	8
Koyali	331	324	2.11	7	65	60	7.69	7
Mathura	200	160	20	11	112	113	..	5
Bombay	260	234	2.30	10	24	22	8.33	5
Kandla	13	22	..	..	..	..	..	..
Cochin	184	158	14.13	12	16	14	12.5	9
Madras	156	148	5.12	8	19	17	10.52	7
Suchipind	70	62	11.42	9	..	..	..	..

S/20 C & AG/84—14

ANNEXURE—IV

(cf. Para 1.5.39)

Statement showing indents, supply and loading of tank wagons on railways

(Number of wagons)

Railways	Year	Indent	Supply	Loaded	Not loaded	Due to		
						Rejection	Excess Supply	Left over
1	2	3	4	5	6	7	8	9
Central . . .	1978-79	..	140733	108057	32676	13608	9052	10016
	1979-80	..	142030	105796	36234	16090	11140	9004
	1980-81	..	155969	116130	39839	17892	15070	6877
	1981-82	..	150982	112349	38633	16344	13360	8929
	1982-83	..	127315	84854	42461	18633	15056	8772
	1983-84	..						
Eastern—Budge Budge	1982-83	3936	3792	2315	1477	697	770	
	1983-84	3555	4707	2891	1816	912	904	
Northern . . .	1981-82		31374	29559	1815	1220	660	
	1982-83		23986	22167	1819	1092	791	
	1983-84 (upto December 1983)		13551	12483	1068	675	397	
North Eastern (MG) .	1978-79	9644	7929	6245	1684	794	890	
	1979-80	6798	7495	5685	1810	824	986	
	1980-81	4156	3371	2421	950	358	592	
	1981-82	4325	3175	2722	453	238	215	
	1982-83	3316	7730	3195	4535	175	4360	
Southern B.G. .	1980-81	103937	107603	103509	4094	4094	—	—
	1981-82	114034	115106	112165	2941	2941	—	—
	1982-83	130744	129392	121729	7663	3613	—	4047
	1983-84	140867	136765	130389	6376	6376	—	—
M.G. . .	1980-81	15310	16852	15371	1481	1481		
	1981-82	12594	14133	12768	1465	1365		
	1982-83	15624	15491	13145	2346	2346		
	1983-84	13095	13806	11025	2781	2781		
Sample check at Irimpanam . . .	October 1982	4300	4891	4865	26	26		
	November 1982	4275	5224	4634	590	590		
Baiyyappanahalli .	October 1982	291	463	284	179	179		
	November 1982	392	401	310	91	91		

1	2	3	4	5	6	7	8	9
South Central (MG) .	1981-82	3187	5735	2549	3186			
	1982-83	3435	5104	2974	2130			
Manmad . . .	1983-84	3731	4829	3724	1105			
Vasco-da-gama . .	1981-82	8963	5980	5809	171			
	1982-83	7345	6590	6517	73			
	1983-84	9187	8024	7912	112			
South Eastern	1982-83	35886	30903	28383	2520			
Haldia	1983-84	32593	32082	29761	2321			
Visakhapatnam .	1982-83	59581	60896	58014	2882			
	1983-84	71846	70041	67614	2427			
Western B.G. . .	1979-80	190690	187225	157794	29431			
	1980-81	217218	223264	190860	32404			
	1981-82	198688	232651	184522	48129			
	1982-83	164803	208606	163359	45247			
Western M.G. . .	1979-80	69884	67307	53803	13504			
	1980-81	68282	73419	58360	15059			
	1981-82	60507	77311	55149	22162			
	1982-83	46159	84819	44720	40099			

ANNEXURE—V

(cf. Para 1.5.57)

Detention to wagons at base stations/Railways

Railway	Year	Total wagons	Average hours of detention				Percentage (4+6) to 7
			Arrival to placement	Placement to removal	Removal to despatch	Total	
1	2	3	4	5	6	7	8
Central							
Trombay	1980-81	87578	3.44	16.92	13.71	34.08	50.3
	1981-82	82047	3.14	15.97	16.23	37.34	51.9
	1982-83	76446	4.56	20.96	16.29	41.84	49.8
	1983-84	93299	5.40	21.32	11.86	38.71	44.6
Eastern							
Budge Budge	1982-83	15073	28.0	39.4	63.0	130.4	69.8
	1983-84	13437	20.2	43.1	67.1	104.4	62.2
Northern							
Panki	1982-83	26201	17.5	11.8	16.3	45.6	74.1
	1983	15101	11.3	11.4	15.8	38.5	70.4
Northeast Frontier							
Gauhati	June/July 1980	607	64.0	7.17	69.75	140.92	94.9
	April/May 1981	472	54.75	6.63	79.58	140.96	95.3
	January/February 1983	673	21.67	7.09	90.58	119.34	94.1
	April/May 1983	545	24.83	9.75	77.83	112.41	91.3
Southern							
Irimpanam	1980-81	52713	9.54	8.13	11.7	32.5	65.4
	1981-82	56738	10.1	7.0	8.8	30.0	63.0
	1982-83	60562	9.8	6.5	9.0	30.0	62.7
	1983-84	69911	10.3	6.4	14.8	35.6	70.5
Tondiarpet	1980-81	50273	15.6	6.3	20.9	42.8	85.3
	1981-82	52516	22.8	6.7	22.6	52.1	87.1
	1982-83	59760	25.7	6.1	18.9	50.7	88.0
	1983-84	57037	18.4	7.4	17.8	43.6	83.0
South Eastern							
Haldia	1980-81	34994	8.11	19.78	11.33	39.22	49.6
	1981-82	32241	9.38	24.06	12.44	45.88	47.6
	1982-83	27935	11.58	23.76	13.31	48.65	51.2
	1983-84	28877	14.13	25.73	14.13	53.99	52.3
Western							
Koyali	1981	11176	5.8	15.0	11.0	39.8	42.2
	1982	10210	5.8	10.4	22.1	38.3	72.8
	1983	10888	4.6	10.9	23.7	39.2	72.2
North Eastern (MG)							
Barauni	1982	3398	40.1	7.8	52.75	100.65	92.2
	1983	3476	57.94	8.8	44.87	111.61	92.1

ANNEXURE VI

(c.f. Para 2.2.8)

Statement comparing the actual number of goods trains together with trailing loads

Figures of trailing load, actually moving on the section during the immediately 3 years period before the opening of the new third ghat line and during the first year after opening of the line, are shown below :—

Trailing load and number of goods train run.

Year	With one banking loco			With two banking locos		Total No. of goods trains
	Load upto 1100 tonnes	Load between 1100 & 1250 tonnes	Load between 1250 & 1400 tonnes	Load between 1400 & 1500 tonnes	Load between 1500 & 1600 tonnes	
1	2	3	4	5	6	7
Before the opening of the third line						
1979-80	1319	429	1181	426	1225	4580
1980-81	1047	331	1253	326	1449	4406
1981-82	996	234	1251	371	2144	4996
			3766			
After the opening of the third line						
1982-83	883	202	968	325	987	3365
				2280		
1983-84 (April 1983 to September 1983)	449	109	718	77	412	1765 (for 6 months)

ANNEXURE VII

[cf. Para 2.4.5 (i)]

Outstandings against other parties/Government Departments.

Sl. No.	Name of the project	Balance due	Date of completion, from which outstanding
1	2	3	4
1.	Roadover bridge on outer Ring Road No. 26 between SSB and Nangloi .	6,87,232	28th February 1982
2.	Foot over bridge at Muradnagar (Defence Department)	1,49,615	June 1983
3.	K.V.R. Project Beas Dam Authority	4,08,680	15th October 1976
4.	Construction of Road over bridge at Millerganj, Ludhiana . . .	11,06,311	15th December 1974
		Rs. 23,51,838	

ANNEXURE VIII

[cf. Para 2.4.5(ii)]

Sl. No.	Name of the project	Period	Amount due
1	2	3	4
			Rs.
1.	Badarpur Thermal Power House siding at TKD-Phase II	3/79 to 12/83	10,49,610
2.	Construction of RUB-M. Avenue at Vinay Marg	3/77 to 12/83	13,70,971
3.	Providing diesel shed for WDM4 at NFL premises	12/79 to 12/83	92,267
4.	Badarpur Power House siding at TKD Phase I	1-4-71 to 31-12-83	27,35,087
5.	Road over-bridge at Rai-ka-bagh	17-6-77 to 31-12-83	4,48,057
6.	Thermal siding to additional facilities in the power station at ASAN Near Panipat	1/78 to 12/83	3,07,074
7.	N.F.L. siding at Panipat	9/79 to 12/83	32,246
8.	ROB at Jail Road	6-11-82 to 12/83	9,09,369
9.	ROB at School Lane	4-11-82 to 12/83	6,64,650
10.	ROB at Sewa Nagar	14-8-82 to 12/83	14,845
11.	Addl. facilities (MG) for Defence authorities at Bhatinda—Estimate No. 39/76-77	1-12-77 to 31-12-83	
12.	Phusmandi Yard Phase II	29-8-80 to 31-12-83	11,02,103
13.	Ammunition Depot at Phusmandi Phase I	28-8-82 to 31-12-83	
			87,46,279

ANNEXURE IX

[c.f. Para 2.5.3(c)]

Garhara Transhipment

Year	Overall detention per wagon (in hours)	
	B.G.	M.G.
1978-79	42.9	15.5
1979-80	51.8	15.4
1980-81	51.5	11.5
1981-82	46.7	15.8
1982-83	42.2	15.2

ANNEXURE X

(c.f. Para 2.6.7)

Annexure showing increase in earning during the years from 1973-74 *to* 1983-84 *as per forecast in traffic Survey Report* 1970

Year		Anticipated Credits
1st Year (1973-74)		Rs. 1.16 crores.
6th year (1978-79)		Rs. 1.32 crores.
11th year (1983-84)		Rs. 1.46 crores.
Period		Total anticipated credits during 5 years
1973-74 to 1977-78	5 × Rs. 1.16	Rs. 5.80 crores
1978-79 to 1982-83	5 × Rs. 1.32	Rs. 6.60 crores.
1983-84	1 × Rs. 1.46	Rs. 1.46 crores.
Total anticipated in 11 years		Rs. 13.86 crores
Less existing earning during 11 years on the basis of net earning as per base year 1968-69		.89 × 11 = Rs. 9.79 crores Net increase Rs. 4.07 crores in 11 years.

ANNEXURE XI

(cf. Para 3.3)

Year	Installed capacity		Actual production		Percentage of under-utilisation of installed capacity		Share of over-heads per loco		Total unproductive over heads burden	
	Diesel	Electric	Diesel	Electric	Diesel	Electric	Diesel (In lakhs of Rs.)	Electric	Diesel (in lakhs of Rs.)	Electric
1	2	3	4	5	6	7	8	9	10	11
1977-78 . . .	50	72	31	59	38	18	108.00	398.00	41.35	71.64
1978-79 . . .	50	72	28	56	44	22.2	108.92	397.17	47.92	87.51
1979-80 . . .	50	72	39	51	22	29	154.83	385.08	34.06	111.88
1980-81 . . .	50	72	37	69	26	4	164.44	640.83	42.75	27.92
1981-82 . . .	50	72	32	60	36	16.67	210.08	678.35	75.63	113.08
1982-83 . . .	50	72	32	50	36	30.56	211.85	614.00	76.24	187.64
1983-84 . . .	50	72	26	60	48	16.66	N.A.	N.A.	N.A.	N.A.
									317.95	599.67

ANNEXURE—XII

(c.f. Para 3.13)

Year	Total-outturn	Total diesel and electric loco castings (in tonnes)	Percentage of castings to total outturn	Actual consumption of			Total consumption of sand (New Silica and reclaimed) (in tonnes)
				Silica & sand		Reclaimed sand (in tonnes)	
				Total consumption	Per Tonne of castings		
1	2	3	4	5	6	7	8
1973-74	3,652	3,027	82.8	5,433	1.49	17,102	22,535
1974-75	3,910	2,768	70.7	6,225	1.59	6,242	12,467
1975-76	5,461	3,583	65.6	7,601	1.39	9,243	16,844
1976-77	5,835	3,377	57.9	8,310	1.42	12,809	21,119
1977-78	5,471	3,356	61.3	8,019	1.47	12,012	20,031
1978-79	5,021	3,332	66.3	6,658	1.33	13,178	19,836
1979-80	4,697	3,776	80.4	9,442	2.01	15,048	24,490
1980-81	4,626	3,920	84.9	10,996	2.38	9,609	20,605
1981-82	3,620	2,801	77.4	9,223	2.55	8,775	17,998
1982-83	4,161	2,984	71.7	14,777	3.55	1,593	16,370
	17,104			44,438		35,025	
	46,454						1,92,295

(1) Requirement of silica sand @ 1.89 tonne per tonne of castings on total outturn for 4 years 1979-80 to 1982-83 . . . . . 32,327 t

(2) Actual consumption of silica sand (Col. 5 above) for 4 years 1979-80 to 1982-83 . . 44,438 t.

(3) Excess consumption (2)—(1) . . . . . 12,111 t

(4) Cost of consumption @ Rs. 171/- per t . . . . . Rs. 20,70,981

(5) Requirement of total sand @ 2.6 t per tonne of casting on total outturn (46,454 t) for 10 years 1973-74 to 1982-83 . . . . . 1,20,780 t.

(6) Actual consumption against the requirement (Col. 8) . . . . . 1,92,295 t.

(7) Excess consumption of total sand (6)—(5) . . . . . 71,515 t.

(7A) Cost of consumption of total sand @ Rs. 171/- per t. . . . . Rs. 1,22,29,065

(8) Excess consumption of Bentonite on (7) above @ 84 kg. per 1400 kg. of sand and the cost @ Rs. 467/t for 10 years from 1973-74 to 1982-83.

$\frac{71515000}{1400} \times \frac{84}{1}$ i.e. 4291 t Cost 4291 × Rs. 467 . . . . . Rs. 20,03,897

(9) Excess consumption of Dextrine on (7) above@ 25 kg. per 1400 kg. of sand and the cost @ Rs. 4443/t for 10 years (1973-74 to 1982-83)

$\frac{71515000}{1400} \times 25$ i.e. 1277 t Cost 1277 × Rs. 4443 . . . . . Rs. 56,73,711

(10) Total extra cost due to excess consumption of (8)+(9) Bentonite and Dextrine during 10 years . . . . . Rs. 76,77,608

(11) Total extra cost due to excess consumption of silica sand and binding material (7.A) +(10) . . . . . Rs. 1,99,06,673 i.e. 1.99 crores.

ANNEXURE—XIII

(c.f. Para 3.29)

(a) Loco Shops

Name of Item	Operation No.	Old time (hours)				Revised time (hours)			
		Effective from	Preparatory allowance	Allowed time	Quantity	Effective from	Preparatory allowance	Allowed time	Quantity
		(a)	(b)	(c)	(d)	(a)	(b)	(c)	(d)
Air Duck Assembly . . .	1	30-8-69	0.33	03.00	2	4-11-79	..	025.00	2
Air Duck Assembly . . .	2		0.33	02.00	2	4-11-79	01.00	014.70	1
Adopter Plate Assembly for Blower Motor	8	3-5-80	..	18.00	2	23-6-81	..	012.50	1
Exhausted Bend Assembly . .	1	4-10-78	..	09.00	1	12-8-80	..	085.00	1
Torque Erection Arm . .	10	..	00.67	02.67	1	..	00.67	025.50	1

(b) Steel Foundry

Name of Item	Old Allowed Time (hours)				Present Allowed Time (hours)			
	Effective from	Core	Moulding	Fettling	Effective from	Core	Moulding	Fettling
		(a)	(b)	(c)		(a)	(b)	(c)
Arm Sheeve	1969	4.20	4.50	9.00	1979(a&c) 1978(b)	5.50	5.50	11.08
Arm head	1976(a) 1969(b) 1970(c)	4.10	3.50	6.20	1981(a) 1978(b&c)	5.60	5.50	10.61
Side Frame	1967	8.35	13.32	..	1975	11.00	18.00	..
Wheel Centre	1966	..	17.00	19.03	1974(b) 1979(c)	..	22.00	26.50
Hind Dray	1966	50.00	52.00	..	1976	60.00	60.00	..
Coco Bogie	1973(a&c) 1969(b)	305.00	320.00	585.00	1978(a) 1974(b) 1980(c)	349.50	345.00	975.00

(c) Work Study Cell/Steel Foundry

Name of item	Allowed time as computed (hours)	Moulder's approach (hours)	Allowed time (hours) fixed w.e.f.
1	2	3	4 5
Driving Gear	24.00	72.00	90.00 1-1-1982
Spur Gear Half Round	18.00	30.00	36.00 March 1982

MGIPRRND—S/20 C&AG/84—TSS-II—13-4-85—2125.

ERRATA

Page	Column	Line	For	Read
1	—	4 from bottom	Suspense and Miscellaneous	Suspense and Miscellaneous,
6	Table	9 from bottom	Revenu	Revenue
6	Table	4 from bottom	316.40 (indistinct figure)	316.40
6	Table	3 from bottom	128	28
8	1	Col. 4, 21 from bottom	rores),	crores),
8	1	1 from bottom	non-finalisa	non-finalisa-
11	Table-Col. 4 heading	11 from bottom	share	share)
11	2	4	Kerala	Kerala,
15	Table-Col. 5	5 from bottom	Project, Director	Project Director
21	2	7	(May 1984),	(May 1984)
22	1	12	rained	trained
27	1	28	Rs. 0.75 lakhs.	Rs. 0.75 lakh.
29	2	Table-Col. 2 heading	(Budget-RE including	Budget-RE (including
30	1	11	Ralasthan	Rajasthan
32	1	14	substaintial	substantial
34	2	4 from bottom	Empolyment	Employment
35	Table Col. 1	14 from bottom	—2	(2
35	Table Col. 1	4 from bottom	block	blocks
35	Table Col. 1	1 from bottom	Aprii	April
35	Table Col. 2	3 from bottom	(as per block figures	(as per block figures)
36	Col. 1	18 from bottom	26.75 lakhs.	26.75 lakhs,
37	2	23 from bottom	Rs. 36.43 crores,	Rs. 36.43 crores and
37	Table-Col. 2 heading	6 from bottom	Teritories	Territories
38	1	14	ctse	case
38	Col. 2	14	Orissa	Orissa,
42	1	17	Panchayats	Panchayats,
42	2	19	acquintances	acqu .intances
43	1	2	acquintances,	acquaintances,
44	1	Last line	83-84	1983-84
46	2	7	irregulary	irregularly
52	1	2 from bottom	scheme :	scheme;
54	1	27	1975—84	1975—84,
54	2	20	to audit	under :—
55	Table	under column 1982-83	Achivements	Achievements
55	Table	-do-	Pereentage	Percentage
66	Table	3	S.1	S1
66	Table	8	Utensils	2. Utensils
66	Table	11	Guide	3. Guide
66	Table	11	O e	One
66	2	1	Anganwadis/	Angan-wadis/
66	Table-Col. 5	29	504 anganwdis	504 anganwadis
67	1	6 from bottom	Ministry	The Ministry
67	2-Table	6 from bottom	filtees	filters
68	1-Table	21	artiecls	articles
69	1	15	covring	covering
69	2	20	paragphs	paragraphs
71	1	5 from bottom	women	woman
71	2	2	Nicobr	Nicobar
72	1	16	either by retained	be retained
74	1	last line	CDPO's	CDPOs'
75	Annexure-I	Col. 7 under 1980—84	256.56	206.56
75		4 from bottom	Reports	Report
80	Annexure-VI	Col. 3 against S. No. 24	3.88	0.88
86	1	17	R. 1.19 lakhs	Rs. 1.19 lakhs

Page	Column	Line	For	Read
88	1	25	173	178
88	2	18	Andrra Pradesh	Andhra Pradesh
90	Annexure-I	7 from bottom	Kovilapatti	Kavilpatti
93	1	18	re iterated	reiterated
94	Below the table	Foot-note(ii)	intelligence	Inte lligence
97	1	5 from bottom	—Rs. 10.37 lakhs	Rs. 10.37 lakhs
98	2	11 from bottom	, although	. Although
100	1	21 from bottom	reduded	reduced
100	2	7	Council	Council,
102	2	22 from bottom	reguiarisations	regularisation
102	2	19 from bottom	(Belgrade	(Belgrade)
102	2	18 from bottom	per payment of Rs. 4.52 lakhs)	over payment of Rs. 4.52 lakhs
102	2	14 from bottom	emoluments	emoluments in
103	1	4	intimatio	intimation
103	1	15 from bottom	accomulation	accumulation
103	2	20	revelant	relevant
103	2	13 from bottom	inerest	interest
105	1-Table	8 from bottom	RS	as
105	2	23	If	It
109	1	2	was	was maintained
109	1	17	text check	test check
111	2	10	Superintendent,	Superintendent.
111	2	16	machiney	machinery
113	Last Table	8 from bottom	more	More
115	1	16	Department	Departmental
115	1	17	leved	levied
115	2	19	back	book
122	1	27	vilages	villages
122	1	7 from bottom	1130	1130,
127	1	14 from bottom	non-lying	non-laying
130	2	19	material	materials
131	1	14	29.9.3	29.8.3
131	2	14 from bottom	stabilizers	stabilisers
133	1	3 from bottom	lakhs,	lakhs
133	2	10 from bottom	Manpur	Manipur
134	1	23 from bottom	Mizoram	Mizoram,
134	1	10 from bottom	600 crore	600 crores
134	1	last line	lakhs villages	lakh villages
135	1	4	Sates	States
135	2	16	States	State
137	1	17	arreas	arrears
138	1	8 from bottom	ruction	truction
138	2	14	stap	stop
138	2	30	addition	additional
139	1	10 from bottom	railings	railings/
140	2	2	round	found
142	2	2	requirement :	requirement ;
145	1	14		delete 36.1
145	1	26	apprehened	apprehended
145	2	18	he	the
145	2	3 from bottom	of 9	of
147	1	25	adresses	addresses
148	2	23	8,12,500	3,12,500
151	1	1	Aprii	April
151	1	6	risk of	risk and
154	1	18	sking	skiing
156	1	16 from bottom	Comtproller	Comptroller
156	2	19 from bottom	—44.84	144.84
158	2	4 from bottom	tor	ctor
160	2	27	tonne	tonnes
160	2	2 from bottom	intructuous	infructuous
161	2	5 from bottom	(Rupees in lakhs	(Rupees in lakhs)
162	1	25	Tibia	Tibbia

Page	Column	Line	For	Read
162	2	2—3	student-teacher	teacher-student
163	2	4 from bottom	23.47	37.47
163	2	5	Productive	Productivity
164	2	17	Total A B	Total A+B
165	1	3	1983-84.	1983-84,
167	2	11	Co-peratives	Co-operatives
168	2	27	Commision	Commission
171	—		Delete Chapter VI	
174	2	9	ing,	ing
176	2	2 from bottom	awated	awaited
181	Table-Col. 11 (ii)	17	and.	and
181	-do-	20	the Accounts,	the Accounts.
182	1	15 from bottom	130	139
182	2	17	fixed	fixed,
183	2	5	March 1983.	March 1983 :—
185	1	2 from bottom	disel	diesel
185	2	21	liter	litre
186	2	2	travelling	travelling.
188	2	7 from bottom	labour hours utilised etc. The Consultants	or achievable capacity of the Mint has not
188	2	last line	capacity or achievable capacity of the Mint has not	capacity, labour hours utilised etc. The Consultants
193	2	9 from bottom	Lave	have
194	Table	9 from bottom	cons	coins
196	1	20-21	obsolate	obsolete

PAG. 41. 83-84
2125—1985 (DSK III)

PRINTED BY THE MANAGER, GOVERNMENT OF INDIA PRESS, RING ROAD, NEW DELHI-110064
AND PUBLISHED BY THE CONTROLLER OF PUBLICATIONS, DELHI-110054
1985