ADVANCE REPORT OF THE

COMPTROLLER AND AUDITOR GENERAL OF INDIA

FOR

THE YEAR 1980-81

UNION GOVERNMENT (RAILWAYS)

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1	3	1 of footnote	traffc	traffic
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3	31	24	(23)	(21)
4	32	9	cars	car
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7	40	2 of para 4.4	holding	holdings
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14	52	1 of para 4.30	locomotive	locomotives
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17	55	table	(a) Holdings (on lines)	(a) Holdings (on line)
18	55	1 of para 4.38(ii)	31-2-81	31st March 1981
19	55	2 of para 4.38(ii)	108 overaged locomotives	10 overaged locomotives
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21	57	5 of sub para (e)	locomotives days	locomotive days
22	58	table Row-: Northern Railway (Mughalsarai) Column Actual consumption goods	2.91 to 5.–	2.91 to 5.14
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26	64	2 of para (3)(c)	1979-80	1980-81
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29	71	15	(c) North Eastern Railway	(e) North Eastern Railway
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32	79, 80 & 83	29, 3 & last of footnote	1.7	2.5
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36	89	6 from bottom	government	Government
37	94	6 from top	for supplies	for supplies outside
38	98	14	Warks	Works
39	101	9	Rs. 1,28	Rs. 1.28
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48	167	10 of para 19.8	receiption	reception
49	169	3 of para 19.11.2	fraquently	frequently
50	170	10 of para 19.12.2	4 cases	41 cases
51	173	11 of summing up para (viii)	refered	referred
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53	179	1 of footnote	Efficency	Efficiency
54	179	5 of footnote	foundatin	foundation
55	184	3 of sub para (ii)	therewith	these with
56	192	2 of heading	[cf. Para 1.9(iv)]	[cf Para 1.8(iv)]
57	197	5 column 4	1980-8	1980-81
58	201	last line column 9	165	166
59	203	last line column 2	Virmgam	Viramgam
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64	207	Eastern Railway (Passenger) column 5 Row : 1979-80	11.06	11.6
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PREFATORY REMARKS

This Report has been prepared pending submission of the Appropriation Accounts of the Union Government (Railways) for the year 1980-81. The Appropriation Accounts of the Union Government (Railways) for the year 1980-81 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 audit of the financial transactions of the Railways. The matters reported are among those which came to notice in the course of test audit during the year 1980-81 as well as those which had come to notice in earlier years but could not be dealt with in previous Reports, matters relating to the period subsequent to 1980-81 have also been included, wherever considered necessary. These include, among others, Coaching services, Operation of diesel rail cars, Utilisation of locomotives, Utilisation of weigh-bridges, Implementation of ten hour duty rule for running staff, Centralised purchase of stores, Vijayawada-Gudur Railway electrification, Construction of a metre gauge line from Dabla to Singhana and Earthwork contracts.

3. The points brought out in this Report are not intended to convey or to be understood as conveying any general reflection on financial administration by the Ministry of Railways (Railway Board).

CHAPTER I

PASSENGER AND OTHER SERVICES

1. Coaching Services

I. Introduction

1.1 The Indian Railways earned Rs. 943.18 crores in 1980-81 from passenger (Rs. 827.47 crores) and other coaching (Rs. 115.71 crores) traffic*. 3613 million (2919-BG, 692-MG and 2-NG) passengers were carried during 1980-81, performing 2,08,558 (1,63,881-BG, 43,262-MG** and 1,415-NG**) million passenger kilometres of journeys.

1.2 Details of the passenger traffic carried as also the holding of passenger coaches in some of the years since 1969-70 are given below :

	1969-70	1973-74	1974-75	1978-79	1980-81
1. Passenger km (in millions) BG					
Non-suburban	59,876	74,849	69,827	1,08,050	1,24,895
Suburban	21,163	26,684	25,737	41,156	38,896
Total	81,039	1,01,533	95,564	1,49,206	1,63,791
2. Holding of coaches BG					
(i) Non-suburban passenger coaches	13,494	15,194	14,862	15,813	16,417
(ii) Electric Multiple Units (EMUs) for suburban services	1,540	1,743	1,856	2,233	2,343
Total	15,034	16,937	16,718	18,046	18,760

*Luggage, parcel and other traffic.

**This review mainly covers the position on BG which carries over 79 percent of the passenger traffic.

II. Position of traffic vis-a-vis coaches

1.3 (a) *Upto* 1973-74

(i) During 1969—74, the growth in non-suburban passenger traffic (in terms of passenger kms) was about 25 per cent on BG (5.2 per cent on MG) as against the anticipated increase of 23.06 per cent. On the other hand, as against the Fourth Plan provision for increase of 14.1 per cent in the holding of passenger coaches by procurement from the three indigenous coach builders viz. Integral Coach Factory (ICF), Bharat Earth Movers (BEML) and Jessop and Company, the net increase was 12.6 per cent on BG (2.56 per cent on MG), resulting in the passenger traffic outstripping the availability of coaches for catering to it.

(ii) During 1969—74, the increase in suburban passenger traffic was 26 per cent as against the anticipated increase of 25 per cent, while the procurement of EMUs was 489 units (against the Plan provision of 841 units), the net increase being 203 units i.e. 13.2 per cent.

(b) *From* 1974-75

(i) The Ministry of Railways (Railway Board) had assumed an annual growth rate of 4 and 5 per cent in non-suburban and suburban traffic during the Fifth Plan period (1974—79) and provided for procurement of 6,500 coaches and 1,050 EMUs including replacements, the number of overaged coaches and EMUs as on 31-3-1974 being 4,173* and 41 respectively.

(ii) The Railway Board had informed the Railway Convention Committee (RCC) 1971 and 1973 that the following measures would be taken to meet the traffic requirements.

(1) Capacity in ICF would be fully utilised for production of passenger coaches. Use of saloons and inspection carriages (where not used intensively) for passenger traffic would also be considered.

*As per overaged statements with the Railway Board.

(2) The growing requirement of lower class sleeper coaches and the need to relieve overcrowding in lower class would be kept in view while planning for additional coaches.

(3) Coaches with higher capacity such as double decker coaches, chair cars for short distances, AC two tier sleeper coaches with more berths etc. would be produced.

(4) Wherever the utilisation is not adequate, the existing AC (I class) coaches would be gradually replaced by extra sleeper coaches.

(5) Nine coach rakes would be provided in the busy suburban sections of Bombay, Calcutta and Madras.

(6) Terminal capacities in the Metropolitan Centres would be developed, trains with diesel and electric traction would be run, etc.

(7) Other measures like improvement in reservation arrangements including provision of more booking windows, installation of self ticket printing machines at busy stations etc. and intensive ticket checking to minimise ticketless travel, would also be taken.

However, the position of coaches vis-a-vis the requirements of traffic worsened after 1974-75 as indicated below :

(c) (1) *Passenger traffic.*

Non-suburban

The non-suburban traffic on the BG increased by 78.8 per cent during 1974-75 to 1980-81.* Though 7,340 coaches were procured during this period against the Plan provision of 9,042

*This increase comprises mainly long distance (Mail/Express) traffic 93.9 percent; and short distance ordinary passenger traffic 62.6 percent.

coaches, the net addition to the existing holding of coaches was only 10.5 per cent due to more condemnation of overaged stock.

Suburban

The suburban traffic in Bombay, Calcutta and Madras increased by 53.1 per cent during 1974-75 to 1980-81. With the procurement during this period of 802 EMUs only against the Plan provision of 1,388, the net addition to the stock was 26 per cent.

As a result, 2,505 overaged coaches and 99 overaged EMUs were in service as at the end of 1980-81.

(2) *Luggage and parcel traffic*

The luggage traffic of the Railways was also affected, due largely to acute shortage of luggage vans (SLR/TLR type coaches, brake vans, etc.). While the number of passenger coaches increased during the period 1974—81 from 14,862 to 16,417 (*i.e.* by 10.5 per cent) and the non-suburban passenger traffic by 78.8 per cent, the holding of luggage-cum-brake vans and other coaching vehicles for similar use increased from 1953 to 1991 only (*i.e.* by 1.9 per cent).

III. Factors affecting availability of coaches

1.4 A review in audit of the factors responsible for the above position revealed the following :

(i) *Utilisation of coach production capacity*

The production of coaches, as approved by the Railway Board, is planned on the ICF, BEML and Jessop. The workshops of the zonal Railways also produce coaches but these are mainly for departmental purposes, such as crew rest vans, inspection coaches, etc.

7,340 coaches (all types) were produced by all the above units during the seven year period 1974—81 ; of these, the number of coaches produced in the first four years (1974 to 1978) and that in the balance period were as under :

Name of unit	Installed capacity per year	Production of coaches 1974—78 (Average)	1978—81 (Average)	Total	Capacity utilisation percentage 1974—78	1978—81
ICF	750	2286(572)	2084(695)	4370	76	93
BEML	400	864(216)	649(216)	1513	54	54
Jessop & Co.	400 (including EMUs)	546(136)	88(29)	634	34	7
Railway workshops	100	513(128)	310(103)	823	128	103
Total	1650	4209	3131	7340		

Thus, during the period upto 1977-78 the capacity utilisation was only 76 per cent in the ICF (which produces the bulk of the passenger coaches for traffic) and in the case of BEML and Jessop it was only 54 and 34 per cent respectively. Thereafter, while the utilisation in ICF improved to 93 per cent, there was no improvement in the utilisation of capacity in BEML and in Jessop, it actually fell to 7 per cent.

(ii) *ICF*

(a) The main reason for the low capacity utilisation in ICF was stated to be lack of funds allotted for production of coaches. It was, however, seen that the budget allotment under Rolling Stock (Carriages) had been revised downward at the revised estimate stage in 1974-75 and again in 1977-78 to 1979-80, and the balance diverted for loco (besides wagon) procurement.

(b) The actual production of coaches in the ICF was as under :

Year	Number built		Total cost of manufacture	
	Lower class II all type	Upper class AC, 1st, AC II tier etc.	Lower	Upper
			(In crores of rupees)	
1974—78	1296	589	59.02	34.35
1978—81	1605	133	85.16	18.03
Total	2901	722	144.18	52.38

An analysis of the passenger traffic and earnings therefrom during 1974—81 indicated that 99 per cent of the passengers travelled in the lower class while only one per cent travelled in the upper classes. However, 27 per cent of the amount spent by the ICF in manufacture of passenger coaches was for production of upper class coaches.

(c) The ICF produced as many as 49 AC full and 7 AC partial coaches at a cost of Rs. 5.71 crores upto 1980-81 while 29 AC full coaches were under production (November 1981) (cost : Rs. 3.83 crores). This was despite the fact that the occupancy percentage of AC coaches was poor and the earnings well below their repair and maintenance cost, *vide* details given in Annexure II.

Apparently, in planning the production of AC coaches, the Railway Board had not kept in view the needs of the traffic and the recommendation of the RCC, 1973 regarding the need for taking into account the requirements of lower class accommodation.

(d) During the above period, the capacity in ICF was partly diverted to production of pantry cars (85 produced during 1974—81 and a further 16 under production in 1981-82), besides execution of export orders (147 coaches produced for export during 1974—81 and a further 32 under production in 1981-82). While the existing dining cars were being replaced

by new pantry cars since 1974 to make available more accommodation for passengers, there was yet (December 1981) no firm decision to convert the released surplus dining cars into pantry cars or passenger coaches, either in the Railway workshops or in ICF, with the result that as many as 41 dining cars were lying surplus (March 1981) to the requirement with the Railways at a time when passenger coaches were in short supply. This number is likely to go up, as and when the pantry cars under manufacture at ICF are put into service.

(iii) *BEML and Jessop*

Paucity of funds, as also of wheelsets and other free supply items (supplied by the Railway Board) affected the production of coaches in the BEML (production during 1980-81 being only 176 against 270 coaches programmed). While curtailment of funds and delay in finalisation of prices for EMUs retarded their production by Jessop during 1969—73 (the issue was settled only by 1976), later the production was affected by labour trouble etc. for some time and recommenced from 1979-80 but the actual production during 1980-81 was only 26 against 118 coaches programmed. As on 1-4-1981, 848 coaches and 915 EMUs were outstanding from BEML (from May 1977) and Jessop (from May 1978) respectively.

(iv) *Workshops*

During 1974-75 to 1978-79, the Railway workshops exceeded their installed capacity of 500 coaches by manufacturing 656 coaches mainly for departmental services (*e.g.* relief vans, stores delivery vans, inspection carriages, crew rest vans etc.). The production of other coaching vehicles, such as SLRs, luggage brake vans, parcel vans etc., required for parcel and luggage traffic, however, accounted for only 20 per cent of the capacity.

In February 1973, the Railway Board had instructed the zonal Railways to rehabilitate replaced coaches in Railway workshops and to commission them for movement of perishable traffic. It was observed in test check that while the South Central Railway

Administration had identified 60 such coaches as fit for conversion, the actual number converted between September 1973 and September 1975 was only 25 (cost : Rs. 5.50 lakhs). Even of these, 9 were condemned between July 1975 and April 1976, and 15 were either stabled or marked for POH without being used for long periods ; by December 1980 these also had been condemned.

Incidentally, the luggage space provided in the first class coaches was found to be poorly utilised (being unguarded). This space was, therefore, ordered (August 1972) by the Railway Board to be converted into two first class berths per coach in Railway workshops. This scheme has, however, made very poor progress, only 16 out of 387 first class (BG) coaches having been converted so far (November 1981). (cf Para 3).

IV. **Extent of ineffectives**

1.5 The assessment of requirement of coaches made by the Railway Board takes into account the usage norms (vehicle km per vehicle day) achieved in recent years. Allowance is also made for ineffectives, to cover coaches under repair, periodical overhaul (POH), detention at destination stations, etc. at 14 per cent* of the coaching stock and an additional 12.5 per cent as spares (for special trains or as standby to coaches in the rakes, etc.). A review in audit of the position regarding ineffectives showed the following :

As against the target norm for ineffectives *viz.* 14 per cent, the actuals (as per statistical records compiled by the Railways) for all passenger coaches (BG) were as under :

*The allowance of 14 percent for ineffectives comprise :

1. time spent in workshop for POH	6.5 per cent
2. time spent in workshop for non-POH repairs	1.0 per cent
3. time spent in sick lines and depots :	
(a) mechanical repairs	2.0 per cent
(b) electrical repairs	2.0 per cent
4. time spent being stabled in yard, sick lines, etc.	2.5 per cent
Total	14.00 percent

Year	POH in workshops	Non-POH repairs in workshops	Sickline, etc.	Stabled in yards	Total
1974-75	8.42	2.86	2.97	1.73	15.98
1976-77	7.16	2.45	2.53	0.60	12.74
1979-80	7.41	3.06	2.74	0.69	13.90
1980-81	6.89	2.98	3.64	0.97	14.48

It may be seen that the extent of ineffectives has gone up in recent years. Further the above data do not include the coaches remaining under repair for less than 24 hours. A census taken by the Railway Administrations in March 1981 (with reference to the position of all passenger coaches including coaches found defective at the departure time of trains) showed that the actual number of passenger coaches under repairs was much higher than that shown above, being between 19.9 and 22.5 per cent. It was particularly heavy in respect of AC (all types 22.8 to 32.6 per cent), First class (23.9 per cent), Second class general (20.5 per cent), Second class two tier (22.2 per cent) and SLR coaches (19.5 per cent)*. It was only in the case of Second class three tier coaches that the ineffectives were 13.9 per cent. Thus, the coaches remained idle for longer periods than what was shown in the statistical records and consequently, the percentage of actual ineffectives was much more than the prescribed target norm of 14 per cent. Correspondingly, the availability of spare coaches (target norm 12.5 per cent) also got reduced, affecting their availability for traffic.

1.6 A major factor affecting the availability of coaches was the inadequate POH capacity in Railway workshops, inadequate facilities for routine repairs in sheds and sick lines, for washing of coaches etc. at major terminal stations, etc.

(a) *Workshops*

The overall shortage in the POH capacity was assessed (in 1979) at about 1,500 BG coaches per year. Major works to

*A census conducted in March 1975 by the Railway Board had also disclosed similar high percentage of ineffectives *viz.* AC—(36 to 42.6), First class—(26.7), Second class general—(22.5) and SLR—(24.2).

augment the repair facilities, including installation of diesel generating sets to make up power shortage, etc. were being considered and included in the Works programmes from 1977-78 but are yet to be completed (1981-82). Meanwhile, the average monthly POH lagged behind the capacity (estimated at 2,104 coaches) resulting in the percentage of coaches overdue for POH increasing from 8.8 in 1973-74 to 16.6 in 1980-81. On an average for all Railways, 578 coaches were stabled daily during 1980-81 awaiting workshop repairs, of which as many as 150 were on Eastern Railway and 187 on South Eastern Railway.

Further, on the Central Railway, 33 coaches suffered transit detention during 1979-80 of 10 to 35 days (per coach) between base station and workshop, besides waiting period of 55 to 120 days (per coach) in workshop premises before entering POH sheds. On the Western Railway (Parel Mechanical Workshop), the average time taken for POH during 1979-80 was between 21.9 and 22.9 days in respect of passenger and other than passenger vehicles respectively against the target of 18 days. Increase in repair days in recent years especially in 1979-80, was, *inter alia*, due to the time required for corrosion repairs in steel bodied coaches, which became acute in 1979-80 on the Central, Western, South Central and Northeast Frontier Railways, mainly owing to (as seen from workshop records) inadequate observance of preventive maintenance instructions/non-completion of corrosion repairs prescribed by the Research, Designs and Standards Organisation (RDSO).

(b) *Repair sheds/maintenance depots*

A test check of the records of 5 maintenance depots on Western Railway showed that the average time taken for maintenance, repairs, etc. per coach was between 16 to 29 hours as against the target of 12 hours. The contributory factors for excessive detention were non-availability of wheels, L.B. springs, Axle pulleys, etc. arising out of inadequate planning and coordination between the Stores and the Mechanical Departments of the Railway.

Coaches received at the depots on the Central, Eastern, Northern, Western, Southern, South Central and South Eastern Railways for primary maintenance during the years 1978-79 to 1980-81 had been found deficient in fittings, especially electrical items such as bulbs, fans, alternators etc. The loss of fittings from the coaches was Rs. 464.54 lakhs during these years (Details in Annexure III). However, often due to heavy deficiencies and non-availability of the required stores in the depots, these coaches had been detained for long periods ranging from 6 hours to 153 hours*. No data regarding the number of coaches run with deficient fittings were available with the Zonal Railways.

(c) *Repairs to EMU coaches*

The percentage of EMU motor and trailer coaches awaiting repair during 1980-81 was as under :

Year	Central (BG)	Eastern (BG)	South Eastern (BG)	Western (BG)	All Railways (BG)	Southern (MG)
1980-81						
Motor coaches	22.7	22.6	17.2	11.8	18.8	20.5
Trailer coaches	16.6	21.3	16.9	9.39	16.2	9.92

The higher percentage of EMU motor coaches under repair, as compared to the target of 14 per cent, restricted the availablity of rakes, since without them, the trailers could not be put to use. While on an average 13 motor coaches on Central Railway and 8 on Eastern Railway were held as spare or stored in good condition in 1979-80, the corresponding number of trailer coaches held as spare etc. was 47 on Central Railway and 30 on Eastern Railway. There was, however, some improvement in 1980-81 in that the number of motor coaches held as spare etc. was 11 and 4 respectively, while the corresponding number of trailer coaches was 26 and 11 respectively.

*Based on a sample study conducted by audit at sick line at Madras Central on Southern Railway.

A large number of EMU motor coaches remained under repair due to inadequate capacity for rewinding damaged motors, remetalling of bearings of traction motors, etc. To meet this situation, expansion of car shed at Kurla, setting up of a new car shed at Kalwa, construction of traction motor rewinding factory at Nasik etc. on Central Railway and remodelling-*cum*-expansion of car shed at Mahalaxmi on Western Railway, were undertaken commencing from 1972-73, but are still to be completed (November 1981).

Similarly, certain essential works for stabling, repair and maintenance of 9 coach EMU rakes on the Eastern and Southern Railways are still under execution (1981-82). So far (October 1981), nine coaches EMU trains have been standardised only in the Bombay suburban area. In Calcútta and Madras areas, though a policy decision had been taken to implement the scheme in 1974 subject to availability of additional rakes, the EMU trains continue to consist mainly of 8 coaches due to high percentage of motor coaches under repair besides lower rate of materialisation of new EMU coaches on order from ICF/Jessop. So far only 19 nine coach rakes out of a total fleet of 68 rakes have been formed on the Eastern Railway.

V. **Utilisation of passenger coaches**

1.7 (i) Between November 1976 and March 1981, the Railways introduced 79 additional Mail/Express trains, besides augmenting the loads of existing services by attachment of extra coaches, etc. As, however, the overall availability of coaches increased only by 9 per cent, this necessitated withdrawal of coaches from the existing passenger trains (and some times even from Mail/Express trains), resulting in these services being run with lesser number of coaches than usual. The overall composition of passenger trains, more particularly those hauled by steam locos, had consequently to be curtailed owing to paucity of coaches. The curtailment was to the extent of 15 per cent in 1980-81 as compared to 1974-75 even though the number of passengers carried on an average had increased during that period from 555 to 729 per train.

(ii) The Railway-wise position of holding and utilisation of passenger coaches in 1980-81 as compared to that in 1974-75 is shown below :

As on	Central	Eastern	Northern	Northeast Frontier	Southern	South Central	South Eastern	Western	All Railways
					Holding of passenger coaches (BG)				
31-3-75	2036	2743	2885	297	1726	1166	1932	1459	14244
31-3-81	2118	2693	3166	467	2093	1353	2156	1700	15848
					Passengers carried per train				
31-3-75	612	548	608	162	506	494	377	706	555
31-3-81	814	763	759	138	631	680	493	989	729
					Vehicle km per vehicle day				
31-3-75	269	274	213	107	233	230	235	251	243
31-3-81	329	334	256	130	309	332	314	311	314

While the vehicle km per vehicle day varied in keeping with the number of passengers carried on Central, Eastern, Northeast Frontier, South Central, South Eastern and Western Railways, the utilisation of passenger coaches in terms of vehicle km per day improved and was above the all India average only on the Central, Eastern, South Central and South Eastern Railways. The performance on other Railways, especially Northern, Northeast Frontier and Southern Railways was below the level of the all Railway average (314) in 1980-81, showing relatively poor utilisation of coaches. In particular the increase in the holding of passenger coaches was disproportionately more compared to the increase in the number of passengers carried per train on the Northeast Frontier Railway.

(iii) A test check in audit of the rake composition of the train services run on some Railways indicated short running of coaches *vide* instances given below :

On Central Railway, during the months January to May 1981, three express trains* and four passenger** trains were regularly run with lesser number of coaches than the normal composition, resulting in short running of 164 coaches per month on an average.

On the Eastern Railway (May 1981) two important daily express trains (13Up Upper India Express and 11Up Delhi Express) were regularly run with lesser number of coaches than the normal composition, *viz.* by 3 and 1 coach per rake respectively.

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*13Dn/14Up Bombay-Madras Janta Express.
39/Dn/40Up Dadar-Nagpur Express.
81Dn/82Up Bombay-Trivandrum Jayanti Janta Express.

**321 Dn/322 Up Bombay-Pune Daund-Manmad Passenger
323Dn/324Up Bombay-Sur-Siddeswer Express
351Dn/352Up Bombay-Bhusaval Passenger.
353Dn/354 Up Bombay-Bhusaval Passenger.

On the South Central Railway also, 60 passenger trains were run with lesser number of coaches than the normal composition, resulting in short running of 96 coaches per month on an average during November 1979 and April 1980.

On the other hand, on the same Railway, a review of occupation of 25Dn/26Up Kakatiya Express introduced from 2nd April 1977, conducted by the Railway Administration for November 1979 and April 1980, showed that for the first class coaches the occupancy was about 40 per cent between Hyderabad and Kazipet; further, in the second class, out of the available 530 seats, only 15 seats were found occupied between Kazipet and Warrangal.

Despite limited availability of passenger coaches, their deployment on various Railways, especially on unremunerative services, does not seem to have been reviewed on a regular basis with a view to their optimum utilisation.

(iv) During 1980-81, the break up of the cycle of 24 hours of the movement of a passenger coach was as under :

	Hours/ minutes	Per cent
1. Run time in train	8-50*	37
2. Terminal lie over at both ends	8-40**	36
3. POH, sick, idling and spare	6-30***	27

Thus, a coach remained on the move only for 37 per cent of the time in a day, while the 'terminal lie over' was 36 per cent and 'POH', 'sick' and 'idling' (in transit to and from workshop or in sick line) 27 per cent.

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*Computed by dividing vehicle km per day (314 km) by the average speed (35.6 km per hour) of passenger trains all services (1980-81 data).

**A rake generally moves between the terminals without any break-up and undergoes its primary and secondary maintenance at either of the two terminals. The time spent by the rake at the terminals is called 'terminal lie over'.

***Based on repair percentage (14.48) plus authorised spares (12.50); if percentage based on census data of March 1981 is adopted (i.e. 19.11) spare percentage would be correspondingly less than 12.5 (i.e. 7.87).

The terminal lie over (36 per cent or 8—40 hours), would have been higher (42 per cent or 10 hours per day) if the lie over period had been reckoned with reference to the scheduled time of running of trains, especially Mail/Express trains which account for 58 per cent of the passenger coaches. The punctuality of Mail/Express trains had deteriorated from 90 per cent in 1976-77 to 65 per cent in 1979-80 consequent on late running of passenger trains, thereby depressing the actual terminal lie over.*

(v) The availability of coaches for train service was affected not only by inadequate utilisation of the production capacity and the extent of actual ineffectives but also by inadequate facilities for POH and repairs, extent of lie over at terminals, etc.

Some cases of inadequate facilities in sidings for maintenance noticed in audit are mentioned below :

Due to inadequate siding length at Bombay VT (Central Railway) and want of stabling facilities in the carriage and maintenance depot at Mazagaon (near Bombay VT), sick coaches (in the rakes) could not be attended to in time, resulting in detention to coaches and their non-availability to run trains. During January to May 1981, the outgoing and incoming 5Dn Punjab Mail and 4Dn Howrah Mail were run with lesser number of coaches as compared to the normal composition of these trains, the shortfall ranging from 10 to 31 coaches per month. Similar was the position in the case of the seven trains mentioned in para V(iii) and served by these terminals (Mazagaon and Bombay VT).

On the South Central Railway, all broad guage passenger trains terminating at Renigunta were extended to Tirupati on it being connected by a broad gauge line with Renigunta in 1968-69. However, rake maintenance facilities were not

*Similar information regarding punctuality of Mail/Express trains for 1980-81 has not been compiled by the Railway Board (December 1981).

provided at this terminal till August 1978, with the result that the terminating passenger trains were being hauled empty between Tirupati and Renigunta for maintenance, the average cost of haulage being Rs. 3.64 lakhs per annum besides reducing their availability for traffic.

(vi) Since 1977-78, the Railway Board had been considering the possibilities of reducing the 'terminal lie over' period of coaches by changing the rake links so as to minimise infructuous detention to rakes at terminals and maximise their availability for train service. No final decision has, however, yet been taken by the Railway Board (November 1981) despite studies by the Board's Operational Research Cell in this regard. Meanwhile, idling of passenger coaches on account of high 'terminal lie over' continues. A few instances of excessive terminal lie over are given below :

The Central Railway's rake links in respect of 5Dn/6Up Bombay—Firozpur Mail and 11Dn/12Up Dadar—Madras Express showed that two rakes (32 coaches) are being kept idle for more than 24 hours at the terminals, Bombay VT and Dadar.

Three super fast trains, 121Dn/122UP Tamil Nadu Express (tri-weekly), 123Dn/124Up Andhra Pradesh Express (bi-weekly) and 125Dn/126Up K.K. Express (bi-weekly), have 5 rakes with availability period of 840 hours per week. However, the run time for the three trains is around 480 hours only. As a result, especially in the case of the Andhra Pradesh and K.K. Expresses, the rakes remain idle for a period of 32 hours, 54 hours and 73 hours at Secunderabad, Trivandrum and Bangalore respectively.

On South Eastern Railway, even an overlapping full rake has been provided and kept as a standby (October 1981) for the Express train between Bokaro Steel City and Madras (introduced in November 1975). As it is, for the rake actually in

use in the train more than 28 hours are already available for washing, under gear examination, etc.

Similarly, the three rakes (each comprising 10 coaches) of a daily passenger train (229Up/230Dn) between Waltair and Durg (distance 565 kms) (run time 18 hours 25 minutes) remain stabled for 27 hours 55 minutes each at Waltair.

The tri-weekly express train 183Up/184Dn Ranchi Express (with 13 coaches) introduced with effect from May 1980 between Chandigarh and Ranchi, was being hauled empty to Kalka (distance : 24 km) for primary maintenance (i.e. washing, etc.) for want of such facilities at Chandigarh. Later the empty haulage was regularised by extending the run of the train (without adequate traffic justification) to Kalka with effect from 23/25-5-81. (The train leaves Chandigarh for Kalka at 21.15 hours and Kalka for Chandigarh at 3.40 hours.) Further at Kalka, the empty rake is stabled for about 19 hours per round trip. Similarly at Ranchi, the rake is stabled for about 30 hours.

For utilising the rake during the lie over period at Kalka, the Northern Railway Administration had made a proposal (December 1980) that it might be run as a tri-weekly service between Kalka and Hardwar. This, however, is stated to be still (December 1981) under consideration of the Ministry of Railways (Railway Board).

(vii) *Tourist cars, saloons etc.*

As on 1st April 1981, about 405* coaches (294 BG and 111 MG) were being held as tourist cars and saloons but were sparingly used. On the Western Railway, 17 first class and 16 second class tourist cars were utilised as tourist cars etc. to the extent of 5 per cent of the number of days available for their use in

*Includes tourist cars, State saloons and Military cars.

1980-81. During the same period these cars were utilised to the extent of 35 per cent by Railway Officers (besides inspection carriages and saloons provided exclusively for them).

One first class and five second class tourist cars held by Northeast Frontier Railway were used for short trips by private parties for a period of 4 to 20 days only on an average during 1979—81. On the Northern Railway, which holds as many as 32 (27 BG and 5 MG) tourist cars, the average monthly booking during January 1980 to August 1980 was between 0.25 to 7.6 days. The South Central Railway has 7 BG and 6 MG first class and one MG ACC tourist cars but there was practically no demand for them as seen during a test check of 7 tourist cars during January—June 1981, wherein utilisation was found to be 5 per cent by public and 29 per cent by Railway Officers. Similarly, on the Southern Railway, during the two years 1979-80 and 1980-81, its eleven tourist cars were in use for 122—104 days only.

None of these Railway Administrations had (October 1981) considered the possibility of putting these coaches to alternative use in passenger service to relieve shortage of coaches especially for lower class travel.

(viii) *Utilisation of other coaching vehicles*

As already brought out in para (c) (2) under Section II, there was acute shortage of luggage-cum-brake/brake vans (SLRs, LRs). As a result, the capacity for movement of luggage and parcel traffic by regular passenger service got reduced. The Railway Administrations' efforts to despatch such traffic by separate regular parcel service were also affected by inadequate availability of wagons. To meet part of this shortage, other types of coaching vehicles, such as motor vans and four wheeler/eight wheeler wagons had to be used for parcel service.

The holding and utilisation of 'Other coaching vehicles' on the zonal Railways is shown in Annexure IV. It may be seen

therefrom that these vehicles on the Central, Northern, Northeast Frontier and South Central Railways were considerably under-utilised in comparison with those on the other Railways, the utilisation (on these Railways) being just 2 to 5 hours in a vehicle day (i.e. 8 to 20 per cent)*.

A test check of the Central Railway's parcel traffic during the years from 1978-79 showed that owing to acute shortage of parcel vans/wagons made fit for passenger trains, the Railway Administration was not able to clear the parcels offered at road side stations and transport them either by regular passenger service or by scheduled parcel express trains. Only 8 to 10 parcel vans were available as against 15 to be allotted on an average during the period from April 1979 till June 1981. As a result, the tonnage lifted dropped from 4.35 lakhs in 1978-79 to 4.09 lakhs in 1980-81.

A test check of the utilisation of the Railway service vehicles meant for departmental use (e.g. parcel van, inspection carriages etc.) revealed the following :

On the South Eastern Railway, out of 45 stores delivery vans, 4 had not been used at all. A sample survey of 8 stores delivery vans based at Kharagpur Depot during March to May 1981 showed that against the allotted 122 days for movement of these vans, the actual time taken was 227 days indicating lack of control over their movement by the base depot.

On the Northeast Frontier Railway, 3 parcel vans and 2 delivery vans, sent in October and December 1980 to Lumding and Tinsukia Divisions respectively from New Jalpaiguri for delivery of uniforms etc., had not returned to the base depot till the date of review (31-5-81) even though the programmed journey was for 70 days only.

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*Based on speed of passenger/parcel express trains of 26.0/26.7 km per hour during 1980-81.

VI. Passenger reservation arrangements, etc.

1.8 Some aspects of reservation arrangements affecting directly or indirectly, Railway revenues, noticed in audit, are mentioned below :

(i) As per extant instructions, passengers who can not get confirmed reservations are to be waitlisted and allotted reservation according to their priority as and when vacancies occur owing to cancellations, etc. The number of waitlisted passengers who surrendered tickets at the last moment was high as revealed in a test check by Audit (examples given in Annexure V).

(ii) A chart with the names of passengers, both with reserved accommodation and waitlisted, is handed over to the train officials at the starting station. These officials are required to ascertain the vacant berths/seats due to last minute cancellations, etc., allot these to persons in the waiting list and the remaining to those boarding the train enroute or without reservation. They are then to prepare a revised chart incorporating the names of the passengers who are finally allotted berths/seats and deposit it with their headquarters. There is no procedure at present of checking these charts with reference to the initial reservation charts.

(iii) As per the Commercial Manual, provision of additional coaches to trains should be decided on in advance so that the waitlisted passengers may have adequate notice of the additional accommodation available. However, a test check on Central and Southern Railways showed that decisions to attach extra coaches, had been taken in most of the cases only a day and sometimes even hours before the departure of the train.

(iv) A part of the accommodation which can be reserved in a train is set aside as quotas for passengers entraining at important en route stations. Passengers boarding at these stations have to seek reservation against the respective quotas; where

these are fully booked and in respect of stations without quotas, the stations are required to send messages for reservation to the starting stations, the latter being required to send a reply message. It was observed, vide instances given in Annexure I, that :

(a) Quotas allotted to en route stations in certain important trains were in many cases found to have been not fully utilised but these (the quotas) had not been reviewed. The unutilised balance of the quotas was left to be allotted on the trains by train officials.

(b) Reply messages were not being sent by major starting stations to requests for reservation with the result that the passengers had to look to the train officials for allotment of berths/seats [c.f. sub. paras (b) under Central and South Eastern Railways of Annexure I for details].

(v) Special trains run to clear the rush of passengers during the busy holiday season were often not patronised well, being not run to the notified time schedule and some times even cancelled at short notice; late running ranged from 4 hours to 17 hours as noticed on South Eastern Railway and nearly 10 hours on Southern Railway.

It would appear that the reservation arrangements, quota allotments, their distribution, etc. had not been reviewed with a view to optimum utilisation of the coaching capacity.

The extant instructions also provide for a test check, at least once a month, by officers not below the rank of Senior Scale, of the correct observance of the procedures, etc. in regard to the reservation arrangements. There was no evidence on record of such test checks having been carried out.

VII. General

1.9 *Tourist Agencies*

Recognised tourist agencies are authorised to issue tickets in accordance with the rules and conditions laid down in the Indian Railway Conference Association Coaching Tariff. There are in all 30 such agencies operating on Indian Railways who have executed agreements with the various Zonal Railways. These agencies, besides competing with the public for reservation in all classes, are entitled to commission on the sale of tickets by them at the rate of 3 to 10 per cent, depending upon the category of tickets sold as per their agreements.

A test check showed that tourist agencies of 7 Railways (*i.e.* all Railways except North Eastern and Northeast Frontier) had brought in business of Rs. 356 lakhs in 1979-80 and Rs. 437 lakhs in 1980-81 (mostly in the upper classes), the commission allowed to them being Rs. 14.9 lakhs in 1979-80 and Rs. 17.9 lakhs in 1980-81 (Details in Annexure VI).

The need for these agencies, considering the paucity of accommodation on the trains, at least for passengers other than overseas tourists, does not seem to have been reviewed.

Railway passes—all types

The Railway staff get free travel privilege passes, retirement complementary passes, concessional privilege ticket orders (PTOs) etc. As per the last published statistics (contained in the Indian Railways Annual Report and Accounts for 1975-76), the value of the passes/PTOs issued in 1975-76* was about Rs. 66.94 crores. According to the Railway Board, the cost of passes/PTOs actually utilised would be much less. Commencing 1976-77, however, the value of passes/PTOs issued is not being given in the Annual Report and Accounts.

*The value of passes and PTOs issued to the Railway staff in 1980-81 as estimated in audit, taking into account the increase in staff strength8 (6.8 per cent) and increase in fares (12.5 per cent) from 1975-76 to 1980-81, is Rs. 80.43 crores.

VIII. Results of the various inadequacies

1.10 The results of inadequate procurement and utilisation of coaching stock for passenger services are discussed below :

(i) *Over-crowding and ticketless travelling*

Inadequate availability of coaches for passenger service due to reasons mentioned earlier coupled with delay in working out and implementing plans to improve the existing level of utilisation, had aggravated over-crowding in second class coaches of trains. The percentage of over-crowding in passenger trains ranged between 100 and 214 in certain cases on Northern, Southern and Western Railways as per the Railway census report of April-May* 1980. On the other hand, the occupation of certain trains** was poor varying from 1 per cent to 96 per cent of the capacity. (October 1980 and May 1981).

Despite heavy rush and long queues at the booking windows of the stations in important cities, the Railways had not (according to the Report of the Railway Convention Committee 1977) been able to correspondingly augment facilities for booking of passengers, such as opening of additional booking counters, provision of self ticket printing machines, etc.

Further, with the over-crowding of passenger trains, in suburban as well as non-suburban sections, the scope for ticketless travelling had considerably increased resulting in loss of revenue.

Persons when detected travelling without tickets, are, if unable to pay the excess fares and fines, locked up by Government Railway Police (GRP) and prosecuted. It was, however, seen that on the Eastern Railway, during 1978---80, out of 80,876 ticketless passengers apprehended as many as 33,158 passengers were let off without realising excess fares and fines amounting

*Details in Annexure VII (1).

**Details in Annexure VII (2)

to Rs. 4.24 lakhs and without launching prosecution against them, for want of accommodation in the GRP lock ups.

(ii) *Loss on passenger services and other coaching services*

According to the Railway Board, the loss on the operation of coaching services was Rs. 227.45 crores in 1980-81. In pursuance of the recommendations of the Railway Convention Committee, 1973 the Railway Board had conducted a profitability study (finalised in September 1980), which revealed, at the level of fares of 1977-78, a loss of Rs. 8.12 crores on AC and first class travel by Mail/Express trains, and a profit of Rs. 74.91 crores on second class travel by these trains. Similarly, in respect of ordinary train services, it revealed a loss, under both, upper and lower classes, of Rs. 106.14 crores and under parcel traffic of Rs. 37.04 crores.

The losses in the case of ordinary train services were attributed to underload running of trains due to paucity of coaches, numerous stoppages, short distance branch line services, etc.

The losing non-suburban short distance (ordinary passenger) traffic had increased by 62.6 per cent during 1974—81. In this connection, the National Transport Policy Committee (NTPC) (May 1980) and Rail Tariff Enquiry Committee (RTEC) (June 1980) had observed that such traffic could generally be carried more economically by road. The RTEC had also recommended that rail and road traffic should be coordinated keeping in view the national economy and the totality of costs between rail and road transport. Notwithstanding the Railway's participation in the Capital of the Road Transport Corporation, effective action in these directions has yet to be taken.

IX. **Summing up :**

1.11 (i) While the actual coaching traffic far exceeded the estimated increases the production of coaches was much less than planned, despite availability of capacity. Production was limited to 54 per cent of ins-

talled capacity in BEML and 76/93 per cent of capacity in ICF upto/after 1977-78.

(ii) The recommendations of the Railway Convention Committee 1973 regarding the need for taking into account the requirements of lower class accommodation and elimination of overcrowding therein had not apparently been kept in view in planning the production of 722 upper class coaches accounting for 27 per cent of the funds released during 1974—81.

(iii) The scope for utilising the Railway service vehicles (inspection carriages, saloons etc.) and tourist cars for passenger service had not been fully explored.

(iv) Less than planned addition to EMU stock, higher ineffective percentage in EMU motor coaches and lack of adequate repair facilities had led to inadequate augmentation of EMU services which could not keep pace with the fast increasing suburban passenger traffic.

(v) The capacity of the Railway workshops was utilised to the extent of 20 per cent only for production of SLRs/luggage brake vans/parcel vans despite persistent shortage of such vehicles; conversion of replaced stock into such vehicles had also not been implemented as envisaged.

(vi) Inadequate production of passenger coaches was not made up by more effective utilisation of available coaches. On the other hand, the extent of ineffectives, even as per the statistical records of the Railways had gone up and exceeded in 1980-81, the liberal norm of 14 per cent. Further, the actual extent of ineffectives, taking into account coaches under repair for less than 24 hours, was far higher, being between 19.9 per cent and 22.5 per cent, as per the census carried out by the Railways in March 1981.

(vii) In a cycle of 24 hours a coach was on the move in passenger trains for 8.50 hours (37 per cent) only. The rest of the period was spent in 'terminal lie over' after running on trains (36 per cent) and in sicklines, maintenance sheds and workshops (27 per cent).

(viii) Among the contributory causes of the long 'terminal lie over' and the time taken in sick lines, sheds, idling etc. were inadequate maintenance and washing facilities at terminals, rakes remaining idle for long periods due to the rake link arrangements (which had not been reviewed), inadequate capacity of workshops and maintenance depots resulting in excessive waiting time, time taken for repairs etc. POH was overdue in respect of 16.6 per cent of the coaches in 1980-81 as against 8.8 per cent in 1974-75.

(ix) The prescribed rules and procedures in the matter of reservation at terminal stations were not being observed fully. The quotas for reserved berths/seats at en route stations, which were found in many cases to have been not utilised fully, had not been reviewed.

(x) The arrangements for sale of tickets through tourist agencies on commission basis had not been reviewed. The recommendations of the RCC for improved booking facilities, especially at important terminals, had also not been fully implemented.

According to the Ministry of Railways (Railway Board) (January 1982) :

(i) The Railways have not been able to meet the total demand of coaching traffic because of lack of funds

and the increased passenger traffic is being carried within the available resources.

(ii) Whenever any cut has to be made it falls invariably on items like maintenance facilities. As a result, the Railways have not been able to develop requisite maintenance facilities, resulting in the number of ineffectives being rather high.

However, as already mentioned in para III(ii) above, the Budget allotments under 'carriages' were reduced during 1974—80 to release more funds for Diesel and Electric Loco production the result of which was surplus loco holding and deterioration in their utilisation indices (cf. para 4 of the Report on "Utilisation of Locomotives").

2. Operation of diesel rail cars*

Diesel Rail Cars have been in operation on various BG, MG and NG sections of the Indian Railways. The manufacture and utilisation of NG Rail Cars of the Railways was commented upon in para 8 of the Report of Comptroller and Auditor General of India for the year 1977-78—Union Government (Railways). The working of BG and MG Diesel Rail Cars of the Railways is reviewed in the succeeding paragraphs.

I. **Policy**

As per policy laid down by the Railway Board, introduction of Diesel Rail Car service on a section is to be governed, inter alia, by the following considerations :

(i) The section is a branch line or a portion of a main line without capacity problems but with steady volume of traffic not seeking dissipation in peak period of short duration.

(ii) The service is for a comparatively short distance.

(iii) The area is far away from coal fields.

*A detailed note was issued to the Ministry of Railways (Railways Board) on 22nd October 1981; its reply is awaited (Febrary 1982).

(iv) Where high capaciy passenger trains are under-utilised and are uneconomic for steam traction in short stretches of branch/main line section they can be replaced by Diesel multiple units.

II. Holding

The authorised stock of rail cars (including trailer coaches) was 29 on the BG and 47 on the MG at the end of 1980-81, as against 36 on the BG and 49 on the MG at the end of 1969-70. However, while these cars performed 1389 thousand kms on the BG and 1017 thousand kms on the MG with a daily performance of 146 and 81 car km on the BG and MG respectively in 1969-70, they performed during 1980-81 only 633 and 640 thousand km with a daily performance of 82.6 and 59.4 km on the BG and MG respectively due to the rail cars remaining out of commission requiring repairs, the percentage of cars under repairs varying from 46 to 60.

These Diesel Rail Cars had been imported during 1956 to 1958 except for 12 units of MG cars which were manufactured indigenously by the Integral Coach Factory (ICF) (and allotted to Southern—6 Nos. and North Eastern—6 Nos. Railways between 1964 and 1971). The Research, Designs and Standards Organisation (RDSO) had been entrusted in 1967 with the task of developing a suitable design of Diesel Rail Cars in multiple units, for replacing uneconomic steam passenger services keeping in view the norms mentioned earlier but it could not develop a suitable design. There were no additions to the fleet, nor replacements since 1971. The entire fleet of rail cars (except 12 MG units manufactured by ICF) is now overaged, having completed their normal life of 15-20 years.

III. Deployment of rail cars on the zonal Railways

The BG* rail cars were in operation, since their procurement, in short-length sections with a lead of 16 to 136 km on the

*Details in Annexure VIII.

Central, Northern and South Central Railways. The services were, however, discontinued from 1974-75 on the Central Railway and from 1977-78 on the Northern Railway but it continues on the South Central Railway in 9 sections (1980-81).

The MG* rail cars were also in operation in similar short-length sections (lead 26 to 137 km) on North Eastern, Southern and Western Railways. While the services are continuing on North Eastern and Southern Railways, those on Western Railway were withdrawn from September 1980.

IV. **Performance of the rail cars**

A review of the performance of the rail cars, their maintenance and operational costs vis-a-vis the earnings realised therefrom over a period from 1969-70 to 1980-81 disclosed the following :

(a) *Central Railway*

Though the rail car services were stopped from 1974-75, 2 rail cars continue as authorised stock and are yet to be condemned and the capital relieved of their cost.

(b) *Northern Railway*

Of the 12 rail cars (alongwith 6 trailer coaches) in service in 1969-70, one was condemned in 1972. Due to lack of arrangements for their POH and maintenance since 1971 and non-availability of essential spares, which were required to be imported, the rail cars were out of order frequently. Between October 1972 and March 1977, as many as five out of the eleven cars remained continuously out of commission. According to Northern Railway, spares worth about Rs. 12.5 lakhs would have had to be procured to commission the cars, mainly by import.

The performance of these rail cars in terms of seat car kilometres had deteriorated from 58437 thousands in 1969-70 to

*Details in Annexure VIII

6649 thousands in 1977-78 (up to 30th September). For this small kilometreage, the Railway Administration had been incurring a monthly expenditure of Rs. 1 lakh (approximately) on maintenance, fuel and lube oil; but the earnings from the services were only of the order of Rs. 0.3 lakh. The services were, therefore, discontinued from October 1977.

In February 1978, the Railway Board decided that the cars in good fettle should be transferred to South Central Railway to augment their services. However, all the eleven rail cars (whether in good fettle or not) were transferred from Jullundur on Northern Railway to Vijayawada on South Central Railway and then sent to Southern Railway for repairs during 1978-79.

(c) *South Central Railway*

The authorised stock of rail cars, which was 16 in 1969-70, was with the transfer (from Northern Railway) of 11 rail cars in 1978-79 augmented to 27.

Due to inadequate arrangements for repairs and periodical overhaul (POH) and for want of essential spares, the performance of the fleet, in terms of seat car km had deteriorated from 53982 thousands in 1969-70 to 43235 thousands in 1977-78. Despite augmentation of fleet by transfer from Northern Railway in 1978-79, the seat car km was only 51908 thousands in 1980-81.

Of the number of cars on line (23), the number in service was between 7 and 9 only during 1980-81, the balance being out of commission/under repair in shops/ineffective in stored condition, etc. The maintenance and operational costs were more than the earnings from the services by Rs. 5.69 lakhs (i.e. Rs. 1.90 lakhs per year) during the period 1978-79 to 1980-81.

No action has yet been taken (December 1981) to assess the necessity for continuance of these services.

(d) *North Eastern Railway*

The fleet of rail cars, which was 14 in 1969-70, was augmented by addition of six ICF manufactured cars in August 1971. Due to frequent break-downs, repairs and lack of spares, seven cars were condemned on age-cum-condition basis upto June 1976. Of the 13 cars on line (including eight imported) since 1977-78, three to four were continually out of commission for want of cylinder liners and other vital parts with the result that the utilisation was only 27059 thousands seat cars km in 1980-81 against the peak of 39393 thousands in 1974-75.

Despite obsolescence of the imported cars, spares such as final drive gear box and its accessories worth Rs. 6.94 lakhs were ordered in February 1974, March 1974 and April 1975 and materialised between December 1975 and June 1977 after extensions to delivery period. Meanwhile, these items alongwith their accessories also became available by cannibalisation of a rail car of similar design involved in an accident in March 1975. This, however, was not taken note of immediately thereafter, resulting in the imported spares (final drive gear box etc.) remaining unutilised (September 1981).

The authorised stock of this Railway continues to be shown as 20, though seven cars had been condemned up to June 1976, write back from capital in respect of which is yet to be carried out.

(e) *Southern Railway*

Of the 18 cars (including 12 imported) on this Railway, six were continuously out of commission since 1974 for want of vital components such as starter motor, fuel injection pump and crank shaft. While seven of these cars had been condemned upto July 1976, the performance of the fleet (in terms of thousand seat car km) shrunk from 55281 to 14022 between 1974-75 and 1980-81.

The rail car services on the above two Railways were also running at a loss in that the maintenance and operational costs were more than the earnings by Rs. 77.73 lakhs during the year 1978-79 to 1980-81.

V. **Factors affecting the performance of the Diesel Rail Cars**

(a) The imported cars had been in service for over 20 years and were, therefore, over-due for complete rehabilitation, which, however, could not be done, due to the obsolescence of their major components. As per the report of the Southern Railway in April 1974, major items such as connecting rods, crank shafts, clutch starter, motor etc. continued to be imported but fuel pump components to replace worn out components were not available either by import or from indigenous sources.

(b) The hydraulic transmission fitted in the ICF manufactured cars also suffered from design defect in that it did not adequately match with the engine capacity, the power produced being more than what the transmission system could transmit, leading to stalling and heating problems on gradients. Though the Board had decided in 1977-78 to close down the service on the Northern Railway as being uneconomic, it has been continued on other Railways without any similar appraisal of their financial viability.

(c) According to the Railway Board (1968-70), diesel rail cars could prove economical only if worked in units of 3 coaches with a total seating capacity of 250-300 passengers and with a potential to earn as much as 500 km per day. While the RDSO could not develop a suitable design of diesel rail car for hauling such trains, the imported as well ICF manufactured rail cars of small size with limited seating capacity (maximum of 164 in BG and 146 in MG in one trip of twin car and performance in recent years between 82.6 and 59.4 km only per day) continued in service. Diesel rail car service in units of two coaches had been found (by Northern Railway) unsuitable

and uneconomical, at least in 1977-78, and in view of the subsequent increases in fuel costs, in particular, the economics of operating rail cars vis-a-vis loco hauled trains had deteriorated thereafter.

(d) None of the existing steam passenger services had been withdrawn when diesel rail car service was introduced. The steam passenger services continued to be run, with the seating capacity under-utilised,* alongwith the parallel diesel rail car services for which also one full path in the relevant sections had to be charted with attendant operating expenses. On the South Central Railway** such services are run even on trunk routes and main lines of Vijayawada Division (1981-82). On the North Eastern Railway, the rail car service was found to be poorly patronised in the sections Kanpur-Anwarganj-Lucknow, Kanpur Central-Brahmavart and Lucknow-Sitapur due to the passenger service provided on the parallel BG system of Northern Railway and by the State Road Transport Corporation bus services.

(e) Even in respect of the rail cars which were condemned or were not being used in any service, the progress in the matter of adjustment of cost from capital has been slow. As many as 8 BG and 17 MG cars are still held as authorised stock, even though these could have been condemned. On the Southern Railway, seven of the old cars were condemned in 1976 on age-cum-condition basis and it was decided to utilise them as trailers or spare coaches in steam trains. While these cars were removed from the authorised stock, the Administration has not yet taken a final decision on their use as spare coaches and the cars are still lying in the workshops (1981).

(f) The diesel rail car services are run on three zonal Railways as shuttles in short length sections between smaller cities, despite regular bus services being available in the sections run by State

*Derived conclusions from the trend of Railway Boards' statistical Statements No. 12 and 24—1976-77 to 1979-80.

**Based on number of passenger trains run in the same sections as per time table.

Road Transport Corporations in the Capital of which the concerned Railways also participate. Besides, trains of 8 to 11 coaches or more and hauled by steam/diesel docos are in operation in the same sections. The question of continuing these uneconomic diesel car services in view of the availability of alternative (and economic) modes of passenger transport and utilising the released stock as passenger coaches does not seem to have been considered.

Summing up

— Though the diesel rail car services did not fulfill the criteria for economic operation laid down in 1968-70, they were continued, thereafter, on the Northern, Southern, South Central, North Eastern and Western Railways without any financial appraisal.

— A financial appraisal of the services on Northern Railway in 1977-78 had confirmed their uneconomic working and also revealed that the existing cars could not be put to effective use without import of costly spares of obsolete design; but the services were continued on other Railways without any similar appraisal. The service continues on South Central, North Eastern and Southern Railways even now (December 1981).

— As against the investment of Rs. 114 lakhs on the rail cars, the Railways incurred operating losses totaling Rs. 83.42 lakhs during the three years ending 1980-81.

— All the rail cars of Northern Railway (whether in good fettle or not) were transferred from Jullundur on Northern Railway to Vijayawada on South Central Railway to augment the latter's rail car service capacity but had thereafter to be sent to the Southern Railway for repairs.

— As seen from the case of procurement (by import) of drive gear assembly by North Eastern Railway, there appeared to be lack of planning and clear cut policy in regard to purchase of spares for overaged rail cars due for discontinuance or replacement.

— Due to delays in condemnation/writing back the value of the rail cars from Capital, assets worth Rs. 23.62 lakhs (excluding spares etc.), though condemned, continue to remain charged to Capital even after a lapse of over 5 years, resulting in continuing dividend liability of Rs. 0.95 lakh per annum.

3. Delay in conversion of luggage compartments in first class coaches

The layout of the Integral Coach Factory (ICF) built first class coaches provided (until 1966) for 24 berths in the case of BG and 20 berths in the case of MG coaches. The layout was revised in 1966 to provide a luggage compartment in the coach, for keeping heavy luggage, thalis etc. by reducing two berths (i.e. 22 and 18 berths respectively).

As the luggage compartments were found to be mostly unused, the Railway Board issued instructions (August 1972) to the Research, Designs and Standards Organisation (RDSO), the zonal Railways and the ICF that the luggage compartments in the first class corridor coaches be removed when these coaches were sent for periodical overhaul (POH) and additional first class berths provided after ensuring space for keeping thalis, water container, etc. and that the ICF should not provide luggage compartment in the coaches to be manufactured thereafter. Accordingly, the RDSO issued revised drawings for BG coaches in November 1972, and for MG coaches in October 1973, to the zonal Railways for carrying out the conversion work in the

existing 711* such coaches, which would have augmented the first class accommodation by two berths per coach i.e. 1,422 in all.

It was observed in audit that the above decision was not followed up by advance planning for staff and material for speedy completion of the modifications during POH of these coaches on the various zonal Railways. On the Central, Northern, Southern and Western Railways there was inordinate delay ranging from 32 to 74 months in getting even the estimates for this work sanctioned and procurement of materials etc. thereafter. Consequently, the progress in the conversion of the coaches was very slow and only 16 out of 387 BG and 33 out of 324 MG coaches had been so converted by 1977-78.

In March 1977, the Railway Board issued instructions to all the Railways suspending the work of conversion pending finalisation of a revised layout by RDSO to provide space for pantry service arrangements, etc. (for thalis, water container, etc.). The suspension was not reconsidered when the Railway Board decided (May 1978) to discontinue manufacturing of first class coaches as a result of which early completion of the modification assumed added importance. It was only in November 1979 that the Railway Board issued instructions for reviving the work since the layout of the RDSO of November 1972/October 1973 for conversion of the luggage compartments already provided for space for thalis, water container, etc. Accordingly, the zonal Railways resumed the work on modification of these coaches from January 1980. The work has however not made any further progress so far (December 1981), beyond the number modified upto 1977-78 except for seven M.G. Coaches.

According to the Ministry of Railways (Railway Board), the slow progress in the conversion of these coaches with luggage compartment was due to the inadequate capacity of the Railway

*387 BG and 324 MG coaches.

workshops to undertake this work along with POH work. However, during 1973-74 to 1977-78, against the total monthly POH capacity of 2134 coaches in Railway workshops on the BG the outturn ranged between 1563 and 1898; on the MG, against the capacity of 1471 the outturn ranged between 1252 and 1419.

The following comments are offered :

(i) The conversion of the 22/18 berth BG/MG first class coaches was approved by the Railway Board in August 1972 after ascertaining the redundance of the luggage compartment therein, as a result of which 711 coaches were to be modified at the time of POH to augment the berth accommodation and earning potential of the Railways. Action in pursuance of the decision of 1972 was however tardy, the reason adduced being inadequate capacity in Railway workshops.

(ii) The POH outturn was less than the available capacity in the workshops of the zonal Railways since 1973-74. Consequently, with advance planning and provision of necessary material and staff, it should have been possible to complete the conversion work, at least for a substantial number of the 711 coaches, if not all, by 1977-78.

(iii) In March 1977, the Railway Board stopped the modification work pending receipt from RDSO of layout for pantry service arrangements, though the November 1972/October 1973 layout of the RDSO had already provided adequate stacking arrangements for thalis, etc. The modification work was revived only in November 1979 i.e. 16 months after the decision of May 1978 to discontinue manufacture of first class coaches.

(iv) Until 1977-78, only 49 coaches had been modified with their accommodation increased by two berths per coach. Even though the modification work was revived in November 1979 there has been no further progress (beyond the 56 converted) despite the scope for and need to provide more berth capacity in the first class coaches.

CHAPTER II

ROLLING STOCK AND OTHER ASSETS

4. Utilisation of locomotives

Introduction

4.1 The locomotive holding of the Indian Railways as on 31st March 1981 comprised :

	Broad Gauge	Metre Gauge	Narrow Gauge.	Total
Steam	4361	2763	345	7469
Diesel	1866	470	67	2403
Electric	1016	20	..	1036
	7243	3253	412	10908

4.2 A review in audit of the procurement, utilisation and performance of B.G. locomotives* revealed the following.

4.3 The acquisition of locomotives during a Plan period is planned with reference to the traffic anticipated and the norms of performance of the locomotives. Necessary provision is made in the annual Rolling Stock Programmes depending upon the delivery period.

4.4 In Paragraph 11 of the Railway Audit Report for 1969-70 it was pointed out that the locomotive holding were far in excess of the requirement for moving the traffic that materialised during 1965-66 to 1968-69. Excess holding of locomotives continued thereafter also.

4.5 The requirement of locomotives, as computed by adopting the norms used by the Railway Board, for the level of traffic (both passenger and goods) moved in 1977-78 (maximum in

*The review is confined to B.G. locomotives only as the B.G. system accounted for 77.5 per cent of the Passenger traffic and 86.60 per cent of the Goods traffic carried by the Railway in 1980-81.

Source of data : Indian Railways Annual Statistical Statements.

A detailed note on the subject was sent to the Ministry of Railways (Railway Board) on 24th November 1981 ; its reply is awaited (February 1982)

any year so far) and the number of locomotives on line during the years 1978-79 to 1980-81 were as below :—

Year	Number of locomotives in steam terms		
	on line	requirement	surplus
1978-79	9809	9300	509
1979-80	9917	9300	617
1980-81	10079	9300	779

However, as the traffic moved in the respective years was much less than in 1977-78, the actual surplus holdings in these years were higher viz., 868, 970, and 1069 respectively.

4.6 The Fifth Plan provision for acquisition of locomotives was stated to be related to the requirement for moving 250-260 million tonnes of traffic, at an average lead of 678 kilometres, by 1978-79. Taking into account the limitations of the capacity of the Production units (CLW* and DLW@) and also availability of funds, ordering of 963 locomotives (electric 299 and diesel 664) was envisaged. Including the throw-forward from the previous ordering, the provision made in the Rolling Stock Programmes for the five years was for 1080 locomotives. However, the actual production of locomotives during the period 1974-75 to 1978-79 (Vth plan) was 866 (electric 263 and diesel 603) and 169 in 1979-80 i.e. 1033 in all (in 6 years), as against the installed capacity of 212 locomotives (72 electric and 140 diesel) per annum. If full utilisation of the installed capacity or even the targeted production (1102) had been achieved the surplus mentioned in paragraph 4.5 above would have been higher.

4.7 A statement showing the traction-wise traffic (Gross tonne kilometres) and the number of locomotives on line is given in Annexure IX.

4.8 As may be seen from the statement given in Annexure IX, the number of diesel and electric locomotives on line increased between 1969-70 and 1980-81 by 1123 and 475 respectively, i.e., by 166 per cent and 93 per cent. The traffic carried under

*CLW—Chittaranjan Locomotive Works, Chittaranjan

(a) DLW—Diesel Locomotive Works—Varanasi

these tractions, however, increased by 103 per cent and 61 per cent only, respectively. On the other hand, the reduction in stock of steam locomotives on line was 23.5 per cent only between 1969-70 and 1980-81 though the reduction in traffic carried under steam traction was of the order of 58 per cent. Thus, the traffic carried under all the three tractions (diesel, electric and steam) was far less than their respective hauling capacities resulting in inadequate utilisation of locomotives.

4.9 The indices of utilisation of locomotives showed deterioration over the years in that the traffic moved per locomotive declined, as under :

	Net tonne kilometre per day per BG. goods locomotives in use			Gross tonne kilometre per kg. of traction effort		
	Steam	Diesel	Electric	Steam	Diesel	Electric
1969-70	31284	225958	242263	1139	5193	4923
1973-74	23810	198571	184109	945	4253	4459
1976-77	21888	229707	297651	904	4729	4216
1977-78	22169	243892	303779	883	4751	4089
1978-79	17415	213119	236513	741	4600	3480
1979-80	13986	213024	226578	666	4508	3316
1980-81	11781	212502	201472	611	4497	3390

The traffic moved per locomotive was less in all the years (except in 1976-77 and 1977-78 for diesel and electric locos) than in 1969-70.

Utilisation of diesel locomotives-

Availability for traffic use

4.10 Effective utilisation of a locomotive depends upon its timely availability for traffic use, materialisation of load and speed. (Traffic use comprises time spent in hauling trains, terminal detentions, idling in sheds, shunting services, etc., but excludes time spent in sheds and shops when not available for use).

4.11 The number of diesel locomotives available for traffic use during the years 1969-70 to 1980-81 ranged between 81.53 per cent (1976-77) and 88.27 per cent (1969-70) of the number of locomotives on line. After 1976-77 the availability improved to 85.27 per cent in 1978-79, which marginally increased to 85.76 per cent in 1980-81.

4.12 A statement showing analysis of the time spent by passenger and goods locomotives on various services such as train engines, shunting services, etc., and performance in terms of engine kilometres is given in Annexure X. As may be seen from the details in Annexure X (column 5) the daily availability of locomotives for traffic use (passenger services) was as low as 11.6 hours during 1979-80 on the Eastern Railway against 18—21 hours on other Railways. Similarly, in respect of locomotives deployed on goods services, the availability was only 14.4 hours on the Eastern Railway in 1979-80 against 18-19 hours on other Railways.

4.13 Out of the total availability for traffic use, the time spent by a passenger and a goods (diesel) locomotive in hauling trains, in 1980-81, was only 64 per cent and 56 per cent respectively. While for goods locomotives train engine hours constituted 55.9 per cent in 1980-81 (against 62 per cent in 1971-72), shunting engine hours 15.5 per cent, assisting engine hours 2.5 per cent and in sidings and departmental use 3.2 per cent, the balance of 22.9 per cent (residual hours) represented the time taken by a locomotive in travelling between the shed and the station, waiting for traffic, late starting of trains (for which it is booked), idling in sheds, etc. Between 1977-78 and 1980-81, the total goods train engine hours increased from 4154 thousands to 4679 thousands (12.4 per cent) on account of increase in stock but the 'residual hours' increased from 1695 thousands to 1920 thousands (13.3 per cent). Bulk of the 'residual hours' in 1980-81, i.e. 22.9 per cent of traffic hours or equivalent of 235 out of 1026 locomotives in use, represented utilisation of power on unproductive work. (The cost of a diesel locomotive was Rs. 54.4 lakhs in 1979-80).

4.14 As may be seen from the details in Annexure X, such unproductive locomotive hours arising out of locomotives not being put to use (though available for use) due to terminal detentions, idling in sheds, etc. increased during 1980-81 (compared to 1977-78) on the Northern, the Southern and the South Eastern Railways.

In the major yards on Southern Railway (Tondaiyarpet, Arakkonam, Jolarpettai, Cochin Harbour, etc.) the average detention in excess of the targets laid down was 37.4 hours in 1979-80, representing equivalent of 2 locomotives per day. A test review by Audit of terminal detentions in Mughalsarai Yard (Northern Railway) in the months of May 1979, August 1979, December 1979 and March 1980 showed that in 62 cases the detention ranged between 10 hours to 17 hours on each occasion.

4.15 Detentions to locomotives in yards on account of late start of goods trains arising out of non-availability of loads or path, late arrival of crew, etc. constituted 8.6 per cent of the goods engine hours on the Southern Railway during 1979-80 and 4 per cent and 4.4 per cent during 1979-80 and 1980-81 respectively on the Western Railway.

4.16 While the train engine hours represent the time spent by the locomotives in hauling trains (out of the total time available for traffic use), they also include detentions en route for change of crew, line clear, etc. The actual utilisation net of such detentions etc. is indicated by the indices of engine kilometres per day per engine in use, net tonne kilometres per engine hour and speed. These indices for 1973-74 and during 1976-77 to 1980-81 were as follows :

	1973-74	1976-77	1977-78	1978-79	1979-80	1980-81
Engine kilometres per day per engine in use (EKM)						
Passenger	694	721	748	628	630	610
Goods	307	379	363	317	307	303
Net tonne kilometres per engine hour	10436	11344	11590	11067	11130	11057
Average speed of all goods trains kilometres per hour (km/hr)	22.2	23.1	22.3	21.5	21.3	21.3

Thus, the utilisation of locomotives (as measured by EKM) deteriorated after 1976-77 and, in 1980-81, it was even lower than in 1973-74. Further, as may be seen from the details in Annexure X, there was deterioration on all Railways, that on Central and Western Railways being particularly sharp. The Railway Board had fixed (February 1979) targets for utilisation of locomotives varying from 328 EKM per day on Eastern Railway to 450 EKM per day on Northern Railway. None of the Railways had acheved the target prescribed except the Eastern Railway where the target itself was low.

4.17 A contributory factor of the deterioration in utilisation was the decline in the average speed of goods trains from 22.3 kmph in 1977-78 to 21.3 kmph in 1980-81. In the case of passenger locomotives, there had been increase in detentions and decline in punctuality in 1979-80 and 1980-81 compared to earlier years. The percentage of mail and express trains (mostly hauled by diesel/electric locomotives) arriving right time was 84 in 1977-78, 72 in 1978-79, 65 in 1979-80 and 67 in 1980-81. The decline was more pronounced on the Central (from 97 per cent in 1977-78 to 62 in 1980-81 Eastern (from 89 in 1977-78 to 53 in 1980-81) Northern (from 87 in 1977-78 to 68 in 1980-81) and South Central (from 82 in 1977-78 to 65 in 1980-81) Railways.

Extent of non-availability for traffic use

4.18 As was mentioned in paragraph 4.11 above, in 1980-81 85.76 per cent of the locomotives only were on an average available for use. The balance of 14.24 per cent or 256 locomotives per day, was under/awaiting repairs. This includes the time spent while waiting for being taken to shops for repairs, in carrying out the repairs, etc. The position of repairs, etc. is discussed in the following paragraphs.

Idle time before/after repairs

4.19 There were delays in sending locomotives (after withdrawal from traffic) to workshops for periodical overhaul (P.O.H.)

and in putting them back to traffic after P.O.H. resulting in their non-utilisation for several days. A test check showed that, in 1979-80, in Bondamunda shed (South Eastern Railway) there were delays aggregating 143 days involving 11 locomotives, in Mughalsarai (Northern Railway) 87 days (4 locomotives) and in Howrah-Burdwan (Eastern Railway) 24 days (10 locomotives) in sending the locomotives for P.O.H. Similarly, in putting the locomotives back to traffic after P.O.H. there were delays at these sheds as also the sheds at Itarsi, Waltair and Ratlam resulting in aggregate loss of 330 days (62 locomotives) at Itarsi during the period 1978-79 to 1980-81, 114 days (5 locomotives) at Ratlam during the period March—June 1981, and from 16 to 69 days (4 to 10 locomotives) in the other sheds.

Facilities for repairs, etc.

4.20 Though diesel traction was introduced in 1958-59, the creation of facilities for their repair and P.O.H. did not always synchronise with the allotment of locomotives to Railways. Thus, on the Northern Railway, while the holding of WDM2 locomotives increased from 89 in 1976-77 to 155 in 1979-80, the facilities for maintaining the locomotives, according to the Railway Administration's Annual Report for 1979-80, had not been simultaneously increased adequately.

4.21 Similarly, while the Diesel loco shed, Ratlam (Western Railway) was commissioned in 1967 for homing 40 locomotives, its expansion was undertaken in March 1976 to enable holding of 100 locomotives. Even before the expansion work was completed, the holding increased to 116 (1973-74) and, therefore, work on a new diesel locomotive shed (at Vatva) for homing 50 locomotives was taken up and is in progress (74 per cent). Meanwhile the available facilities had been found inadequate for the holding with the result that the average number of locomotives awaiting repairs increased from 18 in 1978-79 to 22 in 1979-80.

On the other head, the facilities created in Kharagpur (South Eastern Railway) were not utilised fully. Against the

established capacity for P.O.H. of 60 locomotives annually, the actual outturn in 1979-80 and 1980-81 was 49 and 47 only respectively. To avoid idling of the capacity, the Railway Administration decided to undertake yearly and three-yearly maintenance schedules which are to be carried out in sheds, but were in arrears. However, three-yearly schedules for 13 locomotives only were carried out in 1980-81.

Time taken for repairs

4.22 (a) Instances were noticed of detentions to locomotives in sheds 'waiting for materials' for long periods as indicated below :

Itarsi shed—Between June 1979 and May 1981, 20 locomotives suffered detentions of 6 to 179 days totalling 737 days *i.e.* equivalent of 2 locomotives remaining immobilised for a whole year.

Burdwan shed—During 1978-79 three locomotives were detained for periods of 1—4 months.

Mughalsarai shed—During October 1978—March 1980 one locomotive was out of commission from June 1979, three were detained for 14, 15 and 18 months, and 4 more for periods of 1 to 6 months.

Bondamunda shed—Between July 1978 and March 1981, 6 locomotives suffered detentions ranging from 101 to 556 days and 50 more from 4 to 92 days.

Waltair shed—During 1978-79, 1979-80 and 1980-81, 16 locomotives remained immobilised for over 100 days (maximum upto 306 days) and another 55 for periods of 14 to 100 days.

(b) Cases were noticed of locomotives sent to sheds for maintenance suffering excessive detentions. At Itarsi shed, time

standards for periodical maintenance schedules had not been fixed and the time taken for various schedules was excessive compared to that for similar schedules in other sheds, *e.g* the quarterly schedules took 32 hours as against 24 hours in Gooty and 16 hours in Ratlam sheds ; similarly, the yearly schedule took 23 days against 10 days in Gooty and Ratlam sheds. At Erode shed, 2253 days and 2388 days were lost in 1979-80 and 1980-81 respectively on account of excessive detentions to locomotives and non-observance of targets fixed. At Bondamunda and Waltair, the corresponding loss was 1181 days and 736 days involving 249 and 22 locomotives respectively during 1979-80.

(c) A review of the time taken for periodical overhaul in workshops showed that the actual time taken was far above the target of 26 days. In Parel Workshop (Central Railway), the loss of locomotive days on account of such excessive detentions was 307 in respect of 67 locomotives during 1978-79 and 1979-80 ; the corresponding loss in Charbagh Workshop (Northern Railway) was 1622 days involving 25 WDM2 locomotives during the period May 1976 to September 1979 and 464 days for 11 WDM4 locomotives during 1979-80. In Kharagpur workshop, 544 days (54 locomotives) were lost in 1978-79, 461 days (40 locomotives) in 1979-80 and 509 days (45 locomotives) in 1980-81.

(d) A review by Audit of maintenance of locomatives in 8 sheds (Itarsi, Howrah-Burdwan, Mughalsarai, Tughlakabad, Erode, Bondamunda, Waltair and Ratlam) and 3 workshops (Parel, Charbagh and Kharagpur) showed that (i) the percentage of ineffective locomotives (*i.e.* not fit for use), (ii) the number of engine failures on account of mechanical defects, mismanagement by crew', etc. and (iii) delays in carrying out the maintenance schedules had increased. The percentage of ineffective locomotives had increased in 1979-80 in the sheds at Bondamunda, Mughalsarai and Erode ; the number of failures had increased in the sheds at Itarsi, Bondamunda, Mughalsarai, Tughlakabad and Erode, vide details given in Annexure XI. At Ratlam shed,

45—50 per cent of the engine failures were attributable to defective components and spares.

(e) One of the reasons for the high incidence of engine failures was non-observance of maintenance schedules such as trip schedules, monthly, quarterly and yearly schedules and P.O.H. On the Central Railway, the schedules of 42 locomotives were found to be overdue by 1—6 days during April 1979 and May 1979. On the Northern Railway, out of 72 locomotives in Mughalsarai shed only 11 had been given P.O.H. upto 1979-80 and that too after a lapse of 16 years. On the Southern Railway, the percentage of locomotives overdue for P.O.H. increased from 6.42 in 1977-78 to 9.69 in 1978-79. The incidence of failures was found to be higher in the locomotives running overdue P.O.H.

(f) Cases were also noticed of engines failing within a short interval after P.O.H. due to bad workmanship, use of defective parts, etc. Of the 86 engine failures analysed by Audit during 1978-79 to 1980-81 in Tughlakabad (41), Waltair (22), Bondamunda (17) and Ratlam (6) sheds, 13 failures had occured within one month of P.O.H., another 16 in 2 months, 12 in 3 months and 7 within 6 months. An average of 5 days per locomotive was taken by the South Eastern Railway to repair the failed locomotives and to put them back to traffic.

4.23 Thus, the utilisation of locomotives as measured by Engine kilometres per day, speed, etc., had deteriorated in 1979-80 and 1980-81 as compared to the performance in earlier years ; excessive idling of locomotives had occurred on account of delays in sending them for repairs and putting them back to traffic after repairs, 'waiting for materials', etc.

Utilisation of electric locomotives

4.24 Upto 1980-81, 5178 kilometres of railway lines had been electrified, as against 4493 kilometres upto 1975-76. The

traffic carried under electric traction and the locomotives on line during the last 5 years were as below :

Year	Traffic carried Gross tonne kilometres (millions)			Number of locomotives on line
	Passenger	Goods	Total	
1976-77	16671	76823	93494	796
1977-78	20656	77847	98503	852
1978-79	21571	70990	92561	890
1979-80	22593	68045	90638	929
1980-81	23323	69169	92492	988

The number of electric locomotives in use for goods services on 31st March 1981 was 522 as against 368 on 31st March 1977. During this period, however, the goods traffic in terms of gross tonne kilometres carried by electric traction decreased from 76.8 billions in 1976-77 to 69.2 billions in 1980-81, indicating considerable under-utilisation. The pay load (net tonne kilometres) per engine hour of these locomotives consequently went down from 12,668 in 1976-77 (12028 even in 1969-70) to 11104 in 1980-81.

4.25 The availability and use in train of locomotives for goods services had declined on all Railways during 1979-80 and 1980-81 compared to 1976-77. The number of hours worked per day which was 19.1 in 1976-77 (18.2 even in 1969-70) declined to 17.5 in 1979-80 and 16.7 in 1980-81. On the Northern Railway, the actual usage during 1979-80 on train was only 8.68 hours out of the available 17.03 hours ; on the Western Railway it was only 8.56 hours out of 18.74 hours in 1979-80 and 8.48 hours out of 19.03 hours in 1980-81 ; on the South Eastern Railway it was 10.6 hours out of 21.2 hours in 1980-81.

4.26 One of the reasons for the low utilisation was the extent of detentions in yards, waiting in sheds, etc. represented by 'residual engine hours' (unproductive hours) which had increased from 1154 thousands (35 per cent of goods engine hours) in 1975-76 to 1391 thousands (40 per cent) in 1980-81. The

speed of goods trains hauled by electric locomotives had also declined from 25.4 km per hour in 1976-77 (25.8 in 1969-70) to 22.8 only in 1980-81.

4.27 The utilisation of locomotives measured in terms of Engine kilometres per day, for which a target of 425 km had been laid down by the Railway Board, was lower in 1979-80 and 1980-81 on the Eastern (260 and 266), Northern (358 and 369) South Eastern (397 and 351) and Western (437 and 414) Railways than in earlier years (ranging from 410 km to 655 km in 1976-77).

In relation to the target, the excessive hours on line in 1979-80 on the Kanpur—Allahabad—Mughalsarai sections of the Northern Railway amounted to 49,980 hours.

On the South Eastern Railway a test check for March 1980 and March 1981 showed that the detention en route were excessive compared to the prescribed timings; on the sections Jharsuguda Jn.—Bilaspur Jn. and Bilaspur Jn.—Bhilai these (in the aggregate) were as much as 5411 hours and 5766 hours.

4.28 A review in audit of the utilisation of selected locomotives revealed that the loads hauled by them were also much below the loads prescribed by the Railway Administration. On Northern Railway, the maximum load of electric trains (in the months of May 1979, August 1979, December 1979 and March 1980) ranged between 2530 tonnes and 2960 tonnes against 3200 tonnes to 4600 tonnes prescribed. On the Western Railway, 85 per cent of the trains run during April—June 1979 carried loads less than 2,000 tonnes against 2346—2765 prescribed for four-wheelers and 3660 tonnes for BOX wagons.

D.C. Locomotives on Central Railway

4.29 In paragraph 9 of the Report of the Comptroller and Auditor General of India for the year 1975-76—Union Government (Railways), it was mentioned that on account of design defects 57 WCG2 locomotives produced in CLW, essentially for

banking purposes, could not be used as bankers. The utilisation of these locomotives showed further deterioration during 1978-79 and 1979-80. The daily availability for traffic use was 13.0 hours in 1979-80 against 14.4 in 1975-76, 17.1 in 1976-77, 14.4 in 1977-78 and 13.4 in 1978-79. The traffic moved per locomotive in use was 79419 net tonne kilometres in 1978-79 and 81457 in 1979-80 against 84216 in 1975-76. The engine kilometres per day per locomotive in use also decreased from 426 in 1977-78 to 227 in 1979-80 and 218 in 1980-81.

Allotment of locomotives to Railways

4.30 The locomotive are allotted to the zonal Railways on the basis of the Power Plans submitted by them showing their requirements for various types of traction. The freight traffic carried by electric traction on the Eastern Railway declined from 12520 million net tonne kilometres (65.3 per cent of freight traffic under all tractions) in 1969-70 to 8282 million net tonne kilometres (43.2 per cent of total freight traffic) in 1980-81. However, the number of locomotives added and 'in use on goods services' increased from 101 in 1969-70 to 145 in 1980-81. It would appear that the allotment had not been made after a realistic appraisal of the traffic requirements.

Time taken for repairs, POH, etc.

4.31 Due to non-synchronisation of provision of maintenance facilities with introduction of electric locomotives, the Northern Railway had to send them to Kancharapara workshop (Eastern Railway) and Bhusaval workshop (Central Railway) for P.O.H., the time taken for P.O.H. in these workshops during 1979-80 was 70 days and 57 days respectively (against the prescribed 30 days). The number of locomotive days lost as a result was 1057 in respect of 30 locomotives. Similarly, 276 days were lost in respect of 12 locomotives on the Western Railway and 586 days in respect of 19 locomotives on the South Eastern Railway during 1980-81. On the Central Railway the time taken for periodical overhaul of 32 locomotives (reviewed by

Audit) during the period September 1977 to August 1981 was 32 to 73 days against 30 days prescribed ; the detention was over 60 days in 14 cases, and 40—60 days in 13 cases.

4.32 Similar hold up of locomotives was also noticed in respect of other repair schedules carried out at Bhusaval, Kanpur, Tatanagar and Bhilai sheds. One of the causes of the delays was stated to be non-availability of spares from CLW despite 10 per cent of capital spares being supplied by CLW along with new locomotives.

4.33 The extent of engine failures on various Railways also showed increase from 140 in 1978-79 to 162 in 1979-80 on Northern Railway, from 277 to 294 on Eastern Railway and from 958 to 1045 on South Eastern Railway. The high incidence of failures on the South Eastern Railway was attributed by the Administration to sub-standard spares and stores, inadequate maintenance and 'mismanagement' by crew.

4.34 Another major factor was the extent of failures of traction motors of the locomotives. The number of such failures on the South Eastern Railway was 247 in 1978-79, 252 in 1979-80 and 246 in 1980-81 and on Western Railway 101 in 1979-80. At the end of 1980-81, 249 traction motors were awaiting repairs on South Eastern Railway and 90 (July 1980) on Northern Railway. Delay in repairs resulted in detention in shops of ten locomotives on Northern Railway in 1979-80 for 15 to 41 days and one for over 9 months. On the Western Railway, for want of facilities at Ratlam, traction motors had to be sent to CLW for repairs and consequently, five locomotives had to be stabled for periods ranging from 12 days to 140 days in 1979-80.

4.35 During 1979-80, there were 18 cases of failure of locomotives on Western Railway on account of leakage of water through roof causing detentions to trains for 29 hours in mid-sections. The roofs of 96 locomotives had consequently to be modified between August 1979 and July 1980 involving detentions in sheds for 6 days per locomotive on an average.

Vijayawada loco shed

4.36 The planning and setting up of the electric loco shed at Vijayawada (South Central Railway) are reviewed below.

The shed was designed to cater to the repair and maintenance of 100 WAM4 type locomotives, manufactured by the CLW Forty-seven such locomotives had been received at the shed by December 1980, when the Railway Board decided to transfer 50 WAG1 locomotives, after carrying out certain modifications, to the South Central Railway of which 12 had been received upto May 1981. In order to cater to the requirements of these locomotives the shed at Vijayawada is proposed to be modified at a cost of Rs. 1.48 crores, sanction (of the Railway Board) for which however was accorded only in August 1981. Meanwhile, the facilities already created (cost Rs. 240 lakhs) for WAM4 locos are being utilised only to a limited extent, there being only 47 such locomotives. As far WAG1 locomotives, adequate facilities for repair, maintenance and POH being not available, it had not been possible to adhere to the targets of overhauling schedules fully. As against the time limits of 6 hours, 8 hours and 12 hours prescribed for monthly, bi-monthly and four-monthly schedules respectively, the average time for which the locomotives remained in the shed for overhaul was very high during the six months upto May 1981, being 20 hours to 93 hours for monthly, 14 hours to 96 hours for bi-monthly and 57 to 173 hours for four-monthly schedules.

Utilisation of electrified track

4.37 Although 5178 kilometres of railway lines had been electrified by March 1981, there is mixed traction practically on all routes of the railway network at present (November 1981) resulting in duplicate facilities such as steam sheds for steam locomotives and diesel sheds for diesel locomotives and shunters, etc. Also, there were delays in taking up electrification of short links necessitating running of diesel trains for operational reasons. Some instances are given in Annexure XII.

Utilisation of steam locomotives

4.38 (i) The BG steam locomotive holdings (production discontinued from 1971) at the end of 1969-70 and 1980-81 and the traffic carried by them in these years were as below :

	1969-70	1979-80	1980-81
(a) Holdings (on lines)	5927	4697	4532
(b) Traffic carried (GTKM billions)	103.853	50.352	43.372

(ii) The stock of steam locomotives on 31-2-1981 included 108 overaged locomotives. Even by the year 1998 another 1592 WP and WG locomotives only would be due for condemnation on age basis leavin gin service 1575 such locomotives, besides locomotives of other classes.

The holdings of B.G. steam locomotives (4846) on 1st April 1978 comprised 28 different classes of engines. Even after condemnation of 446 locomotives (being overage), during the period 1978—83, 16 classes of locomotives would still be left with the Railways. The various classes of locomotives are distributed on all Railways. The feasibility of redistributing the various classes of locomotives so as to minimise multiplicity of maintenance facilities does not seem to have been considered.

(iii) The Railways had shown 562 to 657 BG steam locomotives as spare during the years 1977-78 to 1980-81. These were not however taken off the line and kept as 'good repair stored' but were available for traffic use, the actual number kept off the line being therefore much less. The retention of a large number of locomotives for traffic use, though not justified by the requirements of traffic, meant more expenditure in terms of maintenance, operating costs including crew and other staff, unnecessary fuel consumption, etc.

(iv) During the years 1978-79 and 1979-80, 11,408 million and 6,995 million tonne kilometres of through goods traffic (on main lines, excluding sectional, transhipment and shunting trains)

was moved by steam traction, the fuel cost on moving this quantum of traffic being Rs. 19.39 crores and Rs. 11.89 crores in 1978-79 and 1979-80 respectively. If this traffic could have been diverted to diesel traction by rationalisation of operation between the different modes of traction, Rs. 13.74 crores in 1978-79 and Rs. 8.55 crores in 1979-80 could have been saved on fuel cost alone. If the other operating costs and repairs and maintenance are included the saving would have been much higher.

4.39 A review of utilisation of steam locomotives revealed the following :

(i) The number of locomotives under or awaiting repairs increased from 673 (13.4 per cent) in 1976-77 to 745 (16.4 per cent) in 1980-81 though 487 numbers (mostly overaged) had been taken off the line.

(ii) Detentions to locomotives in yards and sheds were on the increase in relation to the hours spent on train engines vide details given below :

	Passenger service		Goods service	
	1975-76	1980-81	1975-76	1980-81
Tra in engine hours	3191	2792	2913	1310
Other hours (terminal detentions, idling, etc.)	1141	1177	2186	1293
Percentage of other hours	35.8	42.2	75.0	98.7

(iii) With the reduction in steam locomotives, heavier types of locomotives (including WG locos) are employed for shunting purposes. The shunting kilometres per 100 train kilometres increased from 35.0 in 1975-76 to 38.1 in 1980-81. On the Southern Railway this index had risen from 37.8 in 1977-78 to 46.5 in 1979-80. The increase in percentage of shunting kilometres is attributable to slackness in shunting.

Sheds and workshops

4.40 (a) Locomotives under/awaiting repairs on South Eastern Railway increased from 101 (16.8 per cent of the number on line) in 1977-78 to 135 (23.6 per cent) in 1979-80.

(b) Engine failures increased between 1978-79 and 1979-80 from 50 to 119 in four sheds of Northern Railway and from 355 to 557 on South Eastern Railway; a substantial number (39 per cent in 1979-80) of the failures was attributed by the Railway Administration to bad workmanship in sheds.

(c) The time fixed for P.O.H. in workshops is 18 days for a locomotive. It was noticed that the time taken by sheds and workshops for carrying out the various schedules was excessive in relation to the targets fixed. The time taken in excess of the target in Charbagh and Amritsar workshops during 1980-81 was 337 days (134 locomotives) and 101 days (30 locomotives) respectively.

(d) The detentions in shops were attributed to non-availability of materials, gas and spare parts, heavy absenteeism, etc. Locomotives had been also detained after P.O.H. at Amritsar and Charbagh workshops for as many as 129 (30 locomotives) and 1829 (134 locomotives) days respectively in 1980-81.

(e) Further, on the Northern Railway the excess time taken for maintenance schedules of B.G. locomotives in 5 sheds during 1979 and 1980 was 3654 locomotive days (148 locomotives). Including the transit time from sheds to shops and back, the total number of locomotives days lost worked out to 12893.

(f) On the South Eastern Railway, the extra time taken over the targets allowed at Kharagpur shed was 37 to 160 days in respect of 8 locomotives in 1979-80 and 33 to 93 days in respect of 9 locomotives in 1980-81. In all, 778 and 506 engine days (8 and 9 locomotives) were lost in 1979-80 and 1980-81 respectively on account of such excessive detentions which were stated to be partly due to non-availability of materials.

Fuel consumption

4.41 A Fuel Control Organisation under an Additional Chief Mechanical Engineer exists on each zonal Railway to keep a watch on fuel consumption. The fuel consumption by the

Railways for locomotive purposes, the cost and the traffic carried under different types of traction from 1969-70 onwards are given in Annexure XIII. It may be observed that, while the traffic carried by steam traction decreased by 45 per cent, the quantity of coal consumed decreased by 25 per cent only during the period from 1969-70 to 1979-80.

4.42 The following features were noticed during test check of fuel consumption by locomotives.

Diesel oil

4.43 (a)(i) On the Eastern Railway, 'trip rations' of diesel oil had not been fixed at all and the instructions issued by the Railway Board in this regard in November 1967, April 1968 and August 1977 had not been implemented.

(ii) Similarly, on the Northern Railway, 'trip rations' had not been fixed in respect of various sections served by WDM2 locomotives homed in Tughlakabad shed.

(iii) The 'trip rations' fixed in 1972 for the BG sections of the Western Railway are still operative and have not been revised despite changed operational conditions, such as removal of speed restrictions, etc.

(b)(i) On the following Railways the consumption of diesel oil exceeded the 'trip rations' (as revealed during a review by Audit of the trip cards of individual locomotives relating to 1979-80 and 1980-81).

	Diesel oil (litres) per 1000 GTKM			
	Trip rations		Actual consumption	
	Passenger	Goods	Passenger	Goods
Central Railway (Itarsi)	4.5	3.5	5.4 to 8.9	3.5 to 5.5
Northern Railway (Mughalsarai)	4.96 to 5.04	2.9 to 3.22	4.98 to 5.60	2.91 to 5.—

The excess consumption in one month—December 1979 was 0.48 lakh litres (cost Rs. 0.67 lakh) in respect of 28 locomotives.

Southern Railway (Erode)

The excess consumption in March 1980 and March 1981 amounted to 0.82 lakh litres and 1 lakh litres respectively (cost Rs. 2.33 lakhs).

South Eastern Railway (Bondamunda)

The excess consumption during February 1981 to June 1981 (5 months) was 0.57 lakh litres, (cost Rs. 0.79 lakh).

(ii) While the Central Railway Administration attributed the excess consumption to running of passenger trains with low average loads and on non-planned link trains, no reasons were forth-coming for the excess consumption on Northern and South Eastern Railways.

(c) Drivers are required to switch off the engines whenever the detention is expected to exceed 30 minutes. A test check of the detentions suffered by (selected) locomotives revealed that if the instructions had been implemented the Railway Administrations could have saved substantial quantity of diesel oil. Thus, on Central Railway, 10 locomotives reviewed by Audit suffered detentions exceeding one hour aggregating 732 hours in August 1979, involving Rs. 0.24 lakh on diesel oil consumption for such detentions; on Northern Railway 28 locomotives reviewed suffered detentions on 2609 occasions for an aggregate of 6308 hours during May 1979, August 1979, December 1979 and March 1980 involving Rs. 2.3 lakhs on diesel oil and lube oil; on South Eastern Railway there were 49 cases of detentions in excess of one hour during a period of 4 days covered by check in June 1981, aggregating 304 hours and involving diesel oil consumption valued at Rs. 0.23 lakh.

(d) The Railway Board had issued instructions to the Railways in October 1973 and June 1978 that consumption of lubricating oil should not normally exceed 1.5 per cent of the diesel oil consumed for WDM2 and WDM1 locomotives and 1.1 per cent for WDM4 locomotives. The actual consumption by the Railways was as follows :

	Percentage of lube oil to diesel oil consumed by WDM2 locomotives		
	1978-79	1979-80	1980-81
Itarsi	2.00	1.79	1.80
Tughlakabad	0.96	2.18	2.19
Erode	1.60	1.48	1.68
Bondamunda	1.92	2.50	2.40
Waltair	1.86	1.85	1.99
Ratlam		2.67	2.31

In respect of WDM 4 locomotives homed at Mughalsarai the figures were 1.31 per cent and 1.39 per cent in 1978-79 and 1979-80 (against the target norm of 1.1 per cent).

The cost of excess consumption in the five sheds at Itarsi, Tughlakabad, Bondamunda, Waltair and Ratlam worked out to Rs. 1.91 crores and Rs. 1.12 crores during 1979-80 and 1980-81 respectively, but the matter does not seem to have been investigated.

Shed consumption of Diesel oil

(e) The Central Railway Administration had not fixed the (norm) scale of consumption of diesel oil for the various schedules carried out in Itarsi shed. A test check showed that the consumption of diesel oil in 1979-80 and 1980-81 ranged from 174.5 to as much as 244.8 litres for a trip schedule.

The norms on the Northern Railway varied from 17280 litres per month in Mughalsarai shed to 77045 litres per month in Tughlakabad shed. The actual consumption during July 1979

to December 1979 at Tughlakabad however exceeded even the target by 77,250 litres, the reasons for which had not been investigated by the shed authorities.

At Erode also, no yardstick had been fixed; however, the shed consumption increased from 11.30 lakh litres in 1979-80 to 13.56 lakhs litres in 1980-81, though the number of locomotives homed had increased marginally by two only.

At Waltair, the shed consumption (15.85 lakh litres) exceeded the target by 3.05 lakh litres during 1980-81 *i.e.* by 23.9 per cent, but the excess had not been investigated.

Coal

4.44 (a)(i) The rate of consumption of coal has been increasing as indicated below :—

Year	Coal (Kgs.) consumed per 1000 GTKM (BG)	
	Passenger	Goods
1969-70	58.3	58.9
1973-74	62.2	65.5
1977-78	62.2	65.7
1978-79	67.1	74.1
1979-80	69.8	83.0
1980-81	75.2	91.0

(ii) Steep increase in the rate of consumption in 1978-79 and 1979-80 was explained by the Railway Administration as being due to drop in average load per train, in speed, in the proportion of fast trains to slow trains, in engine use (due to excessive detention) and in the quality of coal and increase in engine failures.

(iii) The average gross load of goods trains had decreased from 1037 tonnes in 1975-76 to 850 tonnes in 1980-81 (*i.e.* by 18.0 per cent); however the rate of coal consumption had increased by 38.9 per cent during the same period.

(iv) The quantity of coal consumed on shunting services was the same, *viz.* 2.85 million tonnes, in both the years 1978-79 and 1979-80 though the hours spent by steam locomotives on shunting work had decreased, from 5.7 million hours in 1978-79 to 5.6 million hours in 1979-80.

The increase in consumption was attributed to use of heavier types of locomotives for shunting services, such as WG (which are standard locomotives for main line services). These locomotives have a larger fire grate area (46 sft.) than the standard shunting locomotives (WS-30 sft.). The question of reducing the fire grate area in these engines used for shunting (by carrying out suitable modifications) so as to minimise coal consumption does not seem to have been considered by the Railways.

Excessive consumption at sheds

(b) (i) An allowance of 5 quintals of coal is added to the trip ration for shed movement of engines, keeping the engines in steam, etc. A review of the position at Mughalsarai, Kanpur and Allahabad for the period November 1979 to April 1981 showed that the quantity consumed was 3308 tonnes in excess of the allowances fixed. This excess consumption was attributed (December 1980) by the Senior Divisional Mechanical Engineer to pilferage.

(ii) Similar excess consumption valued at Rs. 5.95 lakhs due to pilferage was noticed in respect of lie-over of locomotives at Palwal station of Central Railway during 1979-80.

4.45 *Summing up*

(1) General

The locomotive holding of the Railways on 31st March 1981 was excessive in relation to the requirements of traffic, the surplus being 779 locomotives in terms of steam locomotives.

(2) Diesel and electric locomotives

(a) Both in the case of diesel and electric traction, the number of locomotives placed on line between 1969-70 and 1980-81 was far more than justified by the increase in traffic. While the number of diesel locomotives increased by 166 per cent (from 675 to 1798) the traffic under diesel traction increased by 103 per cent only. Similarly while the number of electric locomotives increased by 93 per cent (from 513 to 988) the traffic under electric traction increased by 61 per cent only.

(b) The extent of utilisation of locomotives as measured by their availability for traffic, number of hours worked, net tonne kilometres per engine hour, speed, engine kilometres per engine day etc., showed that the performance levels of both diesel and electric locomotives in 1979-80 and 1980-81 were lower than in 1977-78 or even 1969-70. The deterioration was mainly on account of excessive en route and terminal detentions, waiting for traffic, idling in sheds, etc.

(c) The time taken for maintenance and periodical overhaul was excessive resulting in locomotives remaining out of commission for periods ranging from 1 month to 18 months in the case of diesel locomotives and from 1 month to 70 days in the case of electric locomotives. Further, the creation of facilities for maintenance had not synchronised with the introduction/addition of locomotives resulting in inadequate maintenance. The maintenance and repair schedules had also not been observed resulting in increased failures of engines.

(d) A large number of diesel locomotives had been detained in sheds and workshops for 'want of materials' for periods ranging from 1 month to 18 months. Similarly, on account of frequent failure of traction motors and non-availability of replacements, several electric locomotives had suffered detentions on the Northern, South Eastern and Western Railways for periods ranging from 1 month to 9 months in some cases.

(e) Diesel and steam locomotives continued to be deployed in electrified sections on account of non-electrification of short links and non-elimination of change of traction resulting in additional operating costs.

(3) Steam Locomotives

(a) The number of steam locomotives taken off the line was not in keeping with the reduction in traffic under steam traction, resulting in more expenditure on operation and repairs and maintenance of steam locomotives.

(b) Though there was reduction in the number of over-aged locomotives, the utilisation of locomotives as indicated by the hours of availability had deteriorated.

(c) The indices of utilisation of steam locomotives used for shunting purposes also showed deterioration in 1979-80 compared to earlier years.

(4) Fuel consumption

(a) The fuel consumption of diesel locomotives was excessive compared to the norms fixed, mainly on account of non-observance of instructions issued by the Railway Board. On several Railways, particularly Eastern and Northern, 'trip rations' for diesel oil consumption had not been laid down: where laid down the consumption was found to be excessive in relation to the 'trip rations' but the excesses had not been investigated.

(b) Norms for shed consumption of diesel oil for maintenance of locomotives had not been laid down on the Central and Southern Railways; where such norms had been laid down on the Northern and South Eastern Railways, they had not been observed resulting in excessive consumption.

(c) The coal consumption by goods locomotives per 1000 GTKM had increased from 58.9 Kgs. in 1969-70 to 91.0 Kgs.

in 1980-81. In aggregate terms, while the traffic under steam traction decreased by 51 per cent between 1969-70 and 1980-81 the coal consumption decreased by 27 per cent only. The major causes were excessive detentions in sheds and yards, drop in average load per train and in speed, increase in engine failures, etc.

5. Utilisation of weighbridges

5.1 Weighment of wagons at the booking end is necessary not only to calculate the correct freight charges recoverable but also to guard against overloading of wagons which could result in loss of revenue and also be a safety hazard on account of risk of breakage of bearing springs, etc.

5.2 The existing rules in the Commercial Manual provide that the goods offered for transport in wagon loads*, in loose* condition or in bags/bales not of uniform size which cannot be weighed on ordinary weighing machines, should be weighed at the weighbridges of the forwarding station if it has one, and if not, at a convenient weighbridge en route or at the destination station. It is the responsibility of the station staff to ensure that the wagons are loaded upto the permissible carrying capacity (CC) and adjust the overloads evenly in underloaded wagons. If weighment facilities are not available, excess and uneven loads are to be checked and adjustment of loads made after visual inspection etc. The rules also provide that when consignments could not be weighed at the forwarding stations, the relative invoices should be marked as 'Senders weight accepted' and that the consignments should be invariably weighed en route or at the destination stations, and the weighment advices sent to booking and destination stations and Traffic Accounts Office. The rules also require the commercial inspectors to re-weigh 5 outward and 5 inward wagons at stations having weighbridges, during their inspections to be conducted at specific intervals (Quarterly).

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*97 per cent of total goods traffic consists of wagon load consignments. Loose goods comprise coal, sand, stone, iron and steel, timber, etc.

@A detailed note was issued to the Ministry of Railways (Railway Board) on 30th October 1981; its reply is awaited (February 1982).

As the Railways could not provide weighment facilities at all the loading points due to financial constraints, private parties offering bulk traffic in wagon loads were encouraged (since 1925) to install their own weighbridges at their sidings by grant of suitable rebate in freight. The working of the private weighbridges is checked by Railway staff periodically to ensure correct weighment in accordance with the rules referred to above and in case of sidings offering substantial traffic, e.g. washeries of steel plants and collieries of Coal India Ltd., Railway Commercial Clerks are posted to record weighment of goods and prepare invoices and the cost of such staff is borne by the siding owners.

There are in all 6,685 goods booking stations on Indian Railways and 426 weighbridges of capacity varying from 16 tonnes to 100 tonnes. A survey made by the Railway Board in 1976 of the availability of weighbridges at major stations where the goods earnings were more than Rs. 75 lakhs per annum had disclosed that there were in all 157 such stations on the nine zonal Railways. While all such stations on the Eastern (28) and South Eastern (42) Railways, (which together account for 60 and 37 per cent of the originating traffic and goods earnings respectively of the Railways (1980-81), had adequate number of weighbridges, those on the other Railways lacked such facilities. As many as 12 such stations on Central, 7 on Northern, 6 on North-eastern, 7 on Southern and 13 on Western Railways had not been provided with weighbridges.

A review by Audit of the use of these weighbridges as well as those installed at other stations on the Zonal Railways disclosed that these were poorly utilised for ensuring correct weighment as also health of the wagons. Nearly 144 weighbridges were overaged* and many could not be used due to improper location, being out of order and other reasons.

*Normal life of weighbridges : 20 years.

5.3 Railway-wise position of working and utilisation of the weighbridges is given below :

(a) Eastern Railway

The major items of wagon load traffic are coal (76.5 per cent) and iron and steel (5.8 per cent). Besides 35 Railway weighbridges, the Administration utilises 22 private weighbridges, of which 12 are overaged. During 1980-81, 19.6 per cent of the wagons loaded on this Railway were stated to have been weighed*. The amount of rebate paid for weighment of wagons to the private weighbridge owners from April 1967 to March 1981 was of the order of Rs. 72.25 lakhs. The following points were noticed during test check :

(i) 13 weighbridges each of 100 tonnes capacity were installed between 1964 and 1976 at important Railway coal (depot) yards** which receive loaded rakes from the colliery sidings of Asansol, Jharia and Karanpura coal fields and despatch them onwards. Many of the collieries served by these yards already had their own weighbridges. Even after the Railways installed their own weighbridges, weighment of coal rakes continued to be done on the weighbridges of the collieries (on payment of rebate) and not on the Railway weighbridges. Further, even where weighment of coal rakes had not been done at the private weighbridges, alternative arrangements to get the rakes weighed on the Railway weighbridges had not been made vide instances given below :

The private weighbridge of the Patherdihi washery, used for weighing wagons loaded from the washery, was out of order from March 1979 to January 1980. Though there was a Railway

*Actually 4,78,785 wagons were sent for weighment, of this 3,54,505 wagons were only weighed.

**Andal (3), Barkakana (1), Sitarampur (1), Kusunda (1), Phusro (1), Ray (1), Patherdihi (1), Patratu (1), Katrasgarh (1) and Asansol (2).

weighbridge at Patherdihi*, the coal wagons were moved out of the yard without weighment during this period.

A test weighment of these (unweighed) coal rakes moving from this yard was carried out by the Railway on the Railway weighbridge in October 1979, which showed that in about 28 per cent of the wagons booked, loading in excess of permissible capacity was detected to the extent of 3 to 9 tonne per wagon. On the basis of this sample of overloading detected in October 1979 the loss of freight to the Railways on 25587 wagons booked without weighment during March 1979 to January 1980 would be Rs. 5.77** lakhs.

(ii) Similar test weighments carried out every month by the Railway from April 1976 to July 1981, at the instance of the Director, Movement, Railway Board, of the coal wagons moving from Asansol, Jharia and Karanpura coal fields through the coal yards having weighbridges referred to above, showed continuous overloading of coal wagons; the extent of overload per wagon ranged from 1 tonne to 16 tonnes in case of box wagon and from 1 tonne to 4 tonnes in case of ordinary four wheeler wagons. While the test weighments constituted 36 to 40 per cent of the number of wagons loaded every month, the number of overloaded wagons detected varied from 13.3 to 43.1 per cent of the number test weighed indicating overloading on a wide scale resulting in loss of considerable freight earnings to the Railways. Besides, there would also be loss*** due to breakage of springs and consequent operational difficulties.

In the above test weighments, cases of underloading of coal wagons had also been detected to the extent of 12 to 52 per cent of the number test weighed indicating under-utilisation of the available transport capacity.

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*A station with goods earnings of over Rs. 75 lakhs per year and Coal loading of over 2.25 lakh tonnes a month.

**Estimated by Audit.

***c.f. Para 3 of annexure to para 1 of the Advance Report of the Comptroller and Auditor General of India for the year 1979-80, Union Govt. (Rlys).

The above cases would also indicate the failure on the part of the consignors as also the staff of the Railways supervising the loading operations and invoicing to observe the extant rules and procedures.

(iii) Further, no weighbridge facilities exist at 21 intermediate/en route stations wsere work trains hauling wagon loads originating from way side stations are formed. Eight other stations have a weighbridge, but wagon load consignments are not weighed thereon owing to it being old, out of order, inconveniently located from the operating point of view, etc.

(b) South Eastern Railway

The major items of wagon load traffic are coal (33.2 per cent) and iron and steel, both raw materials and finished products (34.6 per cent). Besides 46 railway weighbridges, the Administration utilises 32 private weighbridges, of which 4 are overaged. The following points were noticed during test check :

(i) 19 weighbridges each of 100 tonnes capacity were installed between 1964 and 1976 at important coal yards* and en route stations*. In as many as 6 stations** out of these, the collieries have also their own weighbridges.

Test weighment by the Railway during July 1981 of coal wagons moving out from Adra and Talcher coal fields disclosed overloaded wagons to the extent of 33 per cent and underloaded wagons to the extent of 36 per cent of the number of coal wagons test weighed, which itself was 6.3 per cent of the number of wagons loaded.

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*Barbil, Banspani, Barajamda, Dongaragarh, Bondamunda, Manoharpur, Birmitrapur, Jharsuguda, Bhojudih, Bhaga, Mohuda, Radhanagar, Murulidih, Sudamdih, Talcher, Sahdol, Chipurupalle, Manendargarh, Bilaspur.

**Bhojudih, Bhaga, Radhanagar, Mohuda, Murulidih, Sudamdih.

(ii) The private washeries of Tata Iron & Steel Co. (Jamadoba and Naomundi) and Hindustan Steel Co. (Bhojudih) receive coal from the above collieries via the Bhaga, Mohuda and Bhojudih yards (average lead 27—30 km). However, the rakes were weighed only at the destination on the weighbridges of the washeries (though close to the Railway weighbridges in the above yards and getting monthly rebate payment of Rs. 15,000) on the ground that the Railway weighbridges in these yards were not conveniently located. The weighment having been done only after the rakes had completed their trips, no adjustment of loads to safeguard the wagons from damage due to overload was possible. Though there were railway weighbridges at intermediate/en route stations (Jharsuguda and Sahdol), these were hardly utilised for weighment purposes, again due to their inconvenient location. The number of wagons weighed on the Railway weighbridges was only 10.42 per cent of the total loaded on the South Eastern Railway. The question of resiting the Railway weighbridges at convenient locations from the operational point of view does not seem to have been considered (December 1981).

(c) Central Railway

The Railway has in all 48 weighbridges of which only 31 (including 15 overaged) are used for weighment of goods, the rest being for departmental use. Of the 19 stations with annual goods earnings of over Rs. 75 lakhs each, weighbridge facilities exist (1981) at 7 stations only.

The 100 tonne capacity weighbridge at Wadibunder, a major goods terminal, weighed on an average only two wagons a day during 1980-81. The weighbridges at Bhusawal (60 tonne), Solapur (32 tonne), Jhansi (100 tonne) and Nishatpura-Bhopal (60 tonne) were also being used very sparingly (average number of wagons weighed per day ranged between 0.25 and 1.69 in 1980-81) due to their being inconveniently located. The four weighbridges at other intermediate/en route stations such as Nagpur, Balharshah, Wardha and Agra Cantt. were also not in

use. At New Katni, the underground parts of the weighbridge (installed in July 1968 at a cost of Rs. 1.36 lakhs) remained submerged due to seepage of subsoil water into the weighbridge pit putting the weighbridge out of commission particularly during monsoon. The number of wagons weighed at this station during May 1977 to April 1979 was only 240 averaging 0.39 wagon per day.

(d) Northern Railway

The Railway has in all 55 weighbridges of which 17 are overaged. However, out of 15 stations with goods earnings of over Rs. 75 lakhs each, weighbridges were available only at 8 (December 1981). During 1980-81, 38,232 out of 8.48 lakh wagons loaded on the Railway (i.e. 4.5 per cent only) had been weighed on the Railway weighbridges.

(c) North Eastern Railway

The Railway has in all 20 weighbridges of which 6 were not in use during 1980-81, being out of order (4) and surplus awaiting shifting (2) etc. The 50 tonne capacity weighbridge at Gorakhpur has been out of order since June 1974. Of the eight stations on this Railway with annual goods earnings of over Rs. 75 lakhs (six) do not have weighbridge. During 1980-81 24,127 wagons were weighed on the Railway weighbridges, being 5.9 per cent of the total wagons loaded on the Railway. At Tanakpur where 50 tonne weighbridge was provided in June 1960, 3,102 wagons out of 5989 wagons loaded were weighed (*i.e.* 52 per cent), indicating better utilisation as compared to other stations.

(f) Northeast Frontier Railway

Against 5 stations with annual goods earnings of over Rs. 75 lakhs each, there were nine weighbridges including two

of 100 tonne capacity, each located at New Jalpaiguri (BG) and New Gauhati (MG). The weighbridge at New Jalpaiguri has been out of order since January 1975 and consequently BG wagons marked for en route weighment could not be weighed at this station. A test weighment conducted by the Railway in 1978 of 9 BG wagons carrying bamboo chips for a paper mill at the mills weighbridge showed that the loaded box wagons weighed on an average 290 quintals against the minimum chargeable weight of 275 quintals.

As regards the weighbridge at New Gauhati (installed in 1968), capacity of 100 tonne was not necessary since the gross weight of MG wagons varies from 25 to 55 tonnes only. This weighbridge also remained out of order from April 1977 to March 1980. Weighbridges (of lower capacity) installed at four other MG stations also could not be put to use either due to operational difficulties (improper location etc.) or due to their remaining out of order.

During 1980-81, 15,178 wagons accounting for 5.5 per cent of the total wagons loaded on the Railway only were weighed.

(g) Southern Railway

The Railway has in all 74 weighbridges of which 46 are over 40 years old and 15 over 20 to 40 years old. Further out of 12 stations with goods earnings of over Rs. 75 lakhs each, 7 were without a weighbridge (December 1981).

At Salt Cotaurs, a major goods terminal at Madras, contributing annually earnings to the extent of Rs. 671.13 lakhs (1979-80), on an average 2590 wagons were received and 2526 wagons despatched every month in that year. Of these 60 per cent required initial or test weighment (i.e. being consignments booked on 'Senders weight', minimum weight condition basis, etc.), but only 25 to 30 wagons per month were weighed, though four posts of Commercial Clerks were operated for the purpose. No weighment had been carried out in respect of the outward

loads which were marked for weighment at the destination, freight being charged on the senders weight or the minimum weight prescribed. A 100 tonne weighbridge provided at Royapuram since 1967 was out of order from June 1976 resulting in non-weighment of wagons and non-utilisation of Goods Clerks posted for the purpose.

Weighbridges installed in important marshalling yards and en route stations such as Tondairpet, Erode, Jolarpettai, Shoranur, Bangalore City, Yeshwantpur, Katpadi, Harihar, Arakkonam and Villupuram Tiruchchirappalli (3 weighbridges) and Baiyappanahalli weighed during 1980-81, 16701 wagons out of 70519 wagons loaded/received by them which were all required to be weighed being on sender's weight basis or on minimum weight condition basis etc.

(h) South Central Railway

The Railway has in all 57 weighbridges of which 31 are overaged (1980-81). Out of 11 weighbridges at (10) major stations, 8 were owned by the Singareni Collieries; rebate of Rs. 26.22 lakhs had been paid to the collieries during 1967—1981 as against the capital cost of the weighbridges of Rs. 22.30 lakhs.

The weighbridges at en route stations such as Kazipet (70 tonne), Rajahmundry (100 tonne) and Bellampalli (45 tonne) had not been used except for weighment of a negligible number of wagons (Nil at Bellampalli, weighbridge being out of order, 10 at Kazipet and 153 at Rajahmundry in 1980-81) due to their improper location, being old, out of commission, etc. No weighment had been done on 28 weighbridges eight of them being out of commission. The number of wagons weighed was only 1.1 per cent of the total number loaded on this Railway during 1980-81.

The question of resiting the existing (working) weighbridges at locations convenient from the operational point of view and at stations where no weighment facilities existed had not been considered.

(i) Western Railway

The Railway has in all 82 weighbridges. Of the 22 stations with annual goods earnings of over Rs. 75 lakhs each, 13 did not have a weighbridge. The weighbridges at Carnac Bridge (one 100 tonne and one 50 tonne), Bandra marshalling yard (100 tonne), Udhna Yard (50 tonne), Anand (50 tonne), Bhavnagar Bunder yard (60 tonne), Botad (60 tonne) and Kandla Port (BG) (100 tonne) were out of order since September 1975, February 1979, April 1979, May 1978, June 1979, December 1979 and December 1978 respectively (September 1981). One 25 tonne MG weighbridge at Ratlam was also out of use from August 1978.

The number of wagons weighed was 25,699 in 1980-81, being only 3.2 per cent of the total number of wagons loaded on this railway. A review of one of the major station with a 100 tonne weighbridge *viz.* Kankaria (Ahmedabad) revealed that during 1980-81, the weighbridge was out of order for 101 days, during the rest of the period it was used to weigh only 613 wagons *i.e.* just 2 wagons a day on an average even when it was working. The loss incurred by the Railway due to non-weighment of wagons at this station during 1980-81 is estimated in audit at Rs. 15.61 lakhs.

5.4 *Weighment of containers*

The container service, first introduced in 1966 offers the facility of safe transport of goods, generally of high rated commodities, from the premises of the consignors to those of the consignees without any handling at the goods sheds. Each container has a carrying capacity (CC) of 4.5/5 tonne and six such containers are transported together in a specially designed flat. The service is in operation between 16 points (1980-81) and the fleet of containers has increased from 30,329 in 1974-75 to 43,649 in 1980-81. Freight on container traffic is normally charged on the basis of the 'senders weight' or on the CC of the container, since it is, as a rule, not weighed. Under the freight forwarder scheme, the freight forwarder collects small consignments from customers and offers a full container load for rail

transport. Such containers are also not subjected to weighment at any stage. In both cases, the possibility of overloading of the containers and the Railways losing revenue, cannot be ruled out, particularly in the case of heavy density commodities like edible oils (in packed tins etc.), since it is known that containerised traffic is not subjected to weighment.

A review by Audit in October 1981 disclosed that a limited check on weighment of the containers had been carried out only on the Western Railway during the period April 1974 to March 1978. It showed that, out of 29,876 containers booked from Carnac Bridge (Bombay—Western Railway) during this period, only 86 had been weighed (hardly 0.3 per cent) revealing excess weight in as many as 43 containers (*i.e.* 50 per cent). The amount of undercharges recovered in respect of the overload containers was, however, not available on record. During the subsequent period of 3 years (April 1978 to March 1981), when 23,990 containers were booked from the same station, none had been weighed.

In respect of inward containers, during the 7 year period from April 1974 to March 1981 only 62 out of 32,524 containers were weighed (0.2 per cent) before effecting delivery. Of these (*i.e.* 62), 25 containers (40 per cent) were found excess loaded and an undercharge of Rs. 5,588 was recovered. Assuming that the trend of over-loading and recovery of undercharge would be of the above order, the extent of loss of earnings due to non-weighment of inward containers alone (32,462) would be of the order of Rs. 29.25* lakhs for the period April 1974 to March 1981.

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*Computed by Audit as under :

No. of containers not weighed	—	32462
No. of containers weighed	—	62
No. of containers overloaded	—	25
Amount of undercharges recovered	— Rs.	5588
Loss due to non-weighment	$= \frac{5588}{62} \times 32462$	
	= Rs. 29.25 lakhs.	

5.5 *General*

(1) In the case of certain commodities (*e.g.* cotton seeds, plywood, tobacco, gur, sugar-cane, etc.), the freight charge is subject to a minimum weight condition. This is fixed on the basis of the average of the weight obtained on test weighment made at the time of fixing the weight condition and the weight for charge so fixed remains inforce for long periods, unless revised due to change in loadability of wagons etc. In such cases the weight for charge fixed being generally the mean average of the loadability of the commodity in question, there would be scope for overloading of wagons.

(2) Similarly in the case of petroleum oil product, liquid chemicals, vegetable oils, etc. which constitute high rated traffic moving in bulk in tank wagons, freighting is done on the basis of the marked carrying capacity and the applicable calibration chart and no actual weighment is done. Cases of overloading of tank wagons detected in test weighment were mentioned in para 33 of the Report of the Comptroller and Auditor General of India—Union Government (Railways)—1978-79.

(3) In the absence of weighment at en route or intermediate stations, in the above type of cases the Railways would have no means to detect cases of overloading of wagons by the senders.

As mentioned earlier under individual Railways, out of 426 weighbridges on all the Railways 144 had become overaged by 1980-81 and were frequently out of commission. Further, due to improper location and other operational reasons, a small percentage of the loaded wagons only was getting weighed.

(4) The poor utilisation of the weighbridges especially by the en route stations, was also corroborated by the records of the Traffic Accounts Offices of the zonal Railways which are required to receive weighment advices from the en route weigh-bridge stations, check them with the 'senders weight invoices' received from the forwarding stations and note the undercharges

detected for recovery. The number of wagons weighed* as per such advices varied from just 1.9 per cent on Southern Railway to 24 per cent on the Central Railway of the total wagon load consignments received under 'senders weight' basis during 1980-81. In such cases, most of the wagons would be released without any weighment, freight being charged on senders weight or CC of wagon only.

(5) In this connection, it may be mentioned that box wagons can be loaded (as disclosed during trials conducted at the instance of the Northern Railway in January 1978) upto 62.5 tonne as against the maximum permissible carrying capacity of 58.5 tonne. Similarly, in respect of all other commodities whether booked under minimum weight condition or on 'senders weight' basis in wagon loads or in containers excess loading taking advantage of the tolerance or average minimum weight conditions by the consignors/consignees cannot be ruled out. Besides, despatch of overloaded and underloaded wagons (in cases of coal) continued even in December** 1981, as seen from the reports of Director, Movement (Railways), Calcutta to the Railway Board.

5.6 *Higher rebate to owners of private weighbridges*

In October 1981, the Railway Board issued instructions raising the rebate to owners of private weighbridges from Re. 0.10 to Re. 0.20 per tonne subject to a ceiling of 13 per cent per annum of the capital invested.

The Railways, especially Eastern, South Eastern and South Central, have, however, yet to work out the mode of better utilisation of the existing available weighment facilities (railway or private) at the same or nearby stations by proper coordination.

5.7 *Inmotion wagon weighbridges*

Since August 1973, the Railway Board had been considering the installation of electronic weighbridges for faster weighment

*Director, Movement (Railways) on monthly (Coal) loading review for December 1981.

**Railwaywise details in Annexure XIV.

of wagons while in slow motion (4 to 5 km per hour) at important marshalling yards. While two inmotion wagon weighbridges capable of faster weighment, without electronic devices for weight print out etc., were installed in 1975 at Andal and Patratu yards, their extended application does not seem to have been considered. Developmental orders for two electronic weighbridges with facilities for print outs etc. were placed by the Railways, one in August 1979, for installation at Ramagundam on South Central Railway and the other, in November 1980, for installation at Hapa on Western Railway. These weighbridges are, however, yet to be commissioned (December 1981).

5.8 *Summing up*

— There are 6,685 goods booking stations on the Indian Railways, but the number of weighbridges available for weighment of wagon load consignments was only 426. Of these, 144 weighbridges were overaged, the maximum number being on Southern Railway (61), followed by South Central Railway (31).

— Of the 157 major stations with goods earnings of over Rs. 75 lakhs per annum each on the Indian Railways, 40 including 12 on Central and 13 on Western Railway had no weighbridge at all for weighment of wagons.

— Despite availability of adequate number of weighbridges on the Eastern and South Eastern Railways, a substantial proportion of coal wagons were found, during test weighment, to be overloaded and a safety hazard with scope for damage to the wagons and loss of revenue to the Railways.

— Though the rules provided that all goods in wagon loads should be weighed at the forwarding, en route or destination station, only a very small percentage ranging from 1.9 to 24 of such wagons were found to be weighed. Even the limited weighment facilities

available were not fully utilised due to inconvenient location of weighbridges at the terminals and en route stations or other operational reasons or the weighbridges being out of order for long periods, indicating bad planning and/or poor maintenance and repair facilities.

— The traffic in containers has been going without weighment though test weighment of a small percentage (0.3 per cent) of the traffic on Western Railway had disclosed overloading to the extent of 30 to 40 per cent.

— The location of the Railway weighbridges as also their utilisation had not been properly coordinated with the private weighbridges with a view to their supplementing each other.

— The progress in installation of non-electronic inmotion wagon weighbridges had been very slow ; as regards electronic weighbridges though proposals were mooted first in August 1973, developmental orders therefor were placed only in August 1979 and November 1980 and they are yet to be supplied/ installed (December 1981).

6. **Manufacture of motor (moped) trolleys in Railway Workshops**

Push trolleys manned by four trolleymen (Grade 'D' staff) are used by Railway engineers for inspection of track and signal equipments.

During 1975, the Western and the South Eastern Railways conducted trials with motor (moped) trolleys of lower range horse power (0.5 to 1.7 horse power) to replace push trolleys with the twin objectives of effecting economy in man power and speeding up inspection work. While the trials on the South Eastern Railway were with engines of 1.5 to 1.7 horse power

which were cleared by the Research, Designs and Standards Organisation (RDSO) in September 1976, the trials on the Western Railway were with engines of 0.5 to 1.7 horse power which had not—and have not yet been cleared by RDSO (December 1981)—as technically suitable. However, in February, March and November 1976, based on these trials on the Western and the South Eastern Railways, the Railway Board issued instructions to the zonal Railways for use of light motor trolleys and simultaneously, placed an order on the Central Railway Workshop at Byculla to undertake manufacture of 100 such trolleys fitted with 0.5 and 1.7 horse power engine.

Earlier during 1958 to 1962, the Ministry of Railways (Railway Board) had got manufactured 160 motor trolleys powered by low horse power engines (1.5 to 1.7 horse power) after consultations with RDSO, at a cost of Rs. 7.5 lakhs, and put them in service on the various zonal Railways, but these had been found unsuitable, especially in gradient sections, due to the engines being found weak and the design unsuitable*. Neither the Railway Board nor the Railways connected their experience with these trolleys in gradient sections while issuing instructions in November 1976, as referred to above, for manufacture of light motor trolleys.

Besides Central Railway (100), the North Eastern (37), Western (18) and Eastern (8) Railways also undertook manufacture of such light motor trolleys in their workshop pursuant to the Railway Board's instructions of 1976. The trolleys (184)** manufactured at a cost of Rs. 11.52 lakhs were allotted to zonal Railways during 1976 and 1977. According to the Railway Board (November 1976), their use was expected to save nearly Rs. 4,500 per trolley per annum in maintenance cost through surrender of one trolleyman (Grade 'D' staff).

*This was also commented upon in para 35 of the Railway Audit Report, 1968.

**Number of motor (moped) trolleys ordered in 1976 were 163; however 184 were manufactured during 1976 and 1977 as stated by the Ministry of Railways (Railway Board) in January 1982.

Reports on the field performance of the trolleys, received from all the zonal Railways by the Railway Board during October 1977 to April 1978, indicated that these were unsuitable for track inspections, particularly for checking track alignments. The design of the engine as also of other components was found to be weak and needing improvement; (for example, the springs of the trolley were found to be very delicate, the chain slipped and broke frequently, the engine became very hot quickly and failed, the trolleys did not work smoothly on rising gradient of 1 in 150 and above, if it stalled on gradient section it could be restarted on pushing up only, etc.). No reduction in man-power could also be achieved as two men were stated to be required for front and rear watch out on curves, in deep cuttings, etc. while an additional hand was required for lifting the trolley off the track and for loading into trains when necessary.

During 1977 to 1979, no further orders for manufacture of motor trolleys were placed on Railway workshops on the consideration that the use of such trolleys on trunk routes with dense and fast traffic with diesel and electric traction, needing line clear, was not easy. The Railway Board also reconsidered (January 1980) the utility of motor trolleys in the context of the need to carry out inspection of track at slow speeds to ensure thoroughness of checks on gradients, curves, etc. and directed (April 1980) the Railways to submit detailed reports on the operational and economic aspects of these trolleys as compared to those of push trolleys.

However, in June 1980, the Railway Board, without waiting for the appraisal reports (asked for in April 1980), issued instructions to the zonal Railways to manufacture and introduce light motor trolleys on a large scale with a view to effecting economy in expenditure by surrender of as many as 3 posts of trolleymen for each push trolley replaced.

Keeping in view the experience of the Railways with the working of 160 motor trolleys of 1962-63 and of those (184) manufactured from 1976, Audit enquired (October 1980) of

the Railway Board whether the full implications of the large scale manufacture and introduction of motor (moped) trolleys on the Railways had been considered. The Railway Board thereupon issued instructions to the Railways in January 1981 to stop manufacture of motor trolleys until the economics and performance of these trolleys were evaluated. By that time 93 more trolleys had been turned out (January 1982).

Reports from zonal Railways (August 1980—July 1981) once again confirmed the unsuitability of moped trolleys powered by light engines for track inspection in replacement of push trolleys and suggested that the question of reduction of trolleymen with the use of such trolleys be kept pending till a suitable and well tested design was available. The Railways had not also surrendered, fully or partly, either trolleymen or push trolleys, even in sections where motor trolleys were introduced, in view of the unreliability of the latter.

According to the Ministry of Railways (Railway Board) (January 1982) :

(i) the earlier attempts in the sixties were for bringing out heavy duty motor trolleys for Divisional Officers and these were different from the light motor trolleys/moped trolleys taken up in 1976. These trolleys are now introduced in replacement of push trolleys to remove drudgery of human labour;

(ii) of the 277* light motor trolleys manufactured after 1976, 88 are in use in level sections as per a recent census;

(iii) posts of trolleymen could not be surrendered straightaway as a general measure (except for 47 posts on Central Railway and 8 posts on Western Railway) as these trolleys were under trials.

*Manufactured upto December 1981 as advised by the Railway Board in January 1982.

The Railway Board further stated that (a) instructions would be issued to surrender at least one post of trolleyman for each such trolley in use and (b) the RDSO would review the various designs for a final decision on a suitable design of moped trolley for mass manufacture for replacement of push trolleys.

The following points need consideration :

(i) Though trials conducted in the early sixties had indicated that light motor trolleys (150cc) were not operational, even on sections with gradient 1 : 150, Railway Board, while ordering (1976) the manufacture and allotment of trolleys, did not connect/bring to the notice of the zonal Railways the experience gained earlier.

(ii) Though as many as 277 light motor trolleys were manufactured, only 88 were in use as per recent census. Further, these trolleys were not giving satisfactory performance as confirmed by field performance reports received from the Railways. The design* incorporating these engines had not also been cleared by the RDSO (December 1981).

(iii) Drudgery of human labour was more on gradient sections, on which these trolleys had not been found suitable.

(iv) Though, of the 277 light trolleys manufactured 88 were in use, only 55 posts of trolleymen had been surrendered against the norm set by the Railway Board for surrender of at least one post of trolleyman for each light motor trolley in use in place of push trolley.

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*Manufactured by Central, North Eastern and Western Railways with 0.35 to 1.7 horse power engine.

CHAPTER III

PURCHASES AND STORES

7. Railway Board—Centralised purchase of stores

Introduction

Under the extant procedure, purchases of rolling stock components, etc. and also such other items as were off-loaded (November 1974) to the Railways by the Ministry of Supply and Rehabilitation are arranged by the Ministry of Railways (Railway Board) with a view to ensuring economy through bulk procurement. Direct purchase by the zonal Railways of the articles scheduled for centralised procurement is not ordinarily permissible, except in emergent circumstances.

A test check in audit of the tenders and contracts finalised (1977—1980) by the Ministry of Railways (Railway Board) revealed the following :

(i) *Roller bearing axle box*

Against limited tender enquiry (September 1978) for procurement (432 nos.) of roller bearing axle box (RBAB) of 22.9 tonne for BWT/A wagons, a single offer (Rs. 9,220) was received from an indigenous firm 'A'*. On the ground that the item was being purchased indigenously for the first time, the Tender Committee of the Ministry of Railways (Railway Board) assessed

*The fixation of prices of 20.3 tonne RBAB for BOX/BCX/CRT wagons purchased (1974-75) from the same firm had been commented on in paragraph 10 of the Report of the Comptroller and Auditor General of India for the year 1978-79—Union Government (Railways).

(June 1979) its price by updating the landed cost (Rs. 2,200) of imported (September 1971) 22.9 tonne RBAB for BWT/A wagons in the proportion of the price allowed to the same firm in October 1977 for 20.3 tonne RBAB for BOX/BCX/CRT wagons to the corresponding price of December 1970, further stepped up by 13 per cent to cater for development costs involved in initial manufacture, likely escalations in the prices of raw material inputs, etc. during execution of the contract. The price per unit so worked out, *viz.* Rs. 6,000, when counter offered during negotiation (July 1979), was accepted by the firm (against its original offer of Rs. 9,220) and formal contract (value : Rs. 25.92 lakhs) was awarded in August 1979.

It was seen, however, that the Tender Committee had not taken into account the following aspects in settling the price :

(a) 22.9 tonne RBAB for BOY wagons had been purchased from the same indigenous firm under a development order (400 nos.) of December 1971, followed by bulk order (9,600 nos.) in April 1972, at the price of Rs. 1,605 and Rs. 1,530 per unit respectively, the lower price for the latter order being justified on grounds of substantially larger quantity compared to the earlier one which, on the other hand, included an element for all development costs.

(b) The price allowed for RBAB of BOY wagons in both the orders (December 1971 and April 1972) had been justified by comparison with the fob price (Rs. 1,500) of imported (September 1971) 22.9 tonne RBAB for BWT/A wagons, though slightly different in dimensions.

Had the price for BOY bearing in the contract of December 1971 (based on fob price of imported bearing and including development costs) been taken as the base price, instead of the landed cost of import (September 1971), and escalations allowed

in the proportion of the October 1977 price (Rs. 2,450, valid beyond June 1979) of 20.3 tonne RBAB to the corresponding price of December 1970, the price of BWT/A bearing would have worked out to about Rs. 3,844.

The Ministry of Railways (Railway Board) stated (January 1982) that there was no need to consider the previous prices of BOY wagon bearing for price fixation of BWT/A bearing because the latter was different in design and dimension and necessitated about 13 per cent fresh inputs by way of engineering/ design/cost/tooling, jigs and fixtures.

It may, however, be mentioned that on an earlier occasion the price settled (1959) for 20.3 tonne RBAB for BOX/BCX/ CRT wagons had been allowed (to the same firm) for the first order (1959) for 16.3 tonne RBAB for TPR/TORX wagons, though the design of the latter, while being smaller in overall dimension, was stated to involve more machining and welding as also use of heavier components compared to 20.3 tonne RBAB. Again, in July 1972 the price allowed for 20.3 and 16.3 tonne RBAB was the same, despite the variations in the design and dimensions. In the present case, however, the feasibility of adoption of the BOY wagon bearing price, with due allowance for the additional inputs (13 per cent) on account of different design and dimension of BWT/A bearing had not been explored; with the additional inputs the price would have worked out to about Rs. 4,340 as against Rs. 6,000 allowed in August 1979, the difference working out to Rs. 7.17 lakhs for the order. It might be mentioned in this connection that firm 'A' is the only established manufacturer of RBAB in India.

(ii) *Carriage fans*

Against a tender enquiry (February 1976) for procurement of carriage fans (300/400 mm sweep) to cover the Railways, requirements during 1977, prices ranging between Rs. 180.50 and Rs. 207 each were found to have been quoted (October 1976)

by firms which had accepted varying rates of Rs. 144 to Rs. 203 for direct purchases between February and December 1976 by the zonal Railways.

On the Tender Committee (of the Ministry of Railways) pointing out the price difference during negotiations (April 1977), firm 'B' of Calcutta, a large scale unit, explained that in view of the stiff competition from small scale manufacturers it had quoted a highly unremunerative price (Rs. 144) against Eastern and North Eastern Railways' tenders so as to secure orders for maintaining production. Likewise, two other firms, in the small scale sector, also maintained that in the face of cut-throat competitive prices quoted by firm 'B', they had accepted extremely low and unworkable rates against the Railways' direct orders just to maintain their production and keep the labour engaged. However, after negotiations these and three other small scale units agreed to reduce their prices to the level of the lowest offer of firm 'B'. In this connection, it was observed that the firm had informed (April 1977) the Ministry of Railways (Railway Board) that its pending orders were to last till mid-May 1977 or so. Thereupon, the prices offered by firm 'B' and agreed to by other firms also were accepted (April 1977), even though these were 25—20 per cent higher than those accepted by these firms for contemporaneous supplies (November 1976/March 1977) to the Eastern and North Eastern Railways (though for comparatively smaller quantities) involving extra expenditure of Rs. 12.28 lakhs for 58,016 fans.

The Tender Committee records did not show that the feasibility of getting lower prices because of much larger order and consequent better utilisation of capacity and labour involving reduced overheads, had been explored.

(iii) *Screw couplings*

The lowest offer (Rs. 225) received against the Ministry of Railways (Railway Board)'s tender (January 1978) for purchase

of screw couplings, when counter offered (March 1978), was accepted by three firms.

After covering a part of the requirements on these three firms based on their capacity and past performance, negotiations were conducted (April 1978) with other firms for the balance requirements. Firm 'C' of Secunderabad (a Public Sector Undertaking) offered a revised price of Rs. 247 exclusive of testing charges at Rs. 2.50 each, the higher price being stated to be due to increase in cost of raw materials and excise duty since the last contract (April 1977).

This was agreed to by the Tender Committee (May 1978) even though the firm had accepted in January 1978 (when the present tender was opened) a price of Rs. 240 per coupling against Eastern Railway's direct orders for 9,000 numbers, involving extra expenditure of Rs. 4.84 lakhs for 50,958 screw couplings. The reasonableness of the higher price demanded* by the firm (in relation to the price of supplies to Eastern Railway) had not been gone into by the Tender Committee despite the still lower price (Rs. 225) received against the tender under consideration and "the cost of product and inputs for the same product produced by different firms is more or less equal" according to the Ministry of Railways (Railway Board).

The Ministry of Railways (Railway Board) stated (December 1981) that :

(1) the prices allowed for carriage fans were 20—25 per cent lower than the prices against DGS&D's running contracts of October 1974 and May 1975;

*A similar case of acceptance of the price increases demanded from to time by a sole supplier of transmission equipment without adequate verification was mentioned in para 9 of Advance Report of the Comptroller and Auditor General of India for the year 1979-80—Union Government (Railways).

(2) Eastern Railway's orders (January 1978) for screw couplings were for smaller quantities to be delivered by May /June 1978, while deliveries against their bulk order were to spread over till March 1979; further the price (Rs. 247) allowed was reasonable considering the variation in economic indices between January and May 1978.

The following points may be mentioned :

(a) The claim of price reduction (20—25 per cent) based on a comparison with the DGS&D's running contracts of 1974 and 1975, ignoring the current rates obtained by Eastern and other Railways, would not appear tenable.

(b) The firm had claimed a higher price (Rs. 247) than that (Rs. 240) of the last contract on the ground of increase in raw material prices etc. since then and not for future escalations for longer delivery period etc. Nevertheless it quoted (January 1978) and supplied couplings at the last contract price (Rs. 240) to Eastern Railway, while some other firms had accepted even a lower rate (Rs. 225) against the contracts finalised by the Ministry of Railways (Railway Board).

(c) The price allowed, as compared to that allowed to other firms, involved price preference computed at Rs. 12.28 lakhs. No price preference for public sector undertakings was envisaged as per government of India (Bureau of Public Enterprises) decision July 1977.

The contracts were on firm price basis, reserving the purchaser's right to increase/decrease the quantity by 25 per cent during their currency at the same price, terms and conditions. On

the Ministry of Railways (Railway Board) placing (February 1979) an order for 12,009 couplings under the option clause of the contract, firm 'C' demanded a higher price of Rs. 300. Though contractually and legally the firm was bound to execute the order at the contract price, taking a broad administrative view the Ministry of Railways (Railway Board) decided (June 1979) to allow *ex gratia* payment of Rs. 53 per coupling over and above the contract price (Rs. 247) mainly on the following considerations :

(1) After placement (May 1978) of contract, raw material prices had gone up by about 48 per cent due to higher rates of excise duty and freight announced in the Budget (February 1979) and the post budgetary (April 1979) price increase for steel items.

(2) The deliveries against the order of February 1979 would spread over April to June, *i.e.* beyond the contract period (March 1979).

(3) Suppliers for this item being limited, it would not be in the interest of the Railways to discourage this major dependable supplier.

(4) With the *ex gratia* payment the effective price would still be lower than Rs. 305 negotiated for the 1979-80 contract.

Later, firm 'D' (a State Government managed sick unit), which had accepted a lower price (Rs. 225), also asked (July 1979) for an increase of Rs. 81 mainly on grounds of rise in the cost of materials and other inputs. Taking into account the expiry date (November and April 1979) of delivery against the orders on firm 'D', steel billet price increases (June 1978 and between January —April 1979) as also all round rise in the price of furnace oil and other items including wages, the Ministry of Railways (Railway Board) allowed (July 1979) to firm 'D' an *ex gratia* payment of Rs. 28 per coupling (including Rs. 8 to

cover increase in excise duty). In relation to the price increase allowed to this firm (Rs. 20, net of excise duty) the price increase of Rs. 53 per coupling allowed to firm 'C' appeared excessive and involved extra expenditure of about Rs. 3.95 lakhs.

The Ministry of Railways (Railway Board) stated (January 1982) that :

(1) The question of price preference to firm 'C' did not arise as the lowest price (Rs. 225 received against the tender could not be considered as workable and established. One of the three firms, which had accepted Rs. 225, later asked for price increase and the contract had to be cancelled at its risk and cost, while the remaining two firms (firm 'D' and another which had faced a ban from DGS&D and some Railways for earlier default in supplies) had possibly quoted a low rate in order to recommence production/to have a re-entry for supply of this item ;

(2) Ex gratia payment could not be uniform and would vary depending on the delivery period, supply within that period and dates of increases in price of inputs and hence the difference in quantum of payment to firms 'C' and 'D'. The ex gratia payment of Rs. 53 to firm 'C' resulted in a saving to the Railways since for the subsequent tender for over 30,000 nos. it agreed to maintain the negotiated price (Rs. 305), even though a higher rate (Rs. 365) had been demanded by it before the Ministry of Railways (Railway Board) could decide on the original offer (Rs. 315) within the validity period.

However, the following points are relevant :

(1) The lowest price (Rs. 225) received against the tender was not considered (March 1978) unwork-

able by the Ministry of Railways (Railway Board), who, on the contrary, had counter offered it to all the firms. The unworkability of the lowest rate as contended in January 1982 should also be viewed in the context of the facts that while in the case of one firm the contract was cancelled for supply in default at its risk and cost, another firm executed the contract at the lowest rate, and firm 'D' did not ask for any increase in the accepted price (Rs. 225) till (July 1979) ex gratia payment was allowed (June 1979) to firm 'C'.

(2) Against subsequent contracts (March 1979) a uniform ex gratia payment had been allowed to firm 'C' and others, even though the extent of their supplies during the contract delivery period varied. Regarding the contention that the ex gratia payment of Rs. 53 had resulted in firm 'C' withdrawing its revised offer (Rs. 365) and accepting the negotiated price (Rs. 305) for the subsequent contract it may be mentioned that Rs. 306 less 1 per cent discount had been accepted by another firm which had executed the previous contract at a lower rate (Rs. 225) without any ex gratia increase. As the input and production costs for the same item produced by different firms are more or less the same according to the Ministry of Railways (Railway Board), the higher ex gratia payment allowed to firm 'C' for the order of 12,009 couplings lacked adequate justification.

(iv) *Train lighting cells*

The contracts (November 1977) with firms 'E' and 'F' of Calcutta, selling agents of the manufacturing firm 'G' also at Calcutta, for supply of Train Lighting (TL) Cells, stipulated

inter alia that sales-tax, if legally leviable, at the rates ruling at the time of supply, as applicable to sales made to Central Government Departments, subject to statutory variation, would be to the account of the purchaser.

On amendment (March 1978) of the West Bengal Finance (Sales Tax) Act, 1954, sales tax on TL Cells became payable, (from 1st April 1978), at the first point of sale, instead of the second point as hitherto, resulting in the firms 'E' and 'F' becoming liable for payment of State sales tax (irrespective of the consignees being within or outside West Bengal) to the manufacturer. Consequent on this change, the firms represented (April 1978) to the Ministry of Railways (Railway Board) their difficulties in absorbing the State sales tax (13.2 per cent) payable in respect of consignees outside West Bengal and proposed (April—July 1978) certain amendments to the contracts with a view to enabling them to procure TL Cells from the manufacturer on payment of Central sales-tax (4 per cent) and getting reimbursement thereof from the Railways.

The legal opinion was that the Railways were not contractually and legally liable to reimburse the sales tax payable by the contractors to the manufacturer at the first point of sale, since the latter, and not the former, would be assessed for tax by the sales tax authorities. However, on grounds of equity so as not to deny to the suppliers a statutory levy, the Ministry of Railways (Railway Board) negotiated (August-September 1978) with the firms the possibility of assigning the contract to the manufacturer and also for their passing on the benefit, in full or part, of the lower wholesale price of the manufacturer to the Railways. While not agreeing to assign the contract to the manufacturer on grounds that its accounts had been closed (August 1978), however, firm 'E' made (October 1978) a lumpsum offer of Rs. 28,000 and asked for amending the contract price to include the sales tax element. Firm 'F' also asked for similar amendment, offering a lumpsum payment of Rs. 5,000.

Later, on the firms' offering (May 1979) to absorb 50 per cent of their tax liability to the manufacturer in respect of despatches made after 1st April 1978, the Ministry of Railways (Railway Board) conceded (July-August 1979) their demand for refixation of the contract prices inclusive of Central and State sales taxes at 4 per cent and 13.2 per cent respectively for supplies and within West Bengal.

The enhancement of the contract prices, which were to remain firm except for escalation in lead and antimony prices, resulted in the Railways incurring an extra liability of Rs. 3.38 lakhs for which they had no legal and contractual obligation. Had the contracts been assigned to the manufacturer, as proposed at one stage by the Ministry of Railways (Railway Board), the Railways' tax liability (Rs. 6.76 lakhs) would have been more than offset by the benefit, in full or part, of over Rs. 18 lakhs on account of lower wholesale price in respect of the supplies after 1-4-1978.

The Ministry of Railways (Railway Board) stated (December 1981) :

(1) Change in the stage of levy of sales tax had cast a heavy burden on/would have caused a loss to the contractors *vis-a-vis* other suppliers.

(2) Assigning the contract to the manufacturer was, later, found to be not feasible since the contract was nearing completion and the statutory accounts were closed in August 1978, rendering alteration in the documents not possible.

(3) The assignment could only be at the contract price and not the discounted price (manufacturer's wholesale price) as the difference was meant to cover various out of pocket expenses.

The following points deserve mention :

(a) There should have been no question of loss to the firms since they were earning a margin of over Rs. 18 lakhs (for supplies outstanding on 1-4-1978) over the manufacturer's wholesale price against the additional tax liability of Rs. 6.76 lakhs.

(b) If assigning the contract to the manufacturer was not feasible as stated by the firms, there was also no obligation on the part of the Railways to concede their demand for enhancing the contract price to include 50 per cent of the revised tax liability.

(v) *Train lighting lamps*

The running contract awarded (January 1979) to a firm 'H' of Patna for about 10 lakhs Train Lighting (TL) lamps of different types at prices varying between Rs. 1.34 and Rs. 7.35 each, stipulated phased delivery to be completed by December 1979, which was later (July 1979) extended to February 1980. The firm did not maintain the delivery schedule, the supply till October 1979 being only 45,000 nos. as against about 4 lakh lamps due by that time. Attributing the shortfall in supply to acute power shortage, closure of its factory for over a month (during October/November 1979), etc. the firm requested (December 1979) extension in delivery period upto August 1980.

Inadequate/non-supply of TL lamps created a critical stock position on the South Central, North Eastern and Eastern Railways* compelling them to go in for emergency purchases of 34,319 lamps for which direct orders were placed (between July 1979 and May 1980) on the same defaulting firm at prices about 43—68 per cent higher than the running contract price, involving extra expenditure of about Rs. 0.65 lakh.

*Information as to whether any other Railway had also resorted to similar direct purchases at higher prices was not readily available (January 1982).

The direct orders of these Railways were executed by the firm during July 1979, March/April 1980 and July—December 1980, though its supplies against the lower rated running contract continued to be sluggish, only 23,600 nos., having been supplied during March—August 1980. Notwithstanding the breach of contract, the Ministry of Railways (Railway Board) extended (March 1980) the delivery period up to August 1980 as asked for by the firm, in preference to going in for risk purchase, on the plea that adequate time was not available for conclusion of risk purchase contracts within the prescribed time limit of 6 months after collecting data regarding force majeure situation.

Later, the firm asked for cancellation of the contract for the outstanding quantities (8.70 lakh lamps) without financial repercussion on either side, on grounds, *inter alia*, of cost escalations rendering continuation of supplies unremunerative and various constraints like power shortage, financial crisis, etc. resulting in loss of almost 75 per cent of the working days during the currency of the contract. Accordingly, the Ministry of Railways (Railway Board) short closed (December 1980) the contract at 25 per cent of the ordered quantity without financial repercussion on either side, even though they were aware that repurchase of the materials from alternative sources would cost more.

The Ministry of Railways (Railway Board) stated (January 1982) that :

(1) The firm had failed to supply the TL lamps due to force majeure situation.

(2) The contract was short closed on consideration of force majeure conditions only and not for additional factor of cost escalations as stated by the firm.

The above remarks do not, however, alter the position in that :

(a) Default in supply by the firm against the running contract created critical stock position on North

Eastern, South Central and Eastern Railways which had to make direct purchases at higher prices involving extra cost of Rs. 0.65 lakh.

(b) The force majeure conditions in consideration of which the running contract was short closed (December 1980) by the Ministry of Railways (Railway Board) without financial repercussion on either side did not, however, stand in the way of the firm executing the direct purchase orders (July 1979) to December 1980) of the Railways at higher prices.

(c) There were no adequate data or supporting documents in the Ministry of Railways (Railway Board) in support of the alleged extreme force majeure conditions in the firm.

(d) The short closure of the contract necessitated repurchase (June 1981) of the unsupplied TL lamps from other firms, without taking recourse to risk purchase, involving extra expenditure of Rs. 3.58 lakhs.

Summing up

(1) Price settlement based on landed cost without exploring feasibility of adopting indigenous price of similar item led to higher price being allowed to a sole tenderer compared to price based on indigenous price of similar item (extra cost : about Rs. 7.17 lakhs).

(2) Rates demanded/agreed to for bulk orders were higher than those allowed by individual Railways for their contemporaneous purchases of lesser quantities, defeating the objective of economy through centralised bulk purchases (extra cost : Rs. 17.12 lakhs).

(3) Preferential price allowed to a firm (Public Sector Undertaking) though not admissible under the extant Government policy, besides *ex gratia* payment in excess of that warranted for the escalations during the currency of firm price contract (extra cost : Rs. 8.79 lakhs).

(4) Extra contractual payments (Rs. 3.38 lakhs) to firms in preference to availing the benefit, in full or in part, accruing from the change in sales tax rules during execution of contracts.

(5) Despite default in supplies a firm was absolved of its contractual liabilities, while the Railways were exposed to extra cost (Rs. 4.17 lakhs) for emergent purchases from the same firm and repurchase of the unsupplied quantities from other firms.

8. Western, Northeast Frontier and South Eastern Railways—Diesel Locomotive Warks and Integral Coach Factory—Stores purchases by individual Railways/Production Units

A test check of stores purchases on various Railways revealed a number of irregularities resulting in infructuous expenditure of Rs. 60.73 lakhs as mentioned below :

I. *Western Railway—Purchase of Schaku couplers*

The Ministry of Railways (Railway Board) had issued directives (January 1968) to Central, Eastern and Western Railways to replace the Majex and Alliance Couplers on the existing EMU(DC) coaches by Schaku (Scharfenberg) couplers on a phased basis with a view to standardising this item on EMU coaches. In August 1969, the Board further decided that the replacements should be confined to only such EMU(DC) stock as would remain in service for more than 10 years.

On Western Railway, 192 EMU coaches (54 numbers Jessop 1961, 79 numbers Jessop 1963, 12 numbers SIG and 47 numbers 'MAN') were earmarked for the change over to Schaku couplers. The Railway Administration procured (1969)

130 numbers automatic (each comprising coupler head, outer end coupler and centering device) and 40 each of semi-permanent A & B type Schaku couplers costing Rs. 11.95 lakhs for replacement of the existing couplers. However, due to difficulties experienced in re-wiring of coaches, cutting out and rewelding of underframes and re-location of major equipment, etc., the Administration could replace the couplers on only 12 SIG coaches with 40 Schaku couplers (cost Rs. 1.15 lakhs) during the period September 1970 to April 1979. 87 couplers (cost Rs. 2.77 lakhs) were used for maintenance and 258 Schaku couplers (cost Rs. 6.31 lakhs) were transferred to other Railways leaving 85 couplers costing Rs. 1.72 lakhs unutilised.

In the meantime, the Administration reviewed (March 1975) the scope of the work and decided to confine replacement of the existing Majex and Alliance couplers by Schaku couplers to the 1963 Jessop stock, as by then the 1961 Jessop stock had residual life of less than 10 years. Accordingly, based on the indents of the Mechanical Department (June 1975), Schaku couplers and their ancillaries costing Rs. 8.47 lakhs were procured by 1976 for carrying out replacements on coaches, though the Administration was aware of the difficulties already experienced and the resultant slow progress in replacement of couplers on SIG coaches. However, cables for re-wiring the coaches incidental to replacement of couplers, were not procured by the Electrical Department (until 1979-80) on the ground that the Research, Designs and Standards Organisation (RDSO) had changed the specifications of the cables in April 1976, December 1976 and December 1977. These were purchased in 1979-80 at a cost of Rs. 29.55 lakhs. By then, the 1963 Jessop coaches were also left with a residual life of just 10 years. Considering that 1 to 2 years would be required for fitting the Schaku couplers, the Railway Administration proposed (December 1980) to the Ministry of Railways (Railway Board) that the 1963 Jessop stock be permitted to continue with the existing Majex and Alliance couplers, which was approved by the Board in February 1981.

Expenditure of Rs. 10.19 lakhs on procurement of Schaku couplers and their ancillaries was thus rendered infructuous. Besides, cables worth Rs. 29.55 lakhs procured in connection with replacement of couplers are lying unutilised. Attempts by the Railway Administration to utilise the Schaku couplers elsewhere, have not succeeded as the Integral Coach Factory (ICF) Administration concluded after inspection(November 1980) that all the automatic coupler heads had become rusty and that certain parts were missing/damaged due to long storage.

The Administration thus incurred infructuous expenditure of about Rs. 40 lakhs due to defective planning in this case.

This para was issued to the Railway Administration on 24th October 1981; its remarks thereon are still awaited (31st January 1982).

II. *Northeast Frontier Railway—*

Excess procurement of paint

During the period June 1969 to August 1971, the Stores Depot, New Bongaigaon procured 52,600 litres of ready mixed brushing zinc chrome primer paint (for use on exterior surface of coaching stock in New Bongaigaon Workshop) valued at Rs. 2.53 lakhs from two firms 'A' and 'B' (34,540 and 18,060 litres respectively) through the Director General, Supplies and Disposals (DGS&D). 2,600 litres were received against an order placed on firm 'A' in January 1968 and 50,000 litres from both firms against orders based on the depot's assessment for the period 1st January 1969 to 15th June 1971.

As per Indian Standard Specifications, the 'keeping property' period of this type of paint is generally one year. The total issues of the paint during the years 1969 to 1976 were 30,380 litres comprising 2,780 litres issued to New Bongaigaon Workshop for use on coaching stock, 1,040 litres issued for painting of wagon stock (for which inferior quality of paint is to be used), and 26,560 litres issued to other Stores Depots and individual stock holders etc. 540 litres were written off as shortages.

The paint supplied by firm 'A' was tested by the Paints Shop, New Bongaigaon Workshop in November 1975 (more than 4 years after its receipt) and was found 'absolutely unserviceable'. The paint supplied by firm 'B' was tested by the Chemist and Metallurgist, New Bongaigaon Workshop in September 1976 (more than five years after its receipt) and was found not conforming to specifications in respect of consistency, finish, hardness etc., and hence not suitable for use.

The balance of 21,680 litres of the paint valued at Rs. 1,28 lakhs was still (December 1981) lying unused.

The Ministry of Railways (Railway Board) stated (December 1981) that (i) the paint purchased was a substitute for another paint of regular consumption and could not, perhaps, be used because the latter had become available after the former had been purchased, and that (ii) the feasibility of using this paint after re-activating it by mixing certain other fluids, was under consideration.

III. *South Eastern Railway*

(1) *Purchase of defective paint*

The Director General, Supplies and Disposals (DGS&D) placed an order on 14th July 1972 on a firm of Calcutta for supply of 15,000 litres of ready mixed red lead paint to the Divisional Stores Depot, Kharagpur at the rate of Rs. 16.75 per litre plus sales tax etc., after inspection by the Director of Inspection (DOI), Calcutta (an officer of the DGS&D).

The firm offered the material for inspection in three lots of 5,000 litres each. While the third lot was inspected by the DOI, Calcutta on 21st September 1972, the inspection note was issued by him on 27th December 1972 *i.e.* more than 3 months after inspection. The firm despatched the material on 21st May 1973 (8 months after inspection) and 95 per cent payment amounting to Rs. 0.84 lakh was made on 28th May 1973 as per terms of the contract. The material was received

(and accepted) by the consignee 9 months after inspection, on 16th June 1973, though according to ISI Code, red lead paint is likely to start drying up after a period of 120 days from the date of its manufacture. Further, the manufacturing date and 'keeping property' period had also not been marked on the drums despite a stipulation to this effect in the purchase order.

A bridge inspector, to whom two drums were issued in June 1973 for test, reported (6th September 1973) that the paint was not in proper consistency. The Divisional Engineer asked the firm on 19th October 1974 to replace the defective paint as early as possible, requesting the DGS&D at the same time for necessary action in the matter. Thereafter, the matter remained under correspondence between the Railway Administration and the DGS&D. The Railway Liaison Officer with DGS&D reported in June 1976, that the supplying firm did not exist. The DGS&D advised in October 1977, that the Railway Administration's non-acceptance of the stores could not be construed as rejection under the contractual terms and conditions as opined by the Ministry of Law. Since the consignee had not even sent any formal rejection memo to the firm, the order could not also be cancelled at the risk and cost of the firm. In consequence, the amount of Rs. 0.84 lakh had become irrecoverable.

The Department of Supply stated (October 1981) as under :

(i) The exact reason for delay in issuing the inspection note could not be ascertained as the relevant file had been destroyed.

(ii) Information regarding outstanding dues of the firm in other cases which can be adjusted against Railway dues in this case, is being collected.

The Ministry of Railways (Railway Board) stated (December 1981) that the consignee had accepted the material as it had been pre-inspected by the DOI. However, the rules (para 1220 of Indian Railway Code for the Stores Department and clause 0603

of Indian Railway Standard Conditions of Contract) provide for the material being checked/inspected by the consignee as well, at the time of its receipt and acceptance, notwithstanding any inspection conducted by the inspecting agency earlier.

The following are the lapses on the part of the DGS&D and the Railway Administration:

(a) The relevant file of the DGS&D (July 1972 contract) was stated to have been destroyed even though that office had been informed in October 1974 that the paint supplied was defective, and the question of recovery from the firm was under consideration.

(b) Despite the ISI code that the paint would start drying up after a period of 4 months from the date of its manufacture, the DGS&D made 95 per cent payment in May 1973,though the paint had been despatched (May 1973) 8 months after its inspection (September 1972), and the consignee too accepted the material on receipt in June 1973.

(c) Though the paint drums did not have the manufacturing date and 'keeping property' period marked on them despite a stipulation to this effect in the purchase order, these were passed by DOI of DGS&D in inspection, and were accepted by the consignee.

(d) The consignee failed to send any formal rejection memo to the firm as per contractual terms and conditions.

(2) *Procurement of sub-standard material*

A running contract was entered into (February 1973) by the Director General, Supplies & Disposals (DGS&D) with firm 'C' providing, *inter alia*, for supply of 7,000 broad gauge (BG) bearing springs for wagons to the District Controller of

Stores, South Eastern Railway, Kharagpur at the rate of Rs. 396 each (Rs. 400 less 1 per cent rebate) for the first 5,000 numbers and Rs. 400 each for the remaining ones, after inspection by the Director of Inspection (DOI) of DGS&D, New Delhi.

Firm 'C' supplied 1272 numbers (two received in broken condition) in different wagon load consignments between March and November 1973, and these were issued to the various consuming units.

One consignment containing 282 springs was unloaded at Kharagpur on 21st and 22nd January 1974. On the advice of the Vigilance Department of the Railway, the Assistant Controller of Stores sent samples on 28th February 1974 to the Railway Laboratory at Kharagpur for necessary test. The result of the test, as advised on 16th July 1974 (4½ months after the samples were sent), revealed that the hardness value of the springs was lower than the minimum value specified. Accordingly, rejection advice was issued to firm 'C' on 24th August 1974, (more than seven months after the receipt of the material) as against the prescribed period of 45 days (as per General Conditions of Contract). A joint check was carried out on 9th November 1974. The firm's representative stated that there was a possibility of mix-up of springs with supplies by other manufacturers, particularly in the context of the fact that the springs did not bear the manufacturer's name and the year of manufacture, contrary to the provision in the specifications.

In the meantime, two more consignments (146 and 105 numbers) of springs had been received at Kharagpur on 14th March 1974 and 19th June 1974 respectively. The samples drawn from these consignments were sent on 21st October 1975 (more than 16/19 months after receipt of the material) to the same Railway Laboratory (at Kharagpur) for test. The result of the test, received on 5th November 1975, again indicated that the hardness value of the material was lower than the minimum value specified. The rejection advice was issued on

11th November 1975. There was thus a delay of more than one year in conducting the test and rejecting the material.

98 per cent payment amounting to Rs. 2.13 lakhs had already been made to firm 'C' for supply of 533 springs as per terms of the contract.

Out of the 533 rejected springs, 9 were destroyed in testing, 144 were stated to have been inadvertantly issued to the consuming units in March 1974 and the remaining 380 were still in stock (September 1981).

Firm 'C' did not supply the balance quantity (5195 numbers) and the contract was cancelled by the DGS&D on 19th July 1974 at the risk and cost of the firm. The balance quantity was procured from another firm 'D' against a contract executed in October 1974 at a higher rate of Rs. 574.85 each (Rs. 598.80 less 4 per cent discount), as against the previous rate of Rs. 396/400 each. The extra expenditure on this account worked out to Rs. 11.86 lakhs.

The firm disowned its responsibility (June 1976) for the rejected material and contended that the material in question did not belong to it. The dispute was thereupon referred to arbitration. A claims statement for Rs. 14.14 lakhs (Risk purchase amount : Rs. 11.59 lakhs, excise duty : Rs. 0.27 lakh and expenditure incurred on 533 rejected springs : Rs. 2.28 lakhs) was also filed by the DGS&D before the Arbitrator in April 1978. The firm challenged the arbitration proceedings in July 1978 in the Delhi High Court. The High Court judgement is awaited (August 1981).

The Ministry of Railways (Railway Board) stated (December 1981) that since the material bore the inspection mark of the DOI, no further detailed check by the consignee was necessary. What the consignee failed to do, however, was even visual check to ensure that the springs bore the manufacturer's particulars, as

provided in the specifications. Moreover, the extant rules require the material to be checked by the consignee as well [c.f., case III(i) above].

The following lapses took place in this case :

(i) There were abnormal delays in sending the samples for laboratory test/conducting the test and in issuing rejection advices.

(ii) 144 numbers out of the rejected stock of bearing springs had been issued to the consuming units.

(iii) Non-detection of the defects by the inspecting officers of DGS&D during their inspection was not taken up by the Administration with the DGS&D for necessary action.

IV. *Diesel Locomotive Works*
Purchase of material not conforming to specification

In August 1979, a purchase order was placed by Diesel Locomotive Works (DLW) on a firm for supply of 4000 kg of chromic acid (electro plating grade) as per Indian Standard Specification '330-1968' at the rate of Rs. 32 per kg (inclusive of excise duty but exclusive of sales tax). The material was to be inspected by the Senior Chemist and Metallurgist of DLW or his authorised representative at the firm's premises before despatch.

A chemist of DLW authorised by the Senior Chemist and Metallurgist inspected the material on 22nd September 1979 at the firm's premises and issued an inspection certificate accepting the material. The firm despatched 4000 kg of chromic acid in September 1979 and 90 per cent payment amounting to Rs. 1.20 lakhs was made on 2nd November 1979 as per terms of the contract.

The material received by DLW on 12th November 1979 was found, on chemical test carried out on 22nd November 1979, to be not conforming to the specifications. The result of the chemical analysis was communicated to the firm telegraphically on 26th November 1979, followed by confirmation by registered post, wherein the firm was asked to refund the advance payment and arrange replacement of the supply at once.

The firm refused (27th December 1979) to accept any responsibility on the ground that the goods had been despatched by it on the basis of the inspection certificate issued by the chemist of DLW. During a joint discussion held on 16th/17th January 1980, the representatives of the firm maintained that the material supplied by it conformed to the specifications. The firm, however, agreed as a special case to replace the rejected material to maintain good relationship with the Administration, but it neither replaced the material nor refunded the advance payment of Rs. 1.20 lakhs (December 1981). Arbitration proceedings against the firm were under consideration of DLW Administration (November 1981).

The Railway Administration/the Ministry of Railways (Railway Board) stated (December 1981) as under :

(i) The inspecting chemist had failed in his duty to seal the drums after inspection.

(ii) The firm obviously mixed the inspected material with sub-standard material for want of proper identification/sealing.

(iii) The matter regarding rectification and revitalisation of the material, at a cost within the 10 per cent amount, still due to the firm, was being examined.

Action, if any, taken in the case of the defaulting chemist was not, however, stated.

V. *Integral Coach Factory*
Fabrication of aluminium water tanks

During January to April 1977, the Administration placed three orders on firms 'X', 'Y' and 'Z' for fabrication of 700, 480 and 310 numbers of roof water tanks for railway coaches, respectively, to be manufactured out of aluminium sheets supplied by the Administration. These orders, *inter alia*, stipulated that the off-cuts to be returned by the fabricators should be advised by them when fabrication of the first lot of tanks was completed. The Administration, prior to placing orders, had not made any assessment of the off-cuts to be returned by the fabricators, and as such, the exact quantum of off-cuts to be returned by them in respect of each order, was not specified in the tender conditions/ agreement.

Firm 'X' completed the supply of 716 numbers of tanks (as per amended purchase order) by September 1978. While the firm's guarantee bond for Rs. 5 lakhs expired on 31st December 1979, the quantity of off-cuts required to be returned by it (as per the Administration's Design Branch estimate) but no returned so far (December 1981), is 12,816 kg valued at Rs. 1.86 lakhs.

Firm 'Y' supplied 464 numbers of tanks (as per amended order) by June 1980. The firm had requested (January 1980) the Administration to allow it to dispose of the off-cuts on behalf of the Railway at Rs. 12 per kg. The Administration, however, advised (February 1980) the firm that the rate for disposal of off-cuts should be Rs. 14.50 per kg as obtained by it in an auction held in January 1980 and asked (April 1980) it to remit Rs. 1.20 lakhs (value of 8.3086 tonnes of off-cuts as estimated by the Administration) or return the off-cuts. This was agreed to by the firm (June 1980), but it neither made any payment nor returned the off-cuts (September 1981). In the meantime, the guarantee bond given by the firm had expired on 31st Decemebr 1978.

Firm 'Z' completed (February 1981) supply of 310 tanks and returned 3.097 tonnes of off-cuts according to its own calculation, as against 4.5725 tonnes assessed by the Administration. The shortfall of 1.4755 tonnes of off-cuts, the value of which at the rate of Rs. 14.50 per kg works out to Rs. 0.21 lakh, had not been claimed by the Administration (September 1981).

The Ministry of Railways (Railway Board) stated (January 1982) as under :

(1) Necessary action has been initiated for effecting recoveries, and all amounts, finally decided as due, will be recovered.

(2) The extent of off-cuts may vary from firm to firm, depending on the nature of facilities available with it for cutting, processing and finishing etc.

(3) ICF will be directed to stipulate the quantum of returnable off-cuts clearly in future tenders.

The total amount due from each of the three firms is yet to be determined finally and realised. The exact methodology for assessing the quantum of off-cuts, duly taking into account drawing and processing details, is also yet to be laid down (January 1982).

The cases mentioned above reveal the following major procedural or system defects, requiring review and streamlining of the procedures relating to planning and stores procurement :

(1) Defective planning leading to material being rendered surplus to requirements (case I).

(2) Procurement of material in excess of requirement and its consequent non-utilisation (case II).

(3) (i) Material not inspected/tested properly and promptly either by the inspecting agency or by the consignee on receipt [cases III(1) and III(2)]

(ii) Material not sealed by the inspecting official after inspection (case IV)

(4) Formal rejection advice not issued or issued very late [cases III (1) and III (2)]

(5) Rejected material issued wrongly to the consumers [case III (2)]

(6) Non-specification in the fabrication contracts of the extent of returnable off-cuts from the material supplied by the Railway Administration for fabrication (case V).

9. **Central, Eastern, Northern, North Eastern, Southern, South Eastern Railways and Chittaranjan Locomotive Works—Procurement of tin ingots**

The Ministry of Railways (Railway Board) advised the Railways in June 1976 that the latter should register their requirements of certain non-ferrous metals, including tin ingots, directly with the Minerals and Metals Trading Corporation (MMTC), the canalising agency, in the prescribed form accompanied by earnest money of 2 per cent of the c.i.f., value, indicating *inter-alia* month-wise the quantity required. The MMTC issues sale notes against such registration and the Railway Administrations are required to make 100 per cent advance payment and draw the material within the validity period of the sale note.

A test check of cases of procurement of tin ingots on various Railways revealed a number of irregularities of the following types :

(a) Non-observance of the procedure prescribed for registration with the MMTC [cases I(i), III and V below],

(b) unnecessary delays and errors in assessing the requirements [cases II(i) and VI(iii) below],

(c) delays in placing the indents and depositing the earnest money with the MMTC [cases I(i) and V below],

(d) delays in payment and taking delivery against the sale notes issued by the MMTC [cases I(ii), II(ii) III, IV, VI(i), VI(ii) and VII below].

The resultant extra expenditure worked out to Rs. 19.60 lakhs as detailed in the succeeding paragraphs.

I. Central Railway

(i) The demand sent by the Railway Administration to the MMTC in December 1976 for supply of 31.131 tonnes of tin ingots in four instalments for the period 1st January 1977 to 31st December 1977 (the 1st instalment of 8 tonnes being required by 31st January 1977) was not in the prescribed form nor accompanied by earnest money. Subsequently, the Administration forwarded a fresh application on 27th April 1977 for supply of the revised quantity of 28.631 tonnes in two instalments—14.315 tonnes by 31st May 1977 and 14.316 tonnes by 30th September 1977—and obtained a sale note for 14.315 tonnes on 24th May 1977. The rate for tin ingots being Rs. 1,05,000 per tonne for the first quarter of 1977 and Rs. 1,29,000 per tonne for the second, the Administration incurred extra expenditure of Rs. 1.99 lakhs on the quantity of 8 tonnes intended for purchase by 31st January 1977.

(ii) Out of the quantity of 14.316 tonnes required by 30th September 1977, as stated above, the Administration obtained 7.158 tonnes in August 1977. The sale note for the remaining quantity of 7.158 tonnes issued by the MMTC on 9th September 1977 at the rate of Rs. 1,32,000 per tonne was misplaced by the Railway Administration. The MMTC thereupon issued a fresh

sale note on 19th November 1977 at the revised rate of Rs. 1,50,000 per tonne. Consequently, the Railway Administration incurred extra expenditure of Rs. 1.34 lakhs.

II. **Eastern Railway**

(i) The MMTC issued a sale note on 30th August 1976 (valid upto 20th September 1976) for 27.555 tonnes of tin ingots at Rs. 1,05,000 per tonne against the Railway Administration's application dated 2nd July 1976 for its requirement for the period 15th August 1976 to 14th February 1977. However, on receipt of the sale note, the Administration considered the stock position in September 1976 and took delivery of 12 tonnes only. After reviewing the stock position on 21st April 1977, the Administration found that the existing stock was just sufficient for about a month's requirement, and, therefore, made an urgent demand on the MMTC on 25th April 1977 for the balance quantity of 15.555 tonnes which was received in June 1977 at the rate of Rs. 1,29,000 per tonne. This resulted in extra expenditure of Rs. 3.98 lakhs.

(ii) The Railway Administration failed to make payment within the period of validity (upto 30th September 1978) of the MMTC's sale note issued on 14th September 1978 for 12 tonnes at the rate of Rs. 1,55,000 per tonne. Even though a cheque had been drawn on 22nd September 1978, it was not presented to the MMTC till 26th September 1978, and thereafter also as there were floods in Calcutta. The Administration subsequently obtained (October 1979 to March 1980) this quantity at Rs. 1,87,000 per tonne involving extra expenditure of Rs. 4.15 lakhs.

III. **Northern Railway**

After its applications for supply of 34.1 tonnes of tin ingots were returned twice by the MMTC—once in November 1978 and again in December 1978—as not being in the prescribed form, a fresh application was made on 4th January 1979. A sale note

was issued by the MMTC on 8th February 1979 for 34.1 tonnes at the rate of Rs. 1,70,500 per tonne valid upto 28th February 1979. The Administration decided on 16th February 1979 to procure only 8 tonnes due to paucity of funds during 1978-79. However, even this quantity could not be purchased by 28th February 1979 when the sale note expired, as the matter remained under consideration of the Tender Committee till 26th February 1979. Thereafter, at the request of the Administration to extend the validity of the sale note by 3 weeks beyond 28th February 1979, the MMTC issued a fresh sale note on 15th March 1979. This too could not be availed of by the Administration, as funds were no longer available even for the reduced quantity of 8 tonnes. The Railway Administration finally purchased 27 tonnes at Rs. 1,83,000 per tonne in May 1979, involving extra expenditure of Rs. 1.04 lakhs on the 8 tonnes proposed to be purchased before March 1979.

IV. **North Eastern Railway**

The Railway Administration failed to make advance payment within the validity period (upto 30th June 1979) of a sale note issued by the MMTC on 7th June 1979, for 7.725 tonnes of tin ingots at the rate of Rs. 1,82,500 per tonne. Subsequently, on the request of the Administration, the MMTC issued a fresh sale note in August 1979 at the revised rate of Rs. 1,87,000 per tonne, resulting in extra expenditure of Rs. 0.33 lakh (for a quantity of 7.3496 tonnes as purchased).

V. **Southern Railway**

The application sent by the Railway Administration on 5th May 1977 for supply of 9.493 tonnes, covering requirements from March 1977 to August 1977 as assessed in November 1976, was rejected by the MMTC, as not being in the prescribed form. The MMTC also informed the Administration of the increase in the rate of tin ingots from Rs. 1,05,000 to Rs. 1,29,000 per tonne with effect from 1st April 1977. A revised application was therefore sent to the MMTC on 10th May 1977 for a reduced

quantity of 7.678 tonnes and the balance of 1.815 tonnes was covered in a subsequent procurement at a still higher rate of Rs. 1,32,000. This resulted in total extra expenditure of Rs. 2.43 lakhs.

VI. South Eastern Railway

(i) The MMTC issued two sale notes, one dated 7th February 1977 for 2 tonnes of tin ingots valid upto 28th February 1977 (later extended upto 10th March 1977) and the other dated 8th March 1977 for one tonne valid upto 29th March 1977 at the rate of Rs. 1,05,000 per tonne, in part compliance with the Railway Administration's requirement of 18.006 tonnes in two instalments—3 tonnes in March 1977 and the balance in April 1977. The Railway Administration, however, failed to make payment within the validity period of these sale notes. The Administration's total requirement of 18.006 tonnes of ingots was later on covered in 2 sale notes, one dated 6th May 1977 for 7.503 tonnes and the other dated 9th June 1977 for 10.503 tonnes at the rate of Rs. 1,29,000 per tonne. Extra expenditure of Rs. 0.77 lakh was incurred on procurement of 3 tonnes of ingots which could not be purchased against the earlier sale notes of February/March 1977.

(ii) The quantity against the sale note dated 9th June 1977 for 10.503 tonnes, was reduced to 7 tonnes to obviate the Ministry of Railways' (Railway Board) sanction for incurrence of expenditure above Rs. 10 lakhs. The balance quantity of 3.503 tonnes was subsequently procured against another sale note dated 9th August 1977 at a higher rate of Rs. 1,32,000 per tonne, thus incurring further extra expenditure of Rs. 0.11 lakh.

(iii) A sale note issued by the MMTC on 8th February 1979 for supply of 18.388 tonnes at the rate of Rs. 1,70,000 per tonne was utilised by the Railway Administration for 5 tonnes only, on the consideration that the quantities in stock and due would be sufficient upto June 1979. However, the Administration requested the MMTC on 19th April 1979 to issue a sale note for

the balance quantity of 13.388 tonnes within April 1979 itself, as the material was required urgently. The MMTC issued the sale note on 27th July 1979 at Rs. 1,87,000 per tonne, involving extra expenditure of Rs. 2.53 lakhs.

VII. **Chittaranjan Locomotive Works**

Failure of the Railway Administration to make payment within the validity period (upto 18th February 1980) of a sale note issued by the MMTC on 18th January 1980 for supply of 9 tonnes of tin ingots at the rate of Rs. 2,00,000 per tonne, led to the procurement of the material subsequently in April/May 1980 at Rs. 2,10,000 per tonne, involving extra expenditure of Rs. 0.93 lakh. Though the cheque had been drawn on 11th February 1980, it was not delivered to the MMTC by the due date of 18th February 1980.

10. **Eastern and Northern Railways—Misappropriation of stores/coal**

The following cases of misappropriation of stores/coal aggregating Rs. 16.65 lakhs were noticed :

I. **Eastern Railway**
Lubricating oils

Diesel Shed, Beliaghata stocks, lubricating oils, H.S.D. oil, etc., and is under the overall charge of a Diesel Foreman.

On change of incumbency of the post of a stores clerk of the shed on 23rd December 1977, it came to light that lubricants received in the shed against 5 Railway Receipts of August, September and October 1977 had not been accounted for in the relevant ledger. A special stock verification conducted (March 1978) by the representatives of the Accounts Department, under instructions of the Enquiry Committee constituted on 7th March 1978, revealed misappropriation of 679 barrels of different types of lubricating oils valued at Rs. 10.05 lakhs over the period from

June 1975 to March 1978. The stock verification report, submitted in May 1978, brought out a number of irregularities like non-accountal of receipts, accountal of receipts without quoting reference to challans/Railway Receipts, accountal of excess issues, and miscasting of balances.

These irregularities had been facilitated by the following lapses/failures :

(1) The Diesel Foreman had neither exercised supervisory check on the entries made by the Stores Clerk in the ledger, nor carried out annual departmental verification of stores.

(2) Reconciliation of the quantities for which debits were received from Director General, Supplies and Disposals, with the quantities accounted for as receipts in the ledger had not been prescribed by the Railway Administration.

The Railway Administration stated (August 1981) that remedial action to rectify the above defects had since been taken, that the then Diesel Foreman, Beliaghata had been removed from service from 4th November 1980 and that departmental enquiry against other staff was in progress. The loss of Rs. 10.05 lakhs is, however, yet (November 1981) to be regularised.

II. **Northern Railway**

(i) *Electrical stores*

A physical verification of stores in the custody of the Electrical Foreman (Train Lighting), Amritsar, conducted (June to November 1977) by the Accounts Department, revealed shortages of material worth about Rs. 3.13 lakhs.

A Committee of 2 Senior Scale Officers, constituted (December 1977) to investigate the shortages, in its report (June 1979) observed that material costing Rs. 0.76 lakh had been misappropriated.

The explanations given by the Electrical Foreman for the shortages remained under scrutiny by the Accounts Department, which stated (January 1982) that out of the total shortages of Rs. 3.13 lakhs stores worth Rs. 2.17 lakhs had since been accounted for, leaving a balance of Rs. 0.96 lakh (including Rs. 0.76 lakh referred to earlier).

The irregularities noticed, *inter-alia,* were, non-accountal of receipts, unauthorised transfer of stores, tampering of issue notes, non-verification of stores departmentally, etc.

Of the 11 Railway employees found (June 1979) guilty of various irregularities by the committee, disciplinary action had been finalised (December 1981) against 5 of them only.

In order to avoid recurrence of such cases, the committee had recommended (June 1979), *inter-alia,* necessary remedial measures, for example, that material should be issued by Stores Depot against properly authorised requisitions/indents, transfer of material should be allowed only under the orders of the Divisional Officer, the issuing and receiving subordinates should send copies of returns to the Divisional Office for pairing and Supervisors/Officers of the Department should check the inventories.

The Railway Administration stated (January 1982) that the recommendations of the committee had already been implemented by issuing necessary instructions. It was, however, found on verification that the instructions stated to have been issued had been issued in December 1977, March 1978 and September 1978, that is, long before the committee made recommendations in June 1979. Only on one recommendation relating to check of inventories, the Administration had issued instructions (November 1979) enjoining on supervisors (alone) to conduct verification, though the committee had recommended that officers also should check the inventories.

(ii) *Coal issued to locos*

The Northern Railway steam locos, homed at loco shed Ghaziabad, are booked to work two passenger trains daily between Delhi and Palwal (a station on Central Railway). After Delhi-Palwal trip, the locos are handed over to Central Railway shunters for lie-over at Palwal, and, while waiting for the return trip, each loco remains in steam for about 10 hours daily.

The fuel Inspector, Ghaziabad had reported (February 1980) to the Senior Divisional Mechanical Engineer, New Delhi that in a number of cases the coal consumption on these locos during their lie-over at Palwal had been as high as 0.7 tonne against the permissible consumption of 0.1 tonne per loco per hour. The Senior Divisional Mechanical Engineer, New Delhi, in turn, reported the matter to his counterpart at Jhansi on Central Railway (March 1980 and again June 1980) with the request that steps be taken to curb large scale misappropriation of coal.

After a review (February 1981) of trip ration cards maintained at loco shed, Ghaziabad, however, Audit noticed and pointed out to the Administration that high consumption of coal was continuing, as indicated below :

Consumption of coal during lie-over of 10 hours (in tonnes) against permissible quantity of one tonne.

Period	Minimum	Maximum	Average
January 1979 to December 1979	3.1	6.2	4.5
January 1980 to December 1980	3.5	8.7	5.4

There was no appreciable improvement even thereafter, vide details given below :

Period	Minimum	Maximum	Average
January 1981 to May 1981	1.7	6.6	4.1

The Senior Divisional Mechanical Engineer, Central Railway, while informing (May 1981) his counterpart on Northern Railway of the disciplinary action taken against the defaulting shunters of Central Railway, had suggested that the latter should restrict coal loading on locos working passenger trains between Delhi and Palwal to eliminate misappropriation of coal. Further action in this respect is yet (September 1981) to be taken by Northern Railway Administration.

The Northern Railway Administration stated (September 1981) that the permissible coal consumption should be taken as 0.15 tonne per loco per hour. Even on this basis the quantity of coal pilfered/lost during the period January 1979 to May 1981 worked out to 3,422 tonnes valued at Rs. 5.64 lakhs Effective action to curb misappropriation was yet to be taken (September 1981).

This para was issued to the Railway Administration on 4th November 1981 ; its reply thereto is still awaited (31st January 1982).

CHAPTER IV

WORKS

11. Southern, South Central and Western Railways-Earthwork contracts

Earthwork consisting of excavation, cutting of rocks, filling of depressions, levelling of sites and formation of banks, etc. is involved in a large number of Railway contracts. A review conducted by Audit in respect of earthwork contracts on the Railways revealed a number of irregularities of the following types :

(i) Tenders for earthwork did not take into account the different kinds of soils/rocks existing in the area, resulting in disputes subsequently about correctness of the classification of the soils/rocks, which in turn led to payments to contractors at higher rates (cases I (i) and II (ii) below).

(ii) Defective initial planning resulted in earth released (cut spoils) being thrown away and fresh earth being transported at extra cost (case I (ii) below).

(iii) Non-finalisation of tender within its validity period led to increase in the already tendered rates (case II (i) below).

(iv) Items already covered by contract were paid for separately, resulting in extra expenditure (case II (iv) below).

(v) Different methods adopted for measurement of the work done by two contractors within the same area (case II (iii) below).

(vi) The quantities of earthwork were revised radically after execution of the agreement, resulting in vitiation of the comparative evaluation of tenders made earlier (case III below).

The details of the cases noticed are given in the succeeding paragraphs :

I. **Southern Railway**

(i) *Incorrect classification of soil*

The project linking Tirunelveli with Trivandrum via Nagercoil was sanctioned by the Ministry of Railways (Railway Board) in April 1972, at an estimated cost of Rs. 14.53 crores (revised to Rs. 33.90 crores in February 1981). Though the project report submitted in 1970 had mentioned the prevalance of laterite strata in the region, the Administration invited (October 1972 to April 1973) tenders for earthwork based on two kinds of soils only viz., (i) all soils other than rock requiring blasting (rate as per SOR: Rs. 12.75 per 10 cum) and (ii) all rocks requiring blasting (rate as per SOR: Rs. 118.80 per 10 cum), as against six different classifications provided for in the Southern Railway Schedule of Rates (SOR). In the tender schedules, the approximate quantities for the two kinds of soils were also not notified separately, but only the total quantity of earthwork involved was mentioned.

Though the existence of laterite rock in the area was in the knowledge of the Administration through Engineering Survey and Geological Survey Reports and was known to the tenderers as evidenced by the quotations received from some tenderers who had stipulated that the earthwork in cutting laterite and soft rock should be classified separately for payment, the contracts were finalised at rates varying from 30 to 47 per cent above the

basic rates (as per SOR) for the two tier classification referred to above by June 1973. After commencement (March-August 1973) of the work, the contractors began complaining of under-classification of earthwork and finally stopped the work from various dates during July 1974 to April 1975.

After negotiations (May 1975) with the contractors, the Railway Administration introduced (July 1975) a new category, viz. all rocks other than rock requiring blasting (rate as per SOR: Rs. 47.70 per 10 cum, the contractors percentage rate being payable over this). As a result of this new classification, 4.52 lakhs cum of earthwork originally paid for under the lower category (referred to above) upto July 1975 were re-classified and paid for under the newly introduced intermediate category, involving additional payment of Rs. 21.04 lakhs to the contractors. Similarly, 9.59 lakhs cum of quantity of earthwork in cutting not requiring blasting (not already paid for but which would have been classified for purposes of payment under the lower category of the original two tier classification), had to be paid for under the higher intermediate classification, involving additional payment of Rs. 46.09 lakhs. Thus, the total additional payments to the contractor amounted to Rs. 67.13 lakhs.

The Railway Administration stated (December 1981) as under :

(i) The rate allowed for the new intermediate classification was appropriate in asmuch as it had been kept at the level applicable to ordinary rock (not requiring blasting).

(ii) The bulk of the quantity of earthwork classified under the intermediate category consisted of rock requiring light/occasional blasting, and by introducing the intermediate classification and not otherwise allowing it to be classified under the highest category, the Administration had stood to gain Rs. 42 lakhs.

The Railway Administration's view is not tenable for the following reasons :

(1) Since the tenderers were aware of the existence of laterite rock in the area, they, while quoting for only two categories of soils as asked for by the Administration, could be expected to have protected themselves by quoting a high percentage (30 to 47) over SOR for the two prescribed categories so as to compensate themselves, for the work involved in the third type of soils as well. The quantities of the two categories of soils had also not been quoted in the tender schedules separately.

(2) Moreover, according to the general specification of work, the highest rate was applicable only to earthwork in hard rock requiring intensive blasting, which laterite strata do not require. The earthwork which was transferred to the new category would not thus have qualified under the highest category, and there was, therefore, no question of any saving as urged by the Administration.

(ii) *Avoidable expenditure*

The contract (Value : Rs. 42.97 lakhs) for earthwork in formation, construction of bridges, tunnels etc. in reach XVIII of the Ghat Section of the Mangalore-Hassan Railway project, entered into in February 1969, provided, inter-alia, for earthwork in forming banks to the extent of 1.46 lakhs cum (51.64 lakhs cft) at the rate of 4 per cent above the basic rate of Rs. 16.60 per 10 cum. Consequent on the design of 4 bridges in the reach having been changed, providing for pipe culverts instead of girder bridges, (December 1972) after 4 years of commencement of the works, the quantity of earthwork in forming banks increased by 28 lakhs cft. In this connection, the contractor pleaded (July 1974) that, while the quantity of earth required had increased, the quantity of cut spoils available within

the reach for utilisation had substantially decreased, necessitating transportation of earth from outside. The contractor also claimed (December 1972) a rate of Rs. 92 per 10 cum for transportation of earth from the adjacent reach No. XII-A, the work in respect of which was also being executed by him at that time. Though the claim was initially rejected (September 1975) by the Administration, negotiations were subsequently conducted (March 1978) by it with the contractor and a rate of Rs. 73 per 10 cum was agreed to (on the basis of the cost of operation of lorries deployed by the contractor) for leading 6.6 lakhs cft of earth from reach XII-A to reach XVIII, following which extra payment of Rs. 86 thousand (representing the difference between the rates of Rs. 73 and Rs. 16.60 + 4 per cent) was made to him. It was observed in audit that neither any watch had been kept by the Railway Administration on the use of the cut spoils nor had any written permission been given to the contractor for leading earth from the adjacent reach. No authentic records in the form of entries in the measurement book had also been kept for the quantity of earth moved in, if any, from outside and paid for; as required under the rules.

The Railway Administration explained (August 1981) that 18.55 lakhs cft of the cut spoils in reach XVIII had been thrown away prior to revision (December 1972) of the design of the bridges, as the anticipated requirements under the earlier design was much less than the quantities of cutting, and no space was available for stacking the same. No records were, however, made available in support of this contention. Even assuming it to be correct, the quantity of cut spoils thrown away as not being required could have been utilised, had the design of the bridges been prepared properly in the first instance instead of 4 years after commencement of the work thereby avoiding extra payment of Rs. 86 thousand.

The Ministry of Railways (Railway Board) stated (December 1981) that the change in design, even though made about four years after commencement of the work, had resulted in a saving

of about Rs. 15 lakhs. However, proper initial designing and planning could have not only ensured this saving but also avoided the extra expenditure of Rs. 86 thousand incurred subsequently.

II. South Central Railway

(i) *Delay in finalisation of a contract*

Open tenders were invited (December 1977) for earthwork in embankment for forming approaches, construction of road under-bridge and sheds for site offices, stores etc., in connection with the construction of a third bridge over Krishna River at an estimated cost of Rs. 9.97 lakhs. The lowest offer (Rs. 10.15 lakhs) received from tenderer 'A' was valid upto 27th April 1978, which was got extended upto 30th June 1978. All the tenderers (13 in number) were again approached (June 1978) for extending the period of validity upto 30th September 1978 (the reasons for which were not on record) to which 11 tenderers agreed. The lowest tenderer 'A', while agreeing to extend the validity period, increased his offer by 20 per cent above his earlier offer (i.e. from Rs. 10.15 lakhs to Rs. 12.18 lakhs). The Tender Committee met on 11th September 1978 and recommended negotiations with all the 11 tenderers; after negotiations, it recommended (September 1978) acceptance of the revised offer of tenderer 'A' for Rs. 11.81 lakhs, and the same was accepted in October 1978 by the competent authority. As compared to the offer of 'A' received initially in January 1978 and valid upto June 1978, acceptance of the revised offer in October 1978 resulted in extra liability to the tune of Rs. 1.65 lakhs.

The Railway Administration stated (December 1981) that the tender could be finalised only in September 1978 after receipt of the sanction of urgency certificate by the Ministry of Railways (Railway Board). In this connection, it is pointed out that :

The Ministry of Railways (Railway Board) had advised the Administration in February 1978 that the work was being

included in the budget estimates for 1978-79, and that all the preliminaries should be completed so that there was no delay in actual execution of the work from 1st April 1978. Despite the lowest tender being valid upto 27th April 1978 only, and got extended up to June 1978, the Administration did not specifically bring this to the notice of the Ministry of Railways (Railway Board) for obtaining their sanction to the urgency certificate well in time, at least, before the expiry of the extended validity of the tender. Failure to do this resulted in extra liability of Rs. 1.65 lakhs.

(ii) *Repeated re-classification of soils/rocks*

According to the extant procedure, earthwork measurements are required to be taken by the Assistant Engineer (AEN) incharge of the work and classification of the soil is also to be done by him. In his absence, the concerned Inspector of Works (IOW) is required to take measurements and classify the soil. At least, 50 per cent of the entries so recorded by the IOW is required to be test checked by the AEN.

In connection with the Manmad-Aurangabad conversion work, the contractor engaged (July 1979) for earthwork in formation etc. was paid for a total quantity of 14,500 cum under different categories, namely, "excavation in (i) all kinds of soils except rock, (ii) rock not requiring blasting and (iii) rock requiring blasting", upto his sixth on account bill (March 1980). Measurements upto fifth on account bill (February 1980) had been taken by the AEN while those for the sixth on account bill were taken (March 1980) by the IOW in the absence of the AEN (who was out on training) and its check measurements were done (March 1980) by the Divisional Engineer (DEN) to the extent of 23.5 per cent as against 50 per cent prescribed. In September 1980 the AEN in-charge of the work (on return from training) re-classified the quantities already paid for in all the six on account bills. The re-classification revealed that the contractor

had been overpaid to the extent of Rs. 1.21 lakhs, as indicated below :

Description	Rate	Quantity as reclassified cum	Quantity as already paid cum	Overpayment Rs.
Earthwork in all kinds of soils except rock	Rs. 26.50 per 10 cum	2100	1500	(—)1590.00
Rock not requiring blasting	Rs. 50.70 per 10 cum	5300	1000	(—)21801.00
Rock requiring blasting	Rs. 136.00 per 10 cum	5600	12000	(+)87040.00
				(+)63649.00
Plus 90 per cent contractor's percentage				57284.00
Total		13000	14500	120933.00

The contractor stopped work in April 1981.

The Railway Administration stated (December 1981) that on further examination over-payment had been assessed at Rs. 0.35 lakh instead of Rs. 1.21 lakhs assessed earlier.

Repeated re-classification of soils/rocks and variations in assessment of the amount of over-payment would indicate that the existing system of measurements is not sufficiently definitive and is capable of frequent modification without getting approval of higher authorities.

(iii) *Changes in mode of measurements*

Following the decision of the Government of Karnataka (1971) to construct a dam across river Krishna near Almatti Railway station, a portion of the Railway line between Bagalkot and Telgi (Basavanabagewadi) stations in the Gadag-Sholapur Section had to be diverted. The work of diversion was undertaken by the Railway at the cost of the State Government.

Contract for earthwork in respect of reach V (Chainages 12500 to 14200) was awarded to contractor 'X' in January 1972. While the work was in progress, the Railway Administration terminated his contract in June 1974 and settled his dues, as the State Government had requested stoppage of work due to paucity of funds. On the State Government deciding to restart the work, the left over portion was entrusted to contractor 'Y' in April 1977, after invitation of fresh tenders (March 1977), and was completed in March 1979.

As per final cross-sections prepared after completion of the work by the second contractor 'Y' the total quantity of cutting (Chainages 13766 to 14088) worked out to 50,324 cum out of which contractor 'X' had already been paid for 45,928 cum (as per measurement book). Thus, the balance work left for contractor 'Y' worked out to 4396 cum, but he was actually paid for 8200 cum, resulting in overpayment of Rs. 1.08 lakhs.

Normally, when earthwork in cutting is measured, it is the usual practice to take cross-sections at intervals of 25 metres. In this case too, the Assistant Engineer-in-Charge of the work had started taking measurements in respect of the work executed by 'Y' at intervals of 25 metres only, but subsequently changed to measurements at intervals of 6 metres under instructions from the Divisional Engineer who had observed (June 1977) that there being a large number of rock out-crops and undulation on the profile of cross-sections, it would be advisable to take cross-sections at closer intervals.

The Railway Administration stated (November 1981) that consequent to issue of a factual statement by Audit in January 1981, a fact finding enquiry committee headed by an Additional Chief Engineer had been set up in order to find out how the discrepancy had occurred, and that its report was under examination.

(iv) *Extra payment to a contractor for site clearance etc.*

The special conditions of contracts, entered into with seven contractors between 12th December 1978 and 20th January 1979

for earthwork in seven reaches in connection with re-alignment of the line near Almatti Railway Station provided, inter-alia, that the contractors should clear the site and fill up the pockets of the depressions before they compacted the earth in the formation of the banks. A review conducted by Audit disclosed that the Railway Administration had admitted payments separately for clearance of site, cutting the site upto a depth of 3", filling up the cutting and compacting. The amount paid on these items already covered under the contract was Rs. 1.50 lakhs.

The Railway Administration stated (January 1980) that while the estimates provided for jungle clearance, in the tender schedule and the agreement, it had not been included, and that during actual execution the contractors declined to take up the work of jungle clearance without payment of separate rates for these items. As regards cutting of the site upto depth of 3" which had to follow jungle clearance before starting the work on embankments, the Administration stated (August 1981) that the cutting had to be done because of the site conditions.

Except for the contractor's letter for one reach, there was no evidence on record to show that the soil on which the bank was to be formed, was of inferior quality, necessitating cutting. Neither in the survey, nor in the tender schedule, the need for removal of 3" earth over an area of 30,000 sqm was contemplated. Moreover, as per the records of Land Acquisition Officer, the places where embankment work had been carried out were dry agricultural lands, which would not have necessitated payment at the rate applicable to jungle clearance. Besides, since the special conditions formed part of the tender schedule and it expected that the contractors would have inspected the site before quoting the rates, there was no justification for making these payments separately.

The Railway Administration further stated (December 1981) that the special conditions described only the mode of execution of the work and did not cover the payment aspect. However, this is not tenable in view of the position already stated above.

III. Western Railway

Revision of quantities

Open tenders were invited (February 1978) for earthwork in high fill banks in connection with the construction of a new up line between Daraha and Kanwalpura (km 865 to 867) as part of the Ramganj Mandi—Lakheri doubling project. The tender schedule specified quantities of earthwork for formation of the bank and provided for mechanical compaction of only the top one metre of the formation level. The lowest offer of tenderer 'P' was accepted by the Railway Administration in May 1978 and agreement (Value: Rs. 15.86 lakhs) entered into in June 1978, providing for, inter-alia, earthwork as under :

Item	Brief description of the work	Quantity in cum	Rate per cum. Rs.
1.	Earthwork upto 1 metre below formation level	1,31,000	9.00
2.	Earthwork on top of 1 metre with mechanical compaction	10,000	15.00

The work commenced in June 1978. While it was in progress, the Chief Engineer (Construction) recommended in January 1979 (within eight months of commencement) that all further work be carried out in layers with mechanical compaction in view of the following considerations :

The target date for opening of the line had been advanced from March 1981 to March 1980 ; the line was in a semi-ghat section with banks of height of 12 metres and above, and 3 major bridges; poor nature of soil; scanty rainfall; and execution of earthwork by mechanical compaction in adjacent sections.

While the General Manager approved of the Chief Engineer's recommendation in November 1979, the contractor had already agreed (February 1979) to carry out the consequential increased quantum of mechanical compacted earthwork at the same rate as provided in the contract.

The above revision resulted in changing the scope of the contract as indicated below :

Item No.	Original quantity cum	Revised quantity cum	Variation in quantity cum	Variation in value Rs.
1.	1,31,000	43,713	(—)87287	(—)7.86 lakhs
2.	10,000	1,09,612	(+)99612	(+)14.94 lakhs
				7.08 lakhs

The total payment made to the contractor 'P' was Rs. 22.63 lakhs (Rs. 20.37 lakhs for earthwork and Rs. 2.26 lakhs for other items).

Had the correct quantum of earthwork to be mechanically compacted been provided for initially in the tenders, tenderer 'Q's offer would have been the lowest, the resultant saving (arising out of the difference between the amount of Rs. 22.63 lakhs paid to contractor 'P' and Rs. 19.87 lakhs which would have been payable to tenderer 'Q') would have been Rs. 2.76 lakhs.

Besides, incurrence of extra expenditure of Rs. 7.08 lakhs on mechanical compaction could not also be said to be justified in view of the following :

(i) The line was not opened to traffic even by the original date set for completion viz. March 1981. It was subsequently proposed to be opened in October/ November 1981.

(ii) About 80 per cent of the length of the line had embankment of less than 12 metres height.

(iii) The Railway Administration stated (July 1981) that rainfall in this area became scanty from 1979 onwards (after the award of the contract in 1978). According to the data furnished by it, rainfall was 34″ in 1978 and 21″ in 1979. The Chief Engineer

(Construction), who recommended in January 1979 that further earthwork should be done with mechanical compaction in view of the scanty rainfall in the area, could not have obviously known at that point of time the extent of likely rainfall in 1979.

(iv) Poor nature of soil in the area was not a subsequent development after award of the contract in June 1978.

This para was issued to Western Railway Administration on 16th November 1981; its reply thereto is still awaited (31st January 1982).

12. **Western Railway—Construction of a metre gauge line from Dabla to Singhana**

The Ministry of Railways (Railway Board) had informed the Ministry of Mines and Metals in August 1969 that the proposal of the latter for construction of a metre gauge line (MG) from Dabla to Singhana (34 Km) to serve Khetri Copper Project had not been found to be financially viable. Nevertheless, later after much persuasion by the Ministry of Mines and Metals and on the basis of a guarantee of traffic by the Hindustan Copper Limited (HCL), the Ministry of Railways (Railway Board) agreed (April 1970) to undertake construction of the line. The work was commenced in April 1972 and completed in June 1974 at a cost of Rs. 2.38 crores. The line was opened to goods traffic on 15th June 1974.

The guarantee deed executed (July 1971) by the HCL stipulated inter-alia, as under :—

(i) All inward and outward traffic of the project would be offered for transportation by rail (including approximately, inward traffic of 1000 tonnes of rock phosphate and outward traffic of 600 tonnes of fertilizers per day, in addition to copper and other by-products etc.).

(ii) Freight charges would be payable on 1½ times the actual distance.

(iii) The Railway Administration would be authorised to examine twice a year HCL's records to verify the quantum of traffic offerings.

(iv) The Railway Administration would be entitled to recover the shortfall and also to stop traffic on the new line and dismantle it after 3 months notice in the event of the HCL not honouring its commitments.

(v) In the case of any happening beyond control of either party, notice shall be given within 21 days of such happening.

The traffic, as envisaged in the project report vis-a-vis that actually materialised, from 15th June 1974 to 31st March 1980 was as under :

Year	As envisaged (in tonnes)	As actually materialised (in tonnes)	Percentage of column 3 to column 2	Traffic per day (in tonnes)	No. of wagons per day
1	2	3	4	5	6
		Inward Traffic			
1974-75	291222	28181	9.7	97	6.8
1975-76	291222	63700	21.9	174	12.0
1976-77	291222	42648	14.7	117	8.5
1977-78	291222	89678	30.8	246	16.8
1978-79	291222	48761	16.7	134	10.0
1979-80	422263	63515	17.4	201	14.0
		Outward traffic			
1974-75	335074	315	0.1	1	0.1
1975-76	335074	2598	0.8	7	0.6
1976-77	335074	16122	4.8	44	2.7
1977-78	335074	21418	6.4	59	3.9
1978-79	335074	46329	13.8	127	7.5
1979-80	447864	36112	8.1	99	6.3

On Audit enquiring (August 1976) of the Railway Administration why, in spite of the actual traffic materialisation during the two years 1974-75 and 1975-76 being meagre as compared to anticipations, no action had been taken in terms of the guarantee deed (July 1971), the Railway Administration stated (November 1976) that no claim had been preferred on the consideration that the shortfall was due to factors beyond the control of HCL, such as (i) the copper plant commissioned in August 1975 not having gone into regular production, (ii) the fertiliser plant expected to go into operation by August 1975 not having started because of mechanical failures and (iii) certain contractual disputes.

At the instance of Audit (December 1976), the Railway Administration referred (July 1977) the matter to the Ministry of Railways (Railway Board) who observed (March 1979) that the Railway Administration had failed to attach due significance to the guarantee deed, and directed that a claim be preferred even at that late stage on the ground that HCL had failed to give the requisite notice of 21 days about the happenings contributing to the shortfall.

Almost a year later, the Railway Administration preferred (February 1980) a claim for Rs. 1.26 crores on the basis of a rough estimate of the shortfall in railway revenue upto 1978-79 due to movement of traffic by road by the HCL (instead of on the basis of the quantum of traffic stipulated in the guarantee deed). Claim for 1979-80 is yet to be preferred (September 1981).

HCL refuted the claim of the Railway and raised (September 1980) a counter claim of Rs. 1.59 crores towards excess freight charges incurred by it on transporation of their goods by road, on the following grounds :

(i) repeated failures on the part of the Railway Administration to supply wagons as and when required by HCL,

(ii) long transit delays, particularly in respect of the consignments booked to Singhana, and damages to/pilferage of goods in transit, which affected running of plants adversely.

The Railway Administration thereupon informed (November 1980) the Ministry of Railways (Railway Board) as under :

(i) During the period 1976-77 to 1979-80 the inward traffic was only 13 wagons per day as against the committed traffic of 56 wagons per day. Even this meagre traffic was handled by HCL very slowly. Outward traffic was only 5 wagons per day as against 28 wagons guaranteed by HCL.

(ii) Outstanding indents of HCL at the end of each month were not many, and could have been cleared had inward wagons materialised to the extent guaranteed.

Further course of action is yet (September 1981) to be decided by the Ministry of Railways (Railway Board).

In the meantime an independent study made by Audit (July —August 1981) disclosed that during the period November 1975 to July 1981 (excluding the period from 17th September 1978 to 21st May 1980 for which records were not available) delays had occurred in the supply of wagons to HCL in a number of cases, as indicated below :

(i) Number of wagons supplied on the date required	345
(ii) Number of wagons supplied within 1 to 10 days thereafter	1245
(iii) Number of wagons supplied within 10 to 30 days	611
(iv) Number of wagons supplied after 30 days	19
Total	2220

The Railway Administration had not been generally working empties to the project, and hence only loaded wagons when released were being offered for back loading. While inward traffic of rock phosphate was normally received in open wagons, covered wagons were required by HCL for despatch of fertilisers and copper. This led to non-acceptance of the wagons offered to HCL, and the subsequent delays in the supply of wagons of the required type.

Though the line was opened to goods traffic on 15th June 1974, its financial results have not been evaluated by the Railway Administration so far (September 1981) on the ground that the line has not yet been opened to passenger traffic. As per final location survey, the Railway Administration had anticipated coaching earnings of Rs. 2.27 lakhs, Rs. 2.74 lakhs and Rs. 3.05 lakhs in the 1st, 6th and 11th year respectively, after opening of the line to passenger traffic. According to the Railway Administration (January 1979), however, running of a passenger train on this section was neither feasible nor justified.

A few other irregularities were also noticed, as indicated below :

(i) The Railway Administration started construction of two crossing stations in phase I of the work in contravention of the Railway Board's orders of October 1971. However, it sealed such works in September 1973 by which time expenditure of Rs. 0.73 lakh had already been incurred.

(ii) As the new line is being worked for goods traffic alone under "one engine only" system, electrical maintenance office and staff quarters created at a cost of Rs. 7.30 lakhs at Singhana Station are lying unutilised.

The following are the main lapses on the part of the Railway Administration in this case :

(i) The Railway Administration did not conduct in terms of the agreement, half yearly examination of

the records of the HCL during the period 1974 to 1979 with a view to verifying the quantum of traffic offered and preferring its claim in time against shortfall in Railway revenue. The delay resulted in accumulation of the Railway's claim to a large amount of Rs. 1.26 crores (upto 1978-79 based on movement of traffic by road instead of on shortfall in guaranteed traffic), which in turn led to counter claims by HCL.

(ii) Non-supply of covered wagons by the Railway Administration had resulted in traffic of fertilisers and copper products being diverted to road by HCL.

In consequence, the new line constructed at a cost of Rs. 2.38 crores to serve the Khetri Copper Project had not been able to achieve the purpose for which it was undertaken.

This para was issued to the Railway Administration on 7th November 1981; its reply thereto is still awaited (31st January 1982).

13. **Eastern Railway—Extra expenditure on account of concessions allowed to contractors—Buckland Bridge**

In connection with the construction of a pre-stressed girder road-over-bridge at Howrah (re-building of Buckland Bridge) estimated to cost Rs. 1.15 crores, the Railway Administration consulted (March/April 1971) two firms (A&B), known for their specialisation in piling work, who advised in May 1971 that driven cast-in-situ piling was not feasible in view of limited site facilities in the busy Railway yard having 25 KV overhead equipment (OHE).

Without examining the position further and obtaining any other expert advice, the Administration decided to go in for driven cast-in-situ piles and invited (1972) tenders on that basis, also giving option to the tenderers to quote alternative

designs also. The lowest tender of firm 'C' for cast-in-situ R.C.C. driven piles upto 18 metres length was accepted (October 1974) and the firm was awarded (December 1974) the entire work, both for piling and sub-structure/super-structure of the bridge, at a total cost of Rs. 1.15 crores. One of the special conditions accepted by the Administration provided that the contract was indivisible i.e. "no part of the work could be taken away from the contractor and given to other contractors without consent of the former".

The work was to be completed in all respects within 30 months from the date of the Railway's acceptance of the first design for the sub-structure to be submitted by the contractor within two months from the date of the award of the contract. The contractor, however, submitted two designs in April and August 1975 which were rejected by the Administration in August and September 1975 respectively. Thereafter, the Railway Administration engaged (September 1975) firm 'D' for testing of deep bored piles, at a cost of Rs. 10,000. The results of the test were found satisfactory, and finally became the basis for designing piles foundation. Bore piles of 560 mm upto the depth of 33 metres approximately as designed by firm 'D' were approved by the Railway Administration (November 1975). As the work of bored piles could not be executed by firm 'C', it approached (November 1975) the Railway Administration to have firm 'D' as the third party for carrying out the piling work.

In December 1975/January 1976, firm 'B' (one of the two firms whose advice in regard to feasibility of driven cast-in-situ piling for this work had been obtained initially) informed the Railway Administration that it had the necessary equipments to undertake the construction of long bored piles of adequate capacity, that it would provide bored piles 22" dia 70' to 110' long at a cost of about Rs. 8,000 per pile, and that it was agreeable to do the work in association with firm 'C'.

The Railway Administration consulted (June 1976) its Law Officer about the feasibility of checking the rates of firm 'D' for

piling work by making an independent reference to an outside contractor like firm 'B'. The Law Officer opined (June 1976) that there was no legal bar to ascertain the rates from an outside contractor but felt that, in view of the special condition regarding indivisibility of the contract, the Railway Administration's powers to take away a part of the contract from firm 'C' and get it done by another contractor had been narrowed down.

In December 1976, a tripartite supplementary agreement amongst the Railway Administration, firm 'C' and firm 'D' was entered into, in terms of which firm 'D' was entrusted with pile foundation portion of the work in accordance with the revised design, as an independent party, while the remaining portion like sub-structure/super-structure of the work remained with firm 'C'. The rate of firm 'D' as accepted by the Railway Administration worked out to Rs. 13,160 per pile, as against Rs. 8,000 per pile offered by firm 'B'. The resultant extra expenditure incurred by the Railway Administration stand assessed at Rs. 14.81 lakhs.

The following comments arise in this case :

(1) It was unnecessary on the part of Railway Administration to have agreed to the clause regarding indivisibility of the contract, particularly when even the design for the piling work had not been finally decided on. But for it, the Railway Administration could have availed of a lower rate for the piling work.

(2) The Railway Administration did not make any effort to negotiate with firm 'D' in order to have its rate for piling work brought down to the level of the lower rate offered by firm 'B'.

(3) The Railway Administration did not at any stage propose to firm 'C' to bring in firm 'B' instead of firm 'D' for piling work in order to avail of the lower rate offered by firm 'B'.

In March 1975, the Railway Administration made an advance payment of Rs. 1.44 lakhs to firm 'C' in accordance with a special condition in the contract (of December 1974) stipulating progress payments towards designs and drawings, recoverable from 'on account' bills at the rate of 10 per cent of the net payable amount and the balance, if any, from the final bills. The contract, however, did not provide for any bank guarantee to secure the Railway against possible loss in the event of the contractor's failure to submit a design acceptable to the Railway. (A provision for bank guarantee has since been incorporated in the supplementary agreement executed in December 1976 after this was pointed out by Audit in June 1976, but this would cover only advance payments made thereafter).

The contract with firm 'C' was terminated by the Administration in May 1977 due to the contractor's failure to furnish a workable design and drawings for the super-structure and a design of the loads for the foundation and also for its failure to adhere to the time schedule for the work and to employ competent and experienced engineers. Recovery of the advance of Rs. 1.44 lakhs could not be secured (June 1981) on termination of the contract, firm 'C' not having executed any work in the absence of any bank guarantee or any outstanding dues of the contractor against other works. The recovery is pending litigation in Calcutta High Court.

The work entrusted to firm 'C' was awarded (November 1977 and September 1978) to two other contractors at an extra cost of Rs. 10.39 lakhs and was completed on 31st December 1980.

The Railway Administration stated (October 1980) that, as per the termination letter issued in May 1977, firm 'C' had been notified of its liability towards the advance of Rs. 1.44 lakhs as also other expenditure which might be incurred in getting the work executed through other agencies or departmentally at its risk and cost, but the contractor had in the meantime moved the

Calcutta High Court on 21st May 1977 against the appointment of other contractors in his place. The judgement of the Court is awaited (June 1981).

This para was issued to the Railway Administration in August 1981; its reply thereto is still awaited (31st January 1982).

14. North Eastern, South Central, Southern and Northeast Frontier Railways—Insufficient time allowed for submission of tenders

The rules provide that all contracts over Rs. 10,000 (raised to Rs. 25,000 with effect from June 1979) in value should normally be placed after calling for tenders in the most open and public manner possible, and with adequate notice which in the case of large works should not be less than a month. In partial relaxation thereof, limited tenders can be invited in respect of works costing upto Rs. 5 lakhs each in the 'Open line' organisation of the Railways from contractors borne on the approved lists, provided the number of contractors borne on such lists is not less than 10. However, in case the number of approved contractors is less than 10 or the response from the approved contractors is not sufficient, or the market rates are to be tested, open tenders with a notice period of not less than 21 days have to be invited even in respect of works costing upto Rs. 5 lakhs.

A test check by Audit on a few Railways revealed that in a number of cases the actual notice period with reference to the publication of the notifications inviting tenders in newspapers was less than the prescribed minimum, as brought out in the succeeding paragraphs :

I. North Eastern Railway

Out of 166 tender notices of the Engineering Department published in newspapers, at a cost of Rs. 3.05 lakhs during April 1979 to March 1980, in 145 cases (87 per cent) relating to

works of the value of Rs. 575 lakhs, the notice period after publication in newspapers was less than the prescribed minimum of 21 days/one month. In four cases the tender notices had been published on the date of opening of the tenders or even thereafter; in eight cases the actual notice period ranged from one day to one week and in 26 cases from one week to two weeks.

The Railway Administration stated (August 1980) that (i) in the absence of advance indication it was not incumbent upon the press to publish the tender notices with adequate margin and that (ii) in future the tender notices would be sent to the Chief Public Relations Officer (CPRO) three weeks ahead of the due date for publication in the press.

II. **South Central Railway**

Out of 280 tender notices issued by the Engineering Department over the period April 1979 to March 1980, in 46 cases (17 per cent) relating to works of the value of Rs. 441 lakhs (including 27 works of over Rs. 5 lakhs each) the actual notice period was less than the prescribed minimum of 20 days/1 month. (Advertisement expenses: Rs. 72,000). The actual notice period was only one day in one case and from one week to two weeks in 10 cases.

The Railway Administration stated (December 1981) that necessary instructions had been issued (December 1980/January 1981) to all concerned to indicate the specific date(s) by which the tender notice(s) should be published in the newspapers and also provide for sufficient margin for delays in transit and publication.

III. **Southern Railway**

Out of 28 tender notices issued by the Engineering Department in Madras and Madurai Divisions during the period April 1979 to September 1979, in 18 cases (64 per cent) relating to works of the value of Rs. 102 lakhs (including 2 works of over Rs. 5 lakhs each), the actual notice period was from one to two

weeks in 7 cases and less than the prescribed minimum of 21 days/one month in the rest of cases. (Advertisement expenses : Rs. 37,000).

The Railway Administration stated (December 1981) that invitation of tenders in respect of works costing upto Rs. 5 lakhs was not mandatory and advertisements in newspapers was resorted to as an additional measure of publicity. This view is not tenable in view of the position brought in the introductory para.

IV. **Northeast Frontier Railway**

In all the 16 cases (Value: Rs. 50 lakhs) made available to Audit, the tender notices issued by the Engineering Department during the period April 1979 to September 1979, the notice period was less than the prescribed minimum of 21 days/ 1 month. (Advertisement expenses: Rs. 20,000). The actual notice period was upto one week in 7 cases and over one week to two weeks in six cases.

This was issued to the Northeast Frontier Railway Administration on 2nd December 1981; its remarks thereon are still awaited (31st January 1982).

Lack of adequate tender notice carries the risk of poor response by prospective tenderers which in turn can lead to the Railways not being able to secure competitive rates.

15. **South Central and Western Railways—Irregularities in invitation of tenders**

Three cases, noticed during test check, involving re-tendering without justifiable reason, and piece-meal tendering for works of the same type, which resulted in extra expenditure of Rs. 7.43 lakhs, are mentioned below :

I. South Central Railway

(i) *Petty and repair works*

Open tenders were invited in April 1979 for the annual sectional contract for petty and repair works (estimated cost: Rs. 9 lakhs) in Hyderabad-Maula Ali (BG) Section for the period July 1979 to June 1980. The tenders were opened on 25th May 1979, the lowest offer being 29 per cent above the Revised Standard Schedule of Rules, 1979 (RSSR) from contractor 'A' and valid upto 22nd August 1979. The Tender Committee decided on 25th July 1979 to negotiate with all the tenderers as the offers were considered to be on the high side, as compared to the rate of 21 per cent above RSSR accepted (June 1979) in the case of a contiguous section, Seethaphalmandi—Falaknuma, for the corresponding period. Negotiations were held on 29th August 1979 and the lowest negotiated offer valid upto Ist September 1979 was 24 per cent above RSSR from contractor 'B'. (Significantly, the accepted rate for Hyderabad-Maula Ali Section for the previous year 1978-79 too was 3 per cent higher than that for Seethaphalmandi-Falaknuma section). This also was not accepted by the Tender Committee who decided to conduct further negotiations on 3rd September 1979, despite the fact that the validity of the lowest tender had not been extended beyond Ist September 1979. Three parties attended the negotiations but did not reduce their rates. The Committee thereupon recommended (September 1979) retendering on the grounds that the rates received were on the high side, and that the area of the work had enlarged by subsequent extension of the section from Hyderabad to Sanatnagar.

Fresh tenders were invited on 27th September 1979. The lowest offer viz. 54 per cent above RSSR received from contractor 'A' was considered (December 1979) to be on the high side by the Tender Committee who recommended negotiations with all the tenderers. Negotiated offer (January 1980), viz. 49 per cent above RSSR, again received from contractor 'B' was finally accepted. Computed with reference to the rate of 24 per cent

above RSSR offered by the same contractor in August 1979, the award of the work in January 1980 at the re-tendered rate of 49 per cent above RSSR resulted in extra expenditure to the tune of Rs. 2.82 lakhs. No work, however, was done in the extended area of the section from Hyderabad to Sanatnagar during currency of the contract.

The following comments arise :

1. The lowest offer of 24 per cent above RSSR received in August 1979 for Hyderabad-Maula Ali Section, which was rejected, compared well with the rate of 21 per cent above RSSR already accepted for Seethaphalmandi-Falaknuma section for July 1979 to June 1980, especially considering that the rate accepted for the former in the previous year too was 3 per cent higher than that for the latter.

2. No work was actually done in the extended area of the section. As such, justification for retendering was on presumptive basis, being not supported by any data.

The Railway Administration stated (December 1981) that some individual works had been undertaken during the period September to December 1979 when there was no sectional contract, in which the rates accepted were not above 24 per cent over RSSR (the rate quoted by contractor 'B' in August 1979) and, as such, the savings achieved thereby had to be kept in view, while computing the extra expenditure. However, the Railway Administration could not quantify the amount of such savings.

(ii) *Provision of water proof material on roofs of Railway quarters*

Consequent on receipt of complaints from the staff of Guntakal Division about leaking of tiled roofs of their railway quarters, the Railway Administration decided (December 1978) to provide water proof material on these roofs. For this purpose, during the period from 27th December 1978 to 3rd August 1979, the

Railway Administration invited tenders thrice on 27th December 1978, 16th March 1979 and 3rd August 1979, and concluded four agreements at varied rates, as indicated below :

Sl. No.	Place	Date of tender notice	Date of agreement	Contractor to whom work entrusted	Quantity of work (M^2)	Rate per (M^2)
1	2	3	4	5	6	7
						Rs.
1.	Cuddapah Sub-Division	27-12-78	7-6-79	'A'	18,800	14.90
2.	Guntakal Railway Colony	16-3-79	7-6-79	'A'	6,020	14.90
3.	Renigunta Sub-Division	3-8-79	17-12-79	'A'	3,600	27.00
4.	Guntakal Sub-Division	3-8-79	4-2-80	'B'	2,150	27.30

On 26th July 1979, the Railway Administration had asked contractor 'A' whether he was prepared to execute an additional work (4,500 M^2) in Nandalur section of Cuddapah Sub-Division (Sl. No. 1 above) at the same rate (Rs. 14.90 per M^2) at which works at Sl. Nos. 1 & 2 had been awarded to him in June 1979 and he had agreed to it on the same date. However, without awarding the work to contractor 'A', the Railway Administration invited tenders for similar works, viz. those mentioned at Sl. Nos. 3 & 4 above, as also Nandalur section on 3rd August 1979. Seeing the tender notice, contractor 'A' withdrew his offer of 26th July 1979 on 18th September 1979. The work in Nandalur section was eventually awarded to contractor 'A' at the higher rate of Rs. 27 per M^2 in April 1980 as in the meantime the work at Sl. No. 3 had been awarded to him in December 1979 at that rate. The work at Sl. No. 4 as also an additional area of 7000 M^2 were awarded to contractor 'B' at the rate of Rs. 27.30 per M^2 in January and August 1980 respectively.

The rules provide that Railway buildings should be systematically inspected by the Inspector of Works/Assistant Engineer so that all repairs can be carried out in good time. Despite these provisions, the Railway Administration had failed to make an assessment of the total area requiring provision of water proof material in December 1978 when tenders were invited for the first time, or even in March 1979 when tenders were invited for the second time. In consequence, tenders were again invited in August 1979 and contracts were awarded in December 1979, January, April and August 1980 at higher rates involving extra expenditure of Rs. 2.11 lakhs.

The Railway Administration stated (May/November 1981) that the work in Cuddapah Sub-Division was taken up on an urgent basis as the problem was acute there, and that it was undertaken as a trial measure.

The work in Cuddapah Sub-Division, though claimed to be urgent, was awarded (May 1979) more than four months after invitation of tenders (December 1978); further it had not been described as a work undertaken as a trial measure either in the justification of the work or in the tender committee proceedings.

II. **Western Railway**

Pitching of breaches after restoration

According to the standard specification laid down in the Railway's Works Hand Book, the stone for pitching should be approved by the engineer-in-charge of the work, and no stone should be less than 15 cm in any direction and not less than 30 Kg in weight. However, in cases where this minimum weight condition cannot be satisfied due to locally available stone being of lower density, the minimum weight should be prescribed as a special condition in the contract and accepted by the engineer.

In connection with the the work of 'repairs to toe wall and pitching' for restoration of the breaches between Dholka and Koth Gangad stations in Bhavnagar Division, the Railway

Administration invited limited tenders in August 1977, stipulating the above standard specification. Tenders were opened in September 1977 and the lowest negotiated (October 1977) offer from firm 'A' was 321 per cent above the Schedule of Rates (SOR). However, on the ground that this rate was on the high side, open tenders were again invited in October 1977. This time the lowest negotiated (December 1977) offer was 320 per cent above SOR, again from the same firm 'A' with the special condition that rubble of 10 to 15 kg in weight would be supplied instead of 30 Kg as specified. During the negotiations all other tenderers also quoted the same special condition which was stipulated by firm 'A'. The Tender Committee held (December 1977) that the special condition of the tenderer involved change of specification and hence its acceptance was not within the competence of the Divisional Superintendent. These recommendations were accepted by the Divisional Superintendent and tenders were cancelled (December 1977), though the special condition laying down lesser weight of stone could have been accepted in terms of the provisions in the Railway's Works Hand Book. Open tenders were again invited in January 1978. The lowest offer this time was 315 per cent above SOR and all the offers were subject to the special condition that rubble of 10 to 15 kg would be supplied. These offers were also rejected in May 1978 on the same grounds as in December 1977.

Meanwhile, the Chief Engineer conveyed in June 1979 that 'where the minimum weight condition i.e. 30 kg of stone is difficult to satisfy, the minimum weight should be specified as a special condition in the tender by the tender inviting authority and no deviation therefrom permitted'.

Fresh limited tenders were invited in November 1979, and again open tenders in January 1980, mentioning therein the special condition 'that no stone shall be less than 15 cm in any direction and not less than 10 kg in weight and that no deviation therefrom shall be permitted'. The lowest negotiated offer at 781 per cent above SOR of the same firm 'A' was accepted, and

the contract valued at Rs. 4.78 lakhs was awarded in April 1980. This involved an extra expenditure of Rs. 2.50 lakhs in comparison to the lowest offer of 320 per cent above SOR received in December 1977 under similar condition.

Had the Railway Administration taken due note of the extant provision in the Railway's Works Hand Book, and acted accordingly, the extra expenditure incurred in this case could have been largely avoided.

This para was issued to Western Railway Administration on 2nd December 1981; its reply thereto is still awaited (31st January 1982).

16. **Southern Railway—Extra expenditure due to delay in execution of work**

The Ministry of Railways (Railway Board) had taken a policy decision (October 1968 and July 1969) for progressive introduction of multiple aspect colour light signalling on trunk routes and replacement of the existing signalling equipments, wherever needed on age-cum-condition basis. Pursuant to this policy, replacement of the two aspect lower quadrant signalling, which had been in use for more than 30 years on Ariyalur-Golden Rock section (metre gauge) of Madras-Tiruchirapalli trunk route, by multiple aspect colour light signalling was provided in the works programme for 1973-74 at an estimated cost of Rs. 52 lakhs to be spent over a period of four financial years upto 1976-77.

The initial estimate of cost (Rs. 52 lakhs) gradually went up to Rs. 89.60 lakhs as per the revised estimate sanctioned by the Ministry of Railways (Railway Board) in May 1978.

The Civil Engineering portion of the scheme comprised mainly construction of battery and relay rooms and provision of wooden sleepers in the track for panel interlocking at 11 stations and 9 level crossings on the section. While necessary action for

construction of relay and battery rooms was initiated immediately after sanction (July 1974) of the detailed estimate, the requirement of wooden sleepers was not even assessed till August 1976 for arranging their procurement. As a result, panel interlocking work commenced in November 1977 and was completed at 8 stations and 1 level crossing by October 1981, representing an overall physical progress of only 45 per cent over a period of about 8 years after sanction of the work. The balance work, according to the Administration, is likely to be completed by March 1982.

Compared to the overall physical progress of the work (45 per cent), the expenditure booked upto August 1981 for gazetted supervision, staff, etc. (Rs. 6.69 lakhs) and labour (Rs. 10.72 lakhs), representing 83 per cent and 88 per cent respectively of the corresponding provision in the revised estimate (1978) (Rs. 8.09 and Rs. 12.25 lakhs), would appear disproportionate and indicative of unproductive utilisation of staff etc. for about 8 years as against 4 years envisaged in the estimate for completion of the work. The delay in execution of the work also involved continued maintenance of certain operating staff (cost : Rs. 3.6 lakhs per annum), which were to be surrendered on completion of the work targeted in 1976-77, and retention of the old signal equipments in service, the replacement of which was justified (1973-74) on age-cum-condition basis. If continued retention of the old equipments was not beset with any setback in operation, the need for undertaking the costly replacement work would apparently be open to question.

The Administration stated (June and December 1981) :

(a) The delay in execution of the work was due to acute shortage of wooden sleepers, supply of which during 1972-73 to 1974-75 was about 30—35 per cent of the Railway's total requirements and the resultant meagre allotment for signalling works.

(b) The extra expenditure (Rs. 30.70 lakhs upto August 1981 over the original estimate which would go up

further on completion of the work), though necessitated by delay in execution, would have to be viewed with reference to the advance procurement of stores (Rs. 30.48 lakhs) and the resultant saving in cost compared to the present day prices, and

(c) The retention of the operating staff and old equipments was an inescapable necessity till completion of the work.

Following points, however, deserve mention in this context—

(a) The supply of MG wooden sleepers ranged between 33.6 per cent and 105 per cent of the Railway's requirements during 1972-73 to 1975-76 and with the progressive improvement in the supply position three other signalling works programmed (1970-71, 1972-73 and 1973-74) on the same trunk route could be completed between September 1975 and October 1977. The shortage of sleepers, allegedly resulting in delay in execution of this particular work, would seem to have been contributed by the absence of assessment of the requirement till August 1976 for planning the procurement.

(b) The advantage of advance procurement of stores has been largely offset by continued operation of the posts of the operating staff (cost : Rs. 3.6 lakhs per annum) which could have been surrendered in 1976-77 but for the delay in execution of the work.

CHAPTER V

EARNINGS

17. Northern, Southern and Western Railways—Loss of earnings/ undercharges of freight

I. Northern Railway : Loss due to incorrect computation of distance on account of closure of a transhipment shed

The Goods Tariff provides that, in the event of the shortest route, when also the cheapest, being partially or wholly closed for traffic, the traffic should be carried on the next shortest open route and charged accordingly. In such a case, the sender should give written and signed instructions on the forwarding note for charging freight by the next shortest/cheapest open route and the booking staff must make necessary endorsement on the Railway receipt and its counterfoil.

Prior to the conversion of the Bhatinda-Hanumangarh-Suratgarh Section from Metre Gauge to Broad Gauge, the traffic from and to stations on the Fazilka-Kotkapura and Sirsa-Bhatinda MG sections booked to and from BG destinations was being transhipped at Bhatinda and freight charged via Bhatinda being the shortest/cheapest route. Consequent upon opening of Bhatinda-Hanumangarh-Suratgarh BG line in May 1978, the Northern Railway Administration notified (November 1978), in accordance with the provision in Tariff that with effect from 1st October 1978, the Bhatinda transhipment shed had been closed and that the traffic should be routed and rated by the next shortest open route. As a result, the traffic by and large is being routed and transhipped via Hissar involving extra haulage of 13 km to 304 km.

During the inspection of two stations (Muktsar and Sirsa) conducted by Audit in September 1979 and January 1981, it was

noticed that, though the traffic from and to these stations to and from BG destinations was being routed and transhipped via Hissar, freight charges were being levied via Bhatinda, resulting in undercharges of freight to the extent of Rs. 1.57 lakhs during the period October 1978 to August 1980. This undercharge relates to only two stations ; the position in respect of other stations on the sections is yet to be investigated by the Administration.

The following were the lapses in this case :

(i) Although the Railway Administration had notified that with effect from 1st October 1978 Bhatinda transhipment point had been closed and the traffic would be routed and transhipped via Hissar and specifically instructed the stations in their notification that routing and rating of traffic should be done accordingly ; the stations continued to charge freight via Bhatinda.

(ii) There was failure on the part of the station staff to obtain necessary undertakings from the senders though required as per the rules.

(iii) This irregularity had not been detected by the Inspectors of the Commercial and Accounts Departments during their inspections of stations and by the Traffic Accounts Offices of all the forwarding Railways during their internal checks.

II. **Southern Railway**

1. **Non-utilisation of tank wagons due to delay in notification of calibration**

The rules prescribed by the Ministry of Railways (Railway Board) provide that all newly built tank wagons put on line should be got calibrated by the Tank Wagon Committee of Railways at

Bombay with their carrying capacity for loading and charging of freight of different oil products with reference to dip measurements recorded at different temperatures and that their capacity should be advised to the concerned Railways for notification through rate circulars (termed as calibration charts). Till such time the calibration charts are ready, freight on the consignments carried by the new tank wagons is to be levied provisionally on the basis of the nearest carrying capacity of a similar type wagon for the particular liquid for which the carrying capacity has already been notified, after obtaining an undertaking from the Oil Companies booking the consignments that they would pay the undercharges, if any, in case the calibrated capacity of the new wagon is found to be higher than that adopted for charging.

As per orders placed by the Ministry of Railways (Railway Board), a Calcutta firm was to supply 878 tank wagons between September 1979 and March 1981. These wagons were allotted to Eastern (375), Northern (108), Southern (275) and Western (120) Railways.

Against the above allotment, the Southern Railway received 29 tank wagons between October 1979 and March 1980 and placed them for loading at the Oil sidings at Tondiarpet Marshalling Yard from June 1980 onwards but on all such occasions the wagons were rejected by the Oil companies on the plea that they had not been calibrated. Some of these wagons were moved to other centres, such as Cochin Harbour Terminus etc. for possible utilisation ; but they were rejected there also and sent back to the base station viz. Tondiarpet Marshalling Yard. The wagons were either idling at the base station or running empty since June 1980 and the consequential loss in their earning capacity worked out to Rs. 3.30 lakhs upto December 1980. The wagons were eventually brought into use from January 1981.

The new wagons allotted to Northern (108) and Western (120) Railways though not calibrated were however being utilised since the date of allotment.

The lapses of the Railway Administration are mentioned below :

(i) The booking staff at the sidings had not followed the instructions regarding the loading of non-calibrated tank wagons. The Commercial and Accounts Inspectors of the Railways had not also detected these omissions.

(ii) The Commercial Branch had failed to notify, though required, the introduction of the newly built tank wagons ; such a notification would have facilitated utilisation of the tank wagons, the freight charges being collected on a provisional basis as per the extant rules.

(iii) The Southern Railway Administration had not made any report, though required, about the idling of the wagons for want of calibration to the authority concerned, namely, the Tank Wagon Controller, Bombay, who is to calibrate these wagons.

(iv) Though the tank wagons had been ordered in September 1978, with delivery to commence from September 1979, timely arrangements for their calibration, etc. for notification of their carrying capacity for charging freight had not been made. All the oil tank wagons in question are yet to be calibrated (December 1981).

2. **Loss of earnings due to detention of wagons**

The Nilgiris Mountain Railway (N. M. Railway) is an unremunerative metre gauge line from Mettupalaiyam to Ootacamund (actual distance 45.88 km ; chargeable distance 460 km). Goods traffic bound for stations to and from stations on this branch line are transhipped at the Mettupalaiyam Broad Gauge Terminal, served by adjacent yards of Coimbatore and Podanur on the Broad

Gauge main line. The metre gauge branch line from Mettupalaiyam has the following capacity constraints also :

(i) train capacity is limited to 45 tonne or two wagon loads ;

(ii) traffic on the section often remains suspended during monsoon period due to land slips etc ;

(iii) the stacking space at Mettupalaiyam is inadequate resulting in slow release of loaded wagons and consequent detention.

The Uneconomic Branch Line Committee, 1969, which enquired into the working of the section, had recommended that the section should be closed for goods traffic and all goods traffic worked as out-agencies from Mettupalaiyam i.e. the goods traffic to stations on N.M. Railway should be carried by road from Mettupalaiyam.

During review by Audit of the goods traffic in this section from April 1978 to January 1981, it was noticed that, despite the restriction imposed in March 1978 on all goods traffic including Military traffic in wagon loads to stations on the N.M. Railway, traffic in wagon loads continued to arrive at Mettupalaiyam. Further, there were heavy detentions to these wagons at Mettupalaiyam, Coimbatore and Podanur as the goods could not be unloaded for want of stacking space at Mettupalaiyam.

During the above period 375 BG wagons with consignments for stations on the N.M. Railway had been detained at the above stations for periods ranging from 6 to 113 days involving in all 9258 wagon days ; the average detention per wagon working out to 25 days. At the same time indents for 1315 wagons, mostly for high rated commodities such as wood pulp, betelnuts, etc. for upcountry destinations, had been pending from time to time. The loss of revenue to the Railways due to these detentions was assessed as Rs. 5.87 lakhs.

A further review (December 1981) by Audit of detention to wagons at Mettupalaiyam revealed that during February to November 1981, 199 wagons had been detained for periods ranging from 6 to 58 days involving 2665 wagon days and loss of revenue of Rs. 1.69 lakhs.

The Ministry of Railways (Railway Board) stated (January 1982) that orders had been issued by the Administration for permanent closure of the section for goods traffic with effect from 29th August 1981. The Ministry of Railways further stated that there was hardly any space left for augmentation of the stacking space at Mettupalaiyam and that detention to wagon was inescapable.

The following points need consideration in this case :

(i) Despite the known capacity constraints, the Railway Administration continued to provide for movement of goods traffic by rail on this section. Even when restrictions were imposed, the Railway Administrations failed to take note of these while accepting traffic for booking.

(ii) Despite the dumping of goods at Mettupalaiyam being found necessary periodically, suitable arrangements for providing either additional stacking space at the station or other alternative arrangements such as transport of goods by road, as alternatives to hold up of BG wagons, had not been considered.

(iii) The Rail Tariff Enquiry Committee had recommended the setting up of a study team to examine the various alternatives in respect of traffic on this section, including programme of replacement of rolling stock, track etc. Action on the recommendation is yet to be taken (December 1981).

III. Western Railway : Short realisation of freight charges

The Rules in the Goods Tariff provide that freight charges for commodities, in respect of which the carrying capacity of the wagon has been prescribed as the minimum weight condition for booking in wagon loads, are to be levied on the basis of the marked carrying capacity of the wagon plus 4 tonnes (effective from 1st July 1964) when carried in standard *BG bogie rail trucks (BFRs). However, where these commodities are carried in non-standard BFRs*, which are marked with a four pointed white star and have the figures of the carrying capacity painted on** both sides of the wagons, no overloading is permissible, and freight is to be levied on the basis of the marked carrying capacity only. A specific remark about the wagon used being non-standard is also to be made on the railway receipt, invoice, etc.

A test check in audit of the records of outward traffic of Indira Dock and Grain Depot (May 1978 and March 1981), Victoria Dock and Manganese Depot (October 1978) and Wadala Depot (March 1981) stations on the Bombay Port Trust Railway which is governed by the tariff rules of Indian Railway Conference Association (IRCA) for the period from October 1975 to October 1980 disclosed that in several cases the Railway receipts and invoices carried no remark that the wagons used were non-standard and yet freight had been charged treating the wagons as non-standard wagons resulting in under loading by 4 tonnes and consequential short recovery of freight charges amounted to Rs. 90,708 in respect of both local and foreign traffic.

The Railway Administration stated (October 1980) that it was not possible for the station staff to distinguish standard and non-standard wagons in the absence of star marking on the wagons.

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*Standard wagons are wagons built according to specification approved by RDSO. Non standard wagons are wagons built before finalisation of standards.

**The marking and painting are to be done by the workshops during POH.

A list of non-standard BFR wagons used all over the zonal Railways was notified for the first time by the Southern Railway Administration in May 1979, prior to which there were no records to identify non-standard BFRs. As already stated, the rules provide that non-standard BFR wagons should bear a four-pointed white star along side the figure of carrying capacity on both sides.

The following omissions in the observance of the prescribed procedure were noticed in this case :

(i) There had been failure on the part of the Railway Workshops to mark all non-standard wagons with white stars. Further, no list of non-standard wagons had been prepared and notified till May 1979 by the concerned Railways.

(ii) The Bombay Port Trust Railway stations had failed to indicate in the invoices as to whether the wagons had star markings and were non-standard etc., after physically examining the wagons as per rules.

(iii) The destination stations of Zonal Railways too had failed to realise the undercharges in the absence of specific remarks on the invoices/railway receipts, before delivering the consignments.

(iv) The Commercial and Accounts Inspectors had also failed to detect the irregular practices during their periodical checks.

(v) Central internal check of freighting had also failed to detect the undercharges.

The above mentioned cases indicate laxity in application of tariff rules by station staff and inspections by Inspectors and supervisory officials.

18. **Diesel Locomotive Works—Delay in revision of rate of recovery of electricity charges**

In Para 31 of the Advance Report of the Comptroller and Auditor General of India for 1979-80—Union Government (Railways), mention was made of the inordinate delay in revision of rate of recovery of electricity charges from the Railway employees on South Eastern Railway. A similar case of delay in revision of rate of electricity charges since noticed in Diesel Locomotive Works (DLW) is mentioned below.

DLW has been purchasing electricity from the Uttar Pradesh State Electricity Board (UPSEB) at different rates for consumption in the staff colony and in the factory, the rate for the former being all along higher than that for the latter.

Pursuant to the Ministry of Railways (Railway Board)'s directive (January 1972) not to pool the lower rated workshop consumption for working out the rate chargeable from the staff, DLW notified (April 1973) a recovery rate of 24 paise plus 25 per cent electricity duty per unit (*i.e.* 30 paise per unit) for residential consumption, based on power house cost sheets prepared separately for colony and factory consumption. The rate so fixed was identical with that levied by the UPSEB for colony consumption and continued to be charged from the employees without any revision till January 1980, even though the UPSEB's tariff for domestic consumption had, in the intervening period, undergone successive upward revisions (from 30 paise to 53 paise per unit).

According to the revised tariff of the UPSEB, the rate for domestic consumption was about 40 paise per unit till June 1975. Apprehending possible difficulties in recovery from the staff of electricity charges at higher rate, there was re-thinking (November 1976) in DLW whether the rate of recovery from the staff should be worked out by preparing a common power house cost sheet for colony and workshop or separate cost sheets for each. Pending a decision in the matter, power house cost sheets for the period

June 1975—December 1977 were not prepared and consequently the recovery rate of 30 paise per unit (fixed in April 1973) continued to remain unrevised to correspond to the rates at which supplies from UPSEB were paid for.

Based on the power house cost sheets for the subsequent period (January 1978—December 1979) finalised in January 1980, DLW arrived at a rate of 45 paise per unit with reference to the UPSEB's tariff for domestic supply and another unified rate of 40 paise per unit, taking into account the workshop and colony consumption together.

The lower rate of 40 paise per unit (effective from January 1980) was adopted (February 1980) for recovery of electricity charges from the staff, on *ad hoc* basis subject to approval of the Ministry of Railways (Railway Board), which, however, was sought by DLW about two years later in December 1981.

The belated revision of the rate of recovery and that too on a basis different from that laid down by the Ministry of Railways (Railway Board) resulted in avoidable loss of Rs. 5.73 lakhs in supply of electricity to the staff for the period January 1975—June 1981.

The case was referred to DLW Administration in July 1981; its reply is still awaited (February 1982).

CHAPTER VI

ESTABLISHMENT MATTERS

19. Implementation of ten hour duty rule for running staff

I. Introduction

19.1 The demand of the staff unions for curtailment of the overall limit of duty hours at a stretch of the running staff (viz Drivers, Shunters, Firemen, Guards and Brakesmen, etc.) from 14 to 12 had been referred to a Railway Labour Tribunal (1969). It had recommended (July 1972) that the running duty at a stretch should not exceed 10 hours but might be extended upto a maximum of 12 hours subject to two hours notice being given by the Railway Administration before expiry of 10 hours and that the overall duty hours from 'signing on' to 'signing off' should be progressively reduced from 14 to 12 over a period of 8 years. However, the Ministry of Railways (Railway Board) decided (August 1973) that the running staff would not be required to work for more than ten hours at a stretch from 'signing on' to 'signing off' and that the ten hour duty rule would be implemented in a phased manner by December 1976.

19.2 A review in audit of the implementation of the ten hour rule on the Railways revealed the following :

II. Planning Cell

19.3 For planning and creation of infrastructure facilities (viz running rooms, staff quarters, line capacity works, yard communication arrangements, etc.) required for implementation of the ten hour rule, the Ministry of Railways (Railway Board) sanctioned (November 1973) two Junior Administrative grade

posts (viz a Dy. COPS and a Dy. CME) for each zonal Railway and also authorised the latter to create necessary supporting staff. The cost of these planning cells (each comprising two J.A. grade officers and about *21 NGOS) on the Railways was about Rs. 10.60* lakhs per annum. Notwithstanding that all passenger trains and 85 per cent of the goods trains had been covered under the ten hour rule by September 1977, the planning cell with full complement of staff (except for a J.A. grade post surrendered in April 1979) continued to be operated on each Railway till April/May 1981.

19.4 The progress of implementation of the ten hour rule being cent percent for passenger and 80 per cent for goods trains by January 1978, the Western Railway informed (February 1978) the Ministry of Railways (Railway Board) that extension of the two J.A. grade posts beyond April 1978 was not necessary but that in lieu a skeleton cell (consisting of an operating officer in Group B, one Inspector and a Senior Clerk) be created for 6 months to stabilise the implementation of the ten hour rule. Within two months, however, the Railway got (April 1978) the posts extended by the Railway Board on grounds of unsatisfactory position of implementation of the ten hour rule. Later, on the Railway Board ordering (April 1979) surrender of the post of Dy. COPS, the Administration urged (May 1979) for its continuance as an operational necessity, in lieu of the post of Dy. CME, if necessary. The J.A. grade post of Dy. COPS on its revival (July 1979) was, however, exchanged by the Administration with the Senior Scale post of Secretary to General Manager, the latter being instead upgraded to J.A. grade.

19.5 Had the skeleton cell, as proposed (February 1978) by the Administration, been operated with a Senior Scale officer as actually deployed (August 1979), instead of continuing the Planning cell with its full complement, there would have been a saving of about Rs. 1.81 lakhs per annum in staff cost.

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*Average of Western, Northern, Southern & Northeast Frontier Railways. Position of other Railways not readily avalable.

III. Construction of infrastructure facilities

Running rooms

19.6 With a view to providing resting facilities for the crew on completion of their ten hour duty, 139 running rooms were constructed during 1976-77 to 1978-79 on seven Railways at a cost of Rs. 134.78 lakhs. The Ministry of Railways (Railway Board) had issued instructions in February 1976 that the Railways should keep in view the likelihood of dieselisation of sections where running rooms and quarters were being developed exclusively for a few steam trains as diesel trains would not require such facilities. These instructions were, however, not observed in several cases thereby rendering the facilities created redundant or unnecessary. Out of 139 running rooms, 51 (cost Rs. 88.13 lakhs) on six Railways had become redundant soon after their completion or commissioning or after limited use for a short period. It would appear that the facilities had been planned without adequate examination of available data regarding running time of goods trains or without proper trials for a realistic assessment of the running time. Instances of facilities created and rendered redundant and the infructuous expenditure incurred thereon are mentioned below :

(i) On Western Railway, running rooms (at Amalner, Sujalpur and Ukaisongarh), though not considered (February 1976) necessary by the operating branch in view of likely dieselisation, were constructed (December 1976, August and September 1977) and commissioned (March/April 1978) for change of crew, which was discontinued except for a shunting train, that too not running regularly, on introduction (August 1979/September 1980) of diesel traction rendering the facilities created (cost Rs. 10.97 lakhs) redundant. On discontinuance of crew change, the additional loop lines (cost Rs. 24.21 lakhs) constrtucted at Sujalpur and Amalner also became redundant. 30 running room staff (cost Rs. 1.28 lakhs per annum) are being employed for maintenance of these redundant running rooms.

The running rooms at Kishanganj, Dimapur and Chaparmukh (cost Rs. 9.98 lakhs) on Northeast Frontier Railway became surplus to requirements due to their construction having been taken up without taking into account prospective dieselisation (Katihar division)/the fact that 67 to 80 per cent of the goods trains completed runs within ten hours and/or without examining the possibility of all goods trains being brought under ten hour working by reducing pre-departure detentions etc. as confirmed by subsequent (August and September 1976) line inspections and trial runs.

The completion of run within ten hours by BG shunting trains and working of MG trains with double set of crew and rest vans rendered the construction (April 1977) of a running room (cost Rs. 2.27 lakhs) at Fakiragram also unnecessary.

(ii) Again, due to construction being taken up on Southern Railway without keeping in view prospective dieselisation (Palghat and Madurai Divisions) and ignoring the availability of such facilities at adjoining stations (Madras Division) on the ground that such facilities, if rendered unnecessary, would be converted into staff quarters, ten running rooms (cost Rs. 6.45 lakhs) became redundant. Conversion of five units (Palghat—2, Mysore—3, cost Rs. 1.90 lakhs) into staff quarters, as originally contemplated, is however, still (November 1981) awaited, while the other five units (cost Rs. 4.55 lakhs) were put to alternative use as office and residential accommodation in April 1981 after remaining idle since completion (December 1976/March 1977/ March 1979). While three units (cost Rs. 1.56 lakhs) in Mysore division remain unused, 22 general service coaches and seven second luggage and brake vans were utilised (November 1980—May 1981) for working trains with double set crew and crew rest vans. The loss of earnings due to such use of passenger coaches as crew rest vans (calculated at average vehicle kilometre per day and earnings per coach per day) would work out to about Rs. 32.51 lakhs per annum.

(iii) On Central Railway 13 running rooms (cost Rs. 13.88 lakhs), though not considered necessary in view of the Ministry of Railways (Railway Board) suggesting reduction in the proposed facilities, had to be completed because of their being in an advanced stage of construction after having been taken up prior to approval of the Project Report. Four out of these 13 running rooms have since been converted (cost Rs. 0.26 lakh) into staff quarters and the remaining units are partially utilized as running rooms. The running room (cost Rs. 5.30 lakhs) at Jagdalpur on South Eastern Railway became redundant consequent on the Administration's decision (March 1977) to split Waltair-Kirandul section into two crew lengths as against three decided earlier without conducting any trial/experimental runs. Ten members of staff are being employed since various dates between September 1979 and March 1980, incurring expenditure of Rs. 0.53 lakh, upto March 1981, for the maintenance of this redundant running room. Further, a residential building at Kamptee, utilised as rest room from April 1973, was converted (cost Rs. 0.79 lakh) in 1976-77 into running room and reconverted (cost Rs. 0.22 lakh) into staff quarter following a decision (May 1978) to provide a running room at Tumsar Road.

The position regarding effective utilisation of the facilities created on other Railways is not readily available. Expenditure on repairs and maintenance of the surplus running rooms is not separately available, as this is booked under one head for all service buildings.

Staff Quarters

19.7.1 Staff quarters (218 nos.) were constructed on the Western Railway from 1978 onwards at a cost of Rs. 54.67 lakhs for the additional staff (475 nos.) sanctioned for crew change at intermediate stations. With discontinuance of crew change at intermediate stations due to progressive dieselisation, improved running conditions etc. the staff quarters became surplus to requirements of the ten hour working.

19.7.2 For the running staff to be based at Jagdalpur being one of the three crew changing points decided (July 1974) for the Waltair-Kirandul section of South Eastern Railway, provision was made for construction of 106 quarters. After 52 quarters had been completed by March 1977, the Administration decided, on the basis of certain trials and experiments, to split the section into two instead of three crew lengths as originally contemplated ; nevertheless, it completed (October 1977) the remaining 54 quarters also. All the 106 quarters (cost : Rs. 48 lakhs) are lying unutilised (September 1981) apparently due to lack of proper planning and without timely trials and experimental runs.

Signalled Loops

19.8 To facilitate mid-section crew change, the Southern Railway Administration constructed (September/October 1976) two additional loops (cost : Rs. 18.12 lakhs) at Karur and Kulitalai stations on Erode-Tiruchirapalli section where the incidence of goods train crew exceeding ten hours had been ranging between 25 and 48 per cent during June to October 1974. During audit inspection (June 1981) it was observed that crew change was not being made at these stations, nor was there any utilisation of the newly laid loops except for occasional receiption of goods trains and stabling of passenger and goods vehicles while other lines remained vacant/partly occupied. The additional loops thus proved infructuous since, even without their use, the progress of ten hour working was 75.5 to 95.1 per cent for diesel and 48.5 to 85.9 per cent for steam trains during 1980.

Yard Communication facilities

19.9 With a view to enabling the yard control cell to function effectively for formation of outgoing trains with least detention to stock in yard and timely arrangement of crew and locos, communication facilities (cost : Rs. 5.97 lakhs) were set up (March 1977) at Jolarpettai, Ernakulam and Bangalore City area of the Southern Railway. The facilities at Jolarpettai completed (cost : Rs. 3.07 lakhs) in March 1977 and handed over to the

Operating Department in July 1978 could not be put to use so far (September 1981) as the control phone facilities "are not in good working order". The facilities (cost : Rs. 2.90 lakhs) at other two places have not also proved effective in reducing late start of goods trains, which for BG/MG services was 3300/4067 and 2097/2865 hours respectively in December 1979 and March 1981 as against the best results of 743 hours (BG) and 2075 hours (MG) achieved in April/May 1974.

Provision of Lobbies

19.10 After 88 per cent progress had been achieved (September 1977) in implementation of the 10-hour duty rule on Northern Railway, six lobbies (cost : Rs. 3.14 lakhs) were constructed during 1978—1980 for constant review of train arrangements and crew booking so as to ensure that the crew was called for duty very close to the actual departure of trains. A review in audit of crew booking in Delhi division for four selected months (December 1979, August 1980, December 1980 and March 1981) indicated that in 25 cases the crew was called for duty but 'booked off' after a period exceeding ten hours without performing any running duty due to non-start of trains for long hours, involving loss of about 313 man hours. Further, for want of timely arrangement of crew, 126 trains had been delayed in Tughlakabad yard during the selected four months by 1 hour 44 minutes to 3 hours 17 minutes on an average although the nominated paths were available for running the trains.

Mid-section crew changes resorted to for ten hour working on long sections also resulted in detention to trains in Delhi division and the loss of earning on this account would work out to about Rs. 1.36 lakhs for the selected four months.

Provision of Mini Buses

19.11.1 With a view to quickening the transit of running staff from loco sheds/stations to trains and vice-versa 15 mini buses (Matador) costing Rs. 7.10 lakhs approximately were purchased in 1976-77 and distributed to various divisions of the Northern

Railway. Four more mini buses (cost : Rs. 2.60 lakhs) procured in 1980-81 for use in different sheds were retained in Delhi division in addition to its existing fleet of four buses and three jeeps for ten hour working rule. A review in audit of the log books of the vehicles in Allahabad and Delhi divisions revealed that these, besides remaining under repairs for long periods, were mostly used as staff cars by the Officers. Despite the availability of eleven vehicles in Delhi division, crew could not be arranged in time at the crew changing points, resulting in detention to trains and consequent loss of earnings of Rs 4.01 lakhs for four months between December 1979 and March 1981.

19.11.2 On South Eastern Railway, three out of nine mini buses (cost : Rs. 4.26 lakhs) procured in November 1976 had to be stabled fraquently for repairs of defects developed soon after their commissioning (December 1976) in Kharagpur division and finally grounded in July 1977 (1 no.) and November 1978 (2 nos.) on the ground that these were actually pick up vans unsuitable for carrying crew with their boxes, especially on the road leading to Nimpura marshalling yard. Two more mini buses in Chakradharpur division also went (February 1979 and July 1980) out of order within 2—3½ years of their being put to use (December 1976). Five mini buses (cost : Rs. 2.31 lakhs) having thus remained out of use, the Administration had to resort to hiring of trucks for transportation of crew, guards etc., involving an additional expenditure of about Rs. 4.88 lakhs upto March 1981.

Scope of 'Running duty'

19.12.1 Running duty at a stretch is to be calculated from actual departure of the train till its arrival at destination as per the Railway Servants (Hours of Employment) Rules, 1961 issued under the Indian Railway Act. However, for implementation of the ten hour rule, the Ministry of Railways (Railway Board) had directed (August 1973) the Railways that ten hour

running duty should be computed from 'signing on' to 'signing off'. Later, in October 1978, when running rooms and other infrastructure facilities had, by and large, been developed on the Railways, instructions were issued by the Railway Board that the time spent on non-running duties (*e.g.* travelling spare on duty or waiting at station for returning to headquarters etc.) would not count for ten hour duty at a stretch. These instructions were withdrawn in March 1979 but reintroduced in April 1981. The effect of this belated decision for exclusion of non-running duties, including pre-departure and post-arrival detentions etc., for the purpose of reckoning ten hour duty at a stretch on the surplus position of running rooms and other facilities is yet to be computed by the Railways (October 1981).

19.12.2 When ten hour duty is computed from 'signing on' to 'signing off' the effective running duty may not be significant enough unless pre-departure and post- arrival detentions and other unproductive time are suitably regulated. A review in audit for four selected months (December 1979, August 1980. December 1980 and March 1981) revealed that on certain sections of Delhi division while the effective hours on line were even less than one hour, the total duty hours of the crew exceeded ten hours mainly due to heavy pre-departure and post-arrival detentions which in 4 cases were 515 hours against 17.52 hours spent on road.

IV. *Provision of additional staff*

19.13.1 Taking into account the overall progress (45 per cent) of implementation of the ten hour rule by March 1976, the requirement of additional non-gazetted staff for completing the balance work was assessed at 5,300, involving expenditure of Rs. 4.45 crores per annum. The proposal (June 1976) of the Ministry of Railways (Railway Board) to create these additional posts in relaxation of the then existing ban on creation of new posts was not, however, agreed to (September/October 1976) by the Finance Ministry on grounds, *inter alia,* that (i) step up in non-Plan expenditure would erode the Railways' resources

for the Plan, (ii) the Government need not go in for reducing the working hours below what had been awarded by the Tribunal (1969) and (iii) the agreement (August 1973) reached with the unions by the Railway Ministry could not be held binding after the May 1974 strike. The ban on creation of new posts having later (May 1977) been relaxed in respect of operational and maintenance staff, the additional staff requirement was reworked out (October 1977) at 2,700 (1,581 running and 1,119 non-running staff) keeping in view the progress since made in the implementation of ten hour rule. These additional posts (cost : Rs. 2 crores approximately per annum), of which non-running staff (*e.g.* Wagon Movement Inspector, Stock Clerk, Loco Foreman, Fitters, etc.) constituted about 70 per cent of the running staff, were sanctioned (December 1977/January 1978) by the Ministry of Railways (Railway Board) with the concurrence of the Finance Ministry, with a rider that overtime payments for ten hour working should be brought down.

19.13.2 In view of 90.2 per cent implementation having already been completed on Northern Railway, creation of only 170 posts of non-running staff was authorised (December 1977) by Ministry of Railways (Railway Board) but the Railway Administration actually operated 674 running and 472 non-running posts since various dates from July 1974. The cost of this staff works out to about Rs. 465.46 lakhs upto June 1981.

19.13.3 Inspite of deployment of additional staff on the Railways there was a deterioration instead of any tangible improvement in the overall progress of implementation of ten hour working, which was 84.2 per cent to end of March 1981 as against 85 per cent in September 1977 and 83 per cent in December 1977. Nor has there been any reduction in overtime payments. While the overtime payments (Rs. 35.3 lakhs) in September 1980 to the running staff on South Eastern Railway registered about 100.5 per cent increase over those (Rs. 17.2 lakhs) in September

1977, the increase on Southern and Northern Railways during 1980-81 was about 23 and 17 per cent respectively over the payments in 1977-78. The payments on Western Railway reached an all time high figure of Rs. 66.93 lakhs in 1980-81, indicating 19 per cent increase over Rs. 56.20 lakhs in 1977-78. Thus, the objective of creating additional posts for achieving full implementation of ten hour duty rule and reduction in overtime payments has, by and large, remained unrealised.

V. *Summing up*

(i) The planning and programming cell was operated on the Railways with the full complement of staff without suitably correlating it with the periodical progress of implementation of the ten hour rule.

(ii) 51 running rooms (cost : Rs. 88.13 lakhs) have become redundant for ten hour working on six Railways, where information is available, due to defective planning and programming of construction.

(iii) Ancillary facilities like signalled loops (Cost : Rs. 18.12 lakhs) and yard communication facilities (cost : Rs. 5.97 lakhs) on Southern Railway, and mini buses (cost : Rs. 9.70 lakhs) and lobbies (cost: Rs. 3.14 lakhs) on Northern Railway have proved ineffective for ten hour working. Five mini buses (cost : Rs. 2.31 lakhs) having remained out of order on South Eastern Railway, additional expenditure on truck hire charges continues to be incurred for transportation of crew.

(iv) For 19 surplus running rooms on Western Railway 30 supporting staff continue to be maintained involving expenditure of Rs. 1.28 lakhs per annum.

(v) The belated decision for exclusion of predeparture and post-arrival detentions, etc. for computation of ten hour duty at a stretch is likely to render more number of running rooms, other facilities and staff surplus.

(vi) Despite the provision of various facilities, there was failure in arranging timely availability of crew at mid sections, resulting in heavy detention in starting trains. Crew change at mid sections for ten hour working also involved heavy en-route detention to trains.

(vii) As observed by the Ministry of Finance (September/ October 1976), ten hour working from 'signing on' to 'signing off' as decided (August 1973) by the Ministry of Railways (Railway Board) involved reduction in working hours of running staff compared to what had been recommended by the Tribunal (1969).

(viii) The operation of additional posts (cost about Rs. 200 lakhs per annum) has not fulfilled the objective of achieving full implementation of ten hour working rule and reduction in overtime payments. The additional posts operated on Northern Railway are in excess of those authorised by the Railway Board, involving Rs. 66.50 lakhs, while overtime payments have increased from Rs. 17.20 lakhs (September 1977) to Rs. 35.30 lakhs (September 1980) on South Eastern Railway, Rs. 56.20 lakhs (1977-78) to Rs. 66.93 lakhs on Western Railway (1980-81) and by 23 and 17 per cent on Southern and Northern Railways.

The case was refered to the Ministry of Railways (Railway Board) on 10th November 1981, their remarks are still awaited (February 1982).

20. **Metro Railway—Employment of depot staff for clearence work at goods sheds**

The staff of the Metro Railway Stores Depot at Patipukur are deployed on various duties connected with the clearance of cement consignments at Chitpur Ghat and Shalimar Goods Sheds. Handling of cement bags from their receipt in wagons

to their stacking in stores depots at Patipukur and Maidan is got done by contractors. Cement to be stocked at Brace Bridge Depot is booked to the depot siding and unloaded there for stacking in the depot.

A review in audit of the deployment of the staff for a period of 44 months from May 1978 to December 1981 disclosed that a large number of casual staff borne on the depot strength had been deputed regularly to the goods sheds for attending to "Unloading and transportation of cement consignments" and "for receiving cement", and that even on days when no wagons of cement consignments were placed for unloading at the rail heads they had been deputed and booked to work on overtime basis as well.

As may be seen from the under-mentioned particulars of the staff booked and the expenditure incurred on them during the period from May 1978 to December 1981, in Chitpur Ghat Goods Shed out of 1092 days on which the staff were deputed and expenditure incurred on employment of casual staff, on 921 days no wagons had been placed for unloading. Similarly at Shalimar out of 215 days on which the staff were booked, no wagons had been received on 151 days.

Name of Goods Shed	No. of days on which staff were deputed	No. of days on which wagons not placed	Staff booked in man days		Expenditure in Rupees	
			Regular	Casual	Regular	Casual
Chitpur Ghat	1,092	921	2,488	3,957	97.225	77.370
Shalimar	215	151	546	745	26.087	24.036
Total	1,307	1,072	3,034	4,702	1,23,312	1,01,406

On an average, while the casual staff were deployed on 24 days in a month, wagons had been placed for unloading on 4 days only.

The fact that the casual staff had been booked for work at Goods Sheds even on days when no wagons were placed for unloading would indicate that the booking had been done in a routine manner without ascertaining the need and requirement therefor. The expenditure incurred on casual labour booked on days when no wagons were placed, amounting to Rs. 1.01 lakhs, has, therefore, to be considered largely as infructuous and avoidable.

The Administration stated (November 1981) that booking of casual staff to rail heads was necessary for ascertaining the position in regard to arrival of wagons at the goods sheds on receipt of intimation of despatch by consignors and for attending to departmental responsibilities like taking delivery, joint tally, etc. The Administration further stated that in view of the need for releasing wagons within the free time of five hours, the entire complement of staff had to be in readiness in advance whenever a consignment was expected. The supervisory and clerical staff provided were stated to be not sufficient to do these works by themselves without the assistance of casual staff. The overtime paid was, it was added, insignificant compared to the volume/value of material handled.

It is, however, difficult to see how employment of casual staff to assist the regular staff, on days other than when wagons were placed for unloading except may be for a day or two on either side, can be justified.

In this connection, the Financial Adviser and Chief Accounts Officer had pointed out (September 1980) that the commercial and chasing functions would at the most be concentrated during a couple of days before the date of receipt of the consignments and one or at the most two days after receipt thereof and added that what had happened was that even in between the receipt of two consignments, some times after intervals of more than 2 to 3 weeks, a number of staff had been continuously booked to the station and paid daily allowance, travelling allowance and

even overtime. The General Manager thereupon appointed (September 1980) a committee of two Senior Scale Officers to go into the question of booking of staff to the goods sheds and to suggest ways and means for so regulating the booking that the payment of travelling allowance, daily allowance, overtime etc. was kept to the minimum. The Committee was required to give its report within six weeks i.e. by November 1980. The report submitted in January 1982 is stated to be under examination. Meanwhile, the practice of booking casual staff even on days when no wagons were placed for unloading at the railheads was continuing.

CHAPTER VII

OTHER TOPICS OF INTEREST

21. South Central Railway—Vijayawada—Gudur Railway Electrification

I. Introduction

1. For faster movement of traffic and reducing the movement of coal and diesel oil tank wagons, the Ministry of Railways (Railway Board) sanctioned (September 1972) a project for electrification of the section between Madras and Vijayawada on the Madras—Delhi trunk route [484 route KM (RKM)/ 1125 track KM (TKM)] at an estimated cost of Rs. 3342 lakhs. After the work was taken up (October 1972) by the South Central Railway, the Ministry of Railways (Railway Board), in accordance with their policy that each Railway should execute its own work, as far as possible, if a separate organisation could be justified by the Railway concerned, decided (October 1973) to bifurcate the project into two sections, viz., Madras—*Gudur (141 RKM/376 TKM) and Gudur—Vijayawada (293 RKM/ 749 TKM) to be executed by the Southern and South Central Railways respectively. The latter section, known as Vijayawada—Gudur Railway Electrification Project (VGRE), was completed in November 1980 as against the original target of March 1976.

II. Estimate

2. On bifurcation, the estimated cost of the project was split in proportion to the length to be electrified on each Railway,

*Electrification of Madras-Gudur section [(cost : Rs. 2089 lakhs (estimated)/Rs. 2298 lakhs (actual upto March 1981)] was completed in December 1980 as against the target of 1976 end, the delay being attributed by the Railway Administration mainly to inadequacy of funds and supply of critical materials.

the proportionate cost of VGRE project being worked out at Rs. 2228 lakhs. The South Central Railway Administration had assessed (July 1973) that the bifurcation would have the effect of increasing the cost by Rs. 51 lakhs (actual increase being higher because of subsequent dearness allowance etc. increases) on account of additional staff etc., besides delay in completion of the project.

3. The estimate of the VGRE was later revised in February 1975 and April 1976 to Rs. 4519 and Rs. 3819 lakhs respectively. The increase (Rs. 2291 lakhs) in the revised estimate of February 1975 (Rs. 4519 lakhs) over the proportionate abstract estimate cost (Rs. 2228 lakhs) was mainly on account of (i) escalation in costs (Rs. 1679 lakhs), (ii) increase in scope of work (Rs. 318 lakhs), (iii) extension of the period of work from 48 to 84 months (Rs. 276 lakhs) and (iv) other increases (Rs. 18 lakhs).

4. Consequent on instructions (November 1975—March 1976) of the Ministry of Railways (Railway Board) to effect economies, the Administration indicated reduction of Rs. 700 lakhs in the overall outlay (from Rs. 4519 lakhs to Rs. 3819 lakhs), the important areas of reduction being mainly materials like copper and steel, plant and machinery and overhead equipment (Rs. 298 lakhs), civil engineering works (Rs. 60 lakhs), signalling and telecommunication works (Rs. 103 lakhs) and incidental charges etc. (Rs. 130 lakhs). The reduction (Rs. 700 lakhs) in the overall outlay made on economy consideration was, however, offset to the extent of Rs. 287.23 lakhs by various additional works including two items deleted earlier which had to be undertaken due to material modifications during execution of the project.

The latest estimate sanctioned (February 1978) by the Ministry of Railways (Railway Board) including the subsequent material modifications was for Rs. 4010.23 lakhs against which the actual expenditure upto September 1981 amounted to about Rs. 4199 lakhs.

III. Planning and execution

5. The following points of interest were noticed in the matter of planning and execution of the project :

(a) Though foot by foot survey had been conducted in 1967 at a cost of Rs. 6.37 lakhs for the project between Madras and Vijayawada, due to the delay of 5 years in sanctioning (September 1972) the project, a re-survey for updating the data had to be done between 1973 and 1976. The cost of the re-survey has not been separately booked.

(b) Span length of *72 metres per mast of the overhead transmission lines was provided initially, it being considered adequate to withstand wind pressure of 100 kg per sq metre, but was reduced (December 1972) to 63 metres, on the suggestion of the Research, Designs and Standards Organisation (RDSO), for catering to higher wind pressure (150 kg per sq metre) and high speed operation. This reduction in the span length resulted in increasing the number of masts from 9,833 to 11,788 and the overall project cost by Rs. 164 lakhs (approximately).

(c) To support the local power supply which was considered exceedingly unreliable, 35 standby diesel generating sets (cost Rs. 7.73 lakhs) were purchased for the colour light signalling. These generators were to be released when the catenaries were energised.

The section was energised by November 1980 but the generators have still (January 1982)

*The Efficency Bureau of the Ministry of Railways (Railway Board) opined (April 1976) that the spacing of masts at 72 metres initially provided in the estimate was adequate for high speed operations upto 160 kmph and that there was no substantial justification for providing for higher wind pressure. As by this time the foundati n work had been completed for span lengths of 63 metres, no change was possible.

been retained in service, the financial implication of which is yet to be assessed.

With a view to ensuring "no break supply" of power during the interval between the failure of local power and supply by generators, 33 invertors with ancillary items (cost : Rs. 11.04 lakhs) were installed by January 1979 at various stations. However, owing to poor performance of these invertors it was decided (February 1979) to withdraw them from service and not to provide them at other stations. Such equipment had not been provided in any other railway electrification project.

(d) The project estimate envisaged provision of an electric locoshed with two entries for movement of engines. After earthwork for facilitating free movement of engines from and into the locoshed through the second entry was completed (1973), the second entry was given up as a measure of economy, rendering 15920 cum of earthwork and pitching (cost : Rs. 0.93 lakh) unnecessary. While the Administration expects (August 1981) to utilise the earthwork on Vijayawada—Balharshah and Gudur—Renigunta—Tirupati Railway electrification projects now under execution, utility of the earthwork already eight years old would appear doubtful.

(e) The estimate provided for six electric sub-stations with spacing ranging from 43 to 69 kilometres (kms). The Ministry of Railways (Railway Board) had desired (November 1976) the Administration to adopt the spacing of sub-stations at 90 to 100 kms, as recommended by the Efficiency Bureau, on par with the electrification projects abroad where the traffic density was intense and the load per train was more than 4500 tonnes, to effect economy of about Rs. 10,000—Rs. 11,000 per RKM. On the Administration contending that the location of the

substations was based on the proximity of the feeders of the Andhra Pradesh State Electricity Board (APSEB) and the heavy load of energy required for running of loaded trains with 4500 tonnes, the Ministry of Railways (Railway Board) pointed out (November 1977) that the first factor should not be a criterion for the location of substations, that there was no indication when trains with 4500 tonnes of load would be introduced on the section, that substations on the Eastern Railway had been provided at distances ranging from 76 to 92 kms. and that no problems had occurred on that Railway even though the traffic there was the heaviest. However, in view of the advanced stage of the work permitting no change of substation site at that stage, the Ministry of Railways (Railway Board) advised the Administration to pend energisation of two substations (at Padugapadu and Krishna Canal) till there was sufficient increase in traffic density to justify the load requirements. Even though the Administration agreed (March 1978) to do so, the substations were actually energised (Padugapadu in December 1980 and Bapatla in May 1980) even before the traffic density had increased. The more economic spacing of the substations would have meant a saving of about Rs. 32.34 lakhs computed at Rs. 11,000 per RKM for 294 RKMs. For operating and maintaining the two prematurely energised substations the recurring expenditure would be Rs. 3.39 lakhs per annum.

IV. Delay in completion

6. The project originally scheduled for completion by March 1976 was actually opened in December 1980, the delay of over four years being attributed mainly to—

(i) bifurcation of the project into two portions to be executed by two agencies;

(ii) non-availability of requisite funds in time to keep up the tempo of work;

(iii) delays of three to five years in procurement of critical materials (such as solid core insulators, regulating equipments, lightning arresters and transformers), delayed deliveries and delays in approval of prototypes by RDSO; and

(iv) diversion of certain critical materials, when the project was nearing completion (1979), to other on-going electrification projects on consideration of their relative priorities, under instructions of the Ministry of Railways (Railway Board).

7. Consequent on the delay in completion of the project as also change in its scope, the return of 12.6 per cent, envisaged (April 1976) on the investment of Rs. 3819 lakhs, would need reassessment taking into account—

(i) increase (Rs. 380 lakhs) in the cost of the project,

(ii) APSEB's present tariff rate of 40 paise as against 9 paise per unit reckoned in the estimate, which would escalate the energy bill from the assumed level of Rs. 184.26 lakhs during the period 1978-79 to 1982-83 to Rs. 460 lakhs per year, and

(iii) non-realisation of the anticipated traffic of 11,143.21 million GTKM, the actual traffic during 1978-79 and 1979-80 being only 9621.70 and 8034.06 respectively.

8. The Administration stated (August 1981) that as per the study conducted (1980) by the Railway Board the break-even level of traffic would be 21.8 million GTKM per RKM per annum and the return on investment well above the break-even

level of 10 per cent. Based on the actual traffic on the electrified section during December 1980 to October 1981, however, the average GTKM/RKM per annum would work out to 20.79 millions as against 38 millions GTKM/RKM per annum corresponding to the anticipated traffic projected in the estimate. The return on investment was not verifiable in the absence of the final figure of actual expenditure on the project.

V. Supply and erection of overhead equipment and connected works

9. The work relating to supply and erection of overhead equipments (estimated to cost Rs. 500 lakhs) was divided into two groups—Group 38, covering 154 RKM between Gudur and Ongole and Group 39, covering 138.5 RKM between Ongole and Vijayawada. Against tender enquiry (March 1973), the lowest offer received (4th July 1973) from a firm 'CG' for both the groups was passed over (8th July 1973) by the Tender Committee as it was not accompanied by earnest money deposit, and also suffered from certain technical deficiencies, though the firm had indicated that bank guarantee for earnest money could not be got cleared due to half yearly closing of the banks on 30th June 1973. The work was awarded to the next lowest tenderers, viz., 'CE' for Group 38 and 'SA' for Group 39, whose offers, also however, were not free from technical deficiencies, the cost differential over the lowest offer being Rs. 92 lakhs.

10. The following other points were noticed :

(i) While the Administration maintained a Design organisation consisting of three Gazetted officers and 56 other staff, the design work forming part of the contracts for both the groups, was entrusted (1974) to contractors at varying rates of Rs. 3850 and Rs. 3172 per TKM. The payment was to be made in 10 instalments, the first instalment soon after issue of the letter of acceptance, the subsequent 8 instalments every two months thereafter and

the final instalment on completion of the work based on final acceptance of designs and drawings. While 90 per cent of the amount due on this account (Rs. 22.14 lakhs) was paid by July 1975 to both the contractors, the physical progress of the design work done by 'CE' and 'SA' was only 2.15 per cent and 1.37 per cent respectively. The amounts paid were thus far in advance without reference to the physical progress of the work, and constituted an unintended benefit to the contractors. There was also delay of 10 to 13 months in completing the design work by 'CE'.

The Administration stated (August 1981) that execution of the work had been delayed on account of non-availability of adequate funds and, some of the yards being still under re-modelling, the completion of design and drawings as per the tender offer was not insisted upon.

(ii) Instalment payments for local administration charges as provided in the agreement with 'CE' were also made without linking therewith the physical progress of the work. While the actual payments to the firm during April 1974—June 1976 amounted to Rs. 53.10 lakhs, i.e. 90 per cent of the total (Rs. 59 lakhs) due under the contract, the physical progress of the work was only about 30 per cent. The Administration stated (August 1981) that as the establishment charges were in the nature of a fixed charge, not related to the quantum of work executed in field, these were not linked with the progress of work.

(iii) The contract with 'SA' provided for a lumpsum advance (interest free) of Rs. 30 lakhs, the first instalment of Rs. 15 lakhs being payable within fifteen days from the date of signing the agreement

and the balance six months later. The advance was recoverable progressively from on-account bills but no time limit for completing the recovery was prescribed. The recovery of the advance paid in March and October 1974 was actually spread over a period of six years till March 1980, resulting in unintended financial accommodation to the contractor.

(iv) As per the agreement, a lumpsum amount of Rs. 10,000 was payable to 'SA' for each case of theft or attempted theft at the site of work, subject to a maximum of Rs. 3.20 lakhs. For 23 cases of thefts/attempted thefts upto January 1981, the contractor was paid Rs. 1.80 lakhs without reference to the extent of damage/loss and compensation therefor received, if any, from the insurance companies. The Administration stated (January 1982) that the contract had stipulated such payments irrespective of the contractors' claim under the insurance policy and the extent of loss.

(v) The agreements stipulated completion of the work by the contractors within 30 months from the date of issue of the letter of acceptance and payment of compensation to them for extensions in completion period beyond 36 months for delays attributable to the Administration. The compensation payable to 'CE' was to be at rates to be settled mutually subject to a ceiling of 7½ per cent over and above the rates for the unfinished work. In the case of 'SA', there was no such ceiling on the rates to be mutually settled. However, on the contract being extended beyond 36 months, 'CE' was paid compensation on the same basis as applicable to 'SA' on grounds of equity, resulting in an additional payment of Rs. 11.38 lakhs.

VI. Fabrication of steel structures

11. For fabrication and galvanisation of steel structures, the offers received against tender enquiry (June 1973) were valid upto 27th November 1973, which was got extended to end of March 1974. On the Administration asking (February 1974) for further extension upto May 1974, the lowest tenderer 'P' extended the validity of its offer unconditionally, while the second lowest tenderer 'T' (a Government Undertaking) introduced a price variation clause for increase in the price of furnace oil. The lowest offer was, however, rejected by the Administration on grounds of lack of experience of the firm to undertake work of such magnitude and the next higher offer was accepted on 30th May 1974. The delay of about a year in finalisation of tenders, leading to the price variation clause, involved an extra expenditure of Rs. 1.05 lakhs. The Administration attributed (August 1981) the delay in finalisation of the tenders to availability of restricted funds requiring rephasing of the activities.

VII. Payment of penalty to APSEB

12. (a) For traction purposes, the Administration has been drawing high tension power from the APSEB at six points, against agreements entered into between December 1979 and January 1981, for demands ranging between 3500 KVA and 6000 KVA on the electrified track between Vijayawada—Gudur. The maximum demand recorded at four points during April 1980 to March 1981, however, exceeded the contracted demand due to it not having been assessed correctly, necessitating payment of Rs. 3.83 lakhs as penalty to the APSEB. The Administration got the maximum demand revised to higher levels subsequently on different dates between April 1980 and April 1981.

(b) The power factor of the Railway's installations at three sub-stations having ranged between 0.76 and 0.84 as against 0.85 stipulated in APSEB's tariff, the Administration had to pay further penalty amounting to Rs. 1.69 lakhs between September 1980 and March 1981.

The Administration stated (August 1981) that agreements with the APSEB had to be entered into before the electric supply could materialise and the sudden change over from steam/diesel traction to electric traction for both goods and passenger/express services resulted in the difference between the assessed and the actual demands. As the section was saturated and most of the trains were diesel-hauled, the requirements of electricity could have been coordinated and assessed more realistically with reference to the available data regarding the number of trains, load to be hauled, etc.

13. *Summing up*

(a) Foot by foot survey (cost : Rs. 6.37 lakhs) for electrification between Madras and Vijayawada had been conducted in 1967 but the project was sanctioned only in September 1972, involving delay of 5 years necessitating a re-survey (cost not booked separately) between 1973 and 1976 for updating the data.

(b) After the work had been taken up (October 1972) by South Central Railway, bifurcation (October 1973) of the Project by the Ministry of Railways (Railway Board) into two sections for execution by separate organisations on South Central and Southern Railways, resulted in increased staff cost (estimated at Rs. 51 lakhs in 1973).

(c) The VGRE project originally scheduled for completion by March 1976 was completed in November 1980, the delay of more than four years being attributed to bifurcation of the project, paucity of funds, delayed procurement of materials and their diversion to other Railways etc.

(d) There was lack of proper planning and execution of the project involving closer spacing of overhead transmission masts and electrical sub-stations thereby increasing the project cost by Rs. 168 lakhs and Rs. 32.24 lakhs respectively, provision of

invertors (cost: Rs. 11.04 lakhs) which were ultimately decided to be discontinued due to their poor performance and abandanment of the second entry for a locoshed (cost: Rs. 0.93 lakh).

(e) Premature energisation of sub-stations, involving avoidable operating and maintenance cost (Rs. 3.19 lakhs per annum).

(f) Award and performance of contract suffered from various defects/deficiencies e.g. rejection of lowest tender for not being accompanied by earnest money and delay in finalisation of tender involving extra cost of Rs. 92 lakhs and 1.05 lakhs respectively, design work (cost: Rs. 26 lakhs) entrusted to contractors while a design organisation existed on the project, extra contractual payment of compensation (Rs. 11.38 lakhs), etc.

(g) The cost of the project (as booked upto September 1981) exceeded the estimated (revised) cost : (Rs. 3819 lakhs) by Rs. 380 lakhs (on Southern Railway portion also, the cost—Rs. 2298 lakhs upto March 1981—had exceeded the revised estimated cost by Rs. 209 lakhs). The cost increase coupled with increase in APSEB's tariff rate and non-materialisation of the anticipated traffic was likely to vitiate the expected return on investment on the project.

(h) Incorrect assessment of the demand for power supply and non maintenance of the power factor at the required level led to payment of penalty (Rs. 3.83 lakhs and Rs. 1.69 lakhs respectively) to APSEB.

22. **Western Railway—Award of handling contracts to the same firm on a single tender basis.**

Handling contracts at important transhipment points are generally awarded for a period of 3 years after inviting open

tenders. In June 1975, the Railway Board, with a view to improving the performance of handling contracts at transhipment points and preventing frequent termination thereof due to increase in costs etc., directed that the handling agreements should provide, inter alia, a variation clause for variation of rates, based on the movement of the consumer price index of a nearby city.

On the Western Railway at Sabarmati (a major transhipment point near Ahmedabad), the Railway Administration decided (January 1978) that for the contract period March 1978 to March 1981, fresh tenders need not be called as such action might lead to increase in rates and bring in new contractors not having sufficient capability and that the existing handling contract with firm 'A' which had been handling the work efficiently from March 1975 to February 1978 be extended, by holding negotiations, for another term upto March 1981.

Accordingly, the existing contract with firm 'A' at 121 per cent over the schedule of rates was extended after negotiations for a period of 3 years from March 1978 to March 1981 with no increase in rates but with a variation clause for adjustment of rates with reference to consumer price index keeping in view the Railway Board's instructions of June 1975, as against the firm 'A's offer for fixed contract with a 10 per cent increase in existing rates.

In September 1980, firm 'A' raised a demand for increase in rates on the ground that there was constant rise in prices and in the expenditure on recruitment of labour and its maintenance. However, from 1978-79, the transhipment traffic at Sabarmati declined from a monthly average of 14,080 wagons in 1978-79 to 12,637 in 1979-80 (and further to 9,217 in 1980-81) owing to gradual conversion of the adjacent MG section Viramgam-Hapa into BG and closure of the nearby transhipment point at Viramgam, handled by another contractor just 65 km away, in

June 1980. While these developments were likely to contribute to easier availability of competent contractors in the area during 1980-81, the desirability of inviting fresh tenders to test the market on the expiry of the contract period, due in March 1981, was not considered. Instead, negotiations were held (October 1980) with firm 'A', which demanded a rate of 390 per cent above the schedule of rates as against the then (October 1980) existing contract rate of 175.5 per cent above the schedule of rates. The increase (78 per cent) in rates was agreed to by the Railway Administration alongwith the variation clause for further adjustment of price with reference to the consumer price index and the handling contract was renewed for a period of 3 years from January 1981 with the approval of the Ministry of Railways (Railway Board) in December 1980.

The following point needs consideration in this case :

The Railway, on its own, had introduced a price variation clause in the handling contract at Sabarmati linking the rate to the movement in the consumer price index. Yet, and without testing the market despite likely favourable conditions due to decline in the transhipment traffic at Sabarmati and closure of nearby transhipment point at Viramgam (65 km away), the Administration accepted, for the subsequent 3 years, a basic rate which was 78 per cent above the then existing rate (arrived at after taking into account the consumer price index in October 1980), together with a further price variation clause.

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

During the year 1980-81, Rs. 142.79 lakhs were recovered or noted for recovery at the instance of Audit. As a result of further review made by the Railways of these and similar cases

Rs. 3.97 lakhs more were noted for recovery. The cases included herein do not include cases commented upon specifically in the current year's Audit Report.

NEW DELHI
1982
Dated the 22nd March 1982
1903
1 Chaitra 1904

(A. R. SHIRALI)
Deputy Comptroller and Auditor General of India &
Additional Deputy Comptroller and Auditor General of India (Railways)

Countersigned

NEW DELHI
1982
Dated the 22nd March 1982
1903
1 Chaitra 1904

(GIAN PRAKASH)
Comptroller and Auditor General of India.

ANNEXURE I

[*cf. Para* 1.9 (iv)]

Some specific cases of non observance of the prescribed procedures for passenger reservation noticed by Audit in a test check are detailed below :

Central Railway

(a) At Bombay VT station, the reservations of seats/berths originally made for certain parties were transferred (April/May 1981) in favour of other parties who had not even been waitlisted, on the authority of CRI/ACO.

(b) A proper record of the messages received from outstations seeking reservations in the trains originating from Bombay VT station had not been maintained (April 1981 to June 1981) at the station.

(c) A return journey quota of 10 berths has been allocated for passengers travelling to Howrah in train No. 59Dn Gitanjali Express starting from Bombay VT. On a number of occasions (March/June 1981), though reply messages from Howrah regarding reservation against the return journey quota had not been received, the reservations had not been given to wait listed passengers; instead the berths were left vacant in reservation charts to be allotted by the conductors to passengers, whether waitlisted or not, waiting on platform or travelling in the train.

Northeast Frontier Railway

(a) No quota in first class at Silchar has been provided in 4Dn (Assam Mail) and 158Dn (Tinsukia Mail) trains even

though there was a long waiting list of 1st class passengers for travelling by these trains, viz. 50 and 40 respectively in March 1981.

(b) At Aizol agency, the quota allotted in train No. 12Dn (Barakvalley) was utilised only to the extent of 25—39 per cent in 1st class (March/June 1981); similarly the quota of 9 berths in II class three tier in train No. 202Dn(biweekly express) was utilised to the extent of 32 to 55 per cent only during the same period ; the quota set aside in AC two tier in train No. 158Dn Tinsukia Mail was utilised to the extent of 20-22 per cent only (January and April 1981).

Southern Railway

(a) The outstation quotas for train No. 131Up Mangalore-Nizamuddin Jayanti Janata Express were not being utilised fully (March 1981 to June 1981) vide details below :

Mangalore Station

A quota of 12 seats allotted for Jhansi was utilised fully on two days in March, four days in April, five days in May and fourteen days in June 1981 and on the remaining days, it was only partially utilised.

Quota of 2 berths allotted to Defence was not utilised by Defence personnel during March 1981 to June 1981.

Cochin Harbour Terminus

A quota of 3 berths for Vijayawada was fully utilised only on 5, 10, 12 and 19 days in March, April, May and June 1981; on the remaining days the quota was only partially utilised.

Ernakulam Jn. and Alwaye station

Quotas of 32 and 6 berths from Ernakulam and Alwaye stations for Renigunta station were not fully utilised on any occasion during March to June 1981.

Palghat Jn.

The quotas of 11 and 7 berths for Nagpur and Vijayawada were utilised fully for a maximum of 19 and 21 days only in any month during March to June 1981.

(b) In April and May 1981, 29 special trains were run between Madras Central/Egmore and Trivandrum (11 trains), Bombay (6 trains), Bangalore City (6 trains), Mangalore (1 train) and Tirunelveli (5 trains). Nine of these 29 trains were run with less than 50 per cent occupancy. In one special train from Mangalore, occupancy was only 10 per cent in first class and 14 per cent in second clas. Such trains also generally ran to irregular timings (upto 9 hours 50 minutes for New Delhi-Madras special trains reaching Madras on 19 June 1981).

(c) The prescribed procedure in regard to attachment of extra coaches was not followed at the three major reservation centres, viz. Madras Central, Madras Egmore and Bangalore City. In the months of December 1980, January 1981, May 1981 and June 1981 (middle of June 1981) the number of passengers in the waiting list justified the attachment of additional coaches but no additional coach was attached.

South Eastern Railway

(a) The outstation quotas of berths/seats in second class for 19Up/20Dn Konark Express during March to June 1981 were not fully utilised as mentioned below :

Cuttack

Quotas of 17, 66, 20 and 10 berths for Bombay VT, Secunderabad, Vijayawada and Rajahmundry respectively were utilised to the extent of 20 to 37 per cent only.

Bhubaneshwar

Quotas of 17, 102, 10 and 40 berths for Bombay VT, Secunderabad, Rajahmundry and Waltair respectively were utilised to the extent of 36.32 to 53.06 per cent only.

(b) Of the messages despatched by Esplanade Mansion reservation office, Calcutta to outstations for confirmation of return journey reservations during March 1981 to June 1981, replies/confirmations were received to the extent of 48 to 57 per cent only. Similarly, this reservation office had not sent replies to 73 to 77 per cent of the messages reecived from outstations for confirmation of reservation during the same period.

(c) 14 summer special trains were run during May 1978, these ran late ranging from 4 to 14-40 hours. 6 summer special trains were run during May and June 1979, these ran late ranging from 5 hours to 17 hours.

Western Railway

A quota of 2 berths in second class AC 2 tier, provided in 181Dn, Sarvodaya Express at Ujjain Station, was not being utilised fully as seen from test review of two months March and June 1981. Similar was the position of the utilisation of the quota of 4 berths provided in 182Up Sarvodaya Express at Mathura Jn.

ANNEXURE II

[*cf. Para* 1.4(ii)(c)]

Details of allotment and working of AC coaches on some of the Zonal Railways noticed by Audit.

Central Railway

A loss of Rs. 76.90 lakhs was sustained in 1978-79 in running of AC Coaches on five pairs of mail and express trains.

South Eastern Railway

Losses of Rs. 41 and 56 lakhs were worked out in the running of AC Coaches during 1978-79 and 1979-80 respectively; further, against the requirement of 20 AC coaches as assessed by the Railway Administration as on 1st November 1980, the actual stock was 25.

Western Railway

Against the requirement of 12 AC coaches for running the services, the actual holding was 29; of this, ten had been allotted from out of ICF built coaches after 1974.

ANNEXURE III

[*cf. Para* 1.6(*b*)]

Statement showing loss of Electrical and Mechanical fittings of coaches

	(Rupees in lakh)		
Railway	1978-79	1979-80	1980-8
Central	0.64	8.51	3.85
Eastern	11.38	17.62	29.98
Northern	37.34	48.90	51.20
Southern	7.65	6.25	6.08
South Central	27.40	23.71	46.05
South Eastern	14.44	13.08	86.51
Western	2.51	8.15	13.29
Total	101.36	126.22	236.96

ANNEXURE IV

[(cf Para 1.7 (viii)]

Statement showing holding and utilisation of Other Coaching Vehicles on Indian Railways

Year	Central	Eastern	Northern	Northeast Frontier	Southern	South Central	South Eastern	Western	All Railways*
1980-81 Holding (in units)	338	396	438	67	348	186	356	366	2496*
Vehicle Km per vehicle day	110	169	68	51	238	125	216	321	148
1974-75 Holding (in units)	357	301	420	52	269	158	385	392	2334
Vehicle Km per vehicle day	76	262	69	12	239	200	152	302	146

*Excludes the position of North Eastern Railway which held only one vehicle in 1980-81.

ANNEXURE V

[(*cf Para* 1.8(*i*)]

Name of the Railway	Date/month checked	Train No.	Class	No. of passengers wait-listed per day	No. of persons surrendering tickets per day
South Central	January 1981	54 Madras Express	1st	71	30
	January 1981	32 Bombay Express	1st	30	9
	January 1981	21 Dakshin Express	1st	49	23
Western	June 1981	181 Sarvodaya Express	IInd	283	112

ANNEXURE VI

(*cf Para* 1.9)

Details of number of tourist agencies, value of tickets/coupons sold by them and the amount of commission paid to them on Indian Railways

(In lakhs of rupees)

Sl. No.	Railway	No. of tourist agencies	Value of tickets/ coupons sold by them		Commission paid to them	
			1979-80	1980-81	1979-80	1980-81
1.	Central	14	60.01	77.20	1.71	2.27
2.	Eastern	5	6.75	7.38	0.25	0.28
3.	Northern	17	59.93	83.00	2.57	3.68
4.	Southern	9	54.28	73.84	2.32	3.07
5.	South Central	1	12.91	13.33	0.31	0.32
6.	South Eastern	5	8.95	9.57	0.29	0.31
7.	Western	13	153.64	172.45	7.47	8.00
	Total		356.47	436.77	14.92	17.93

ANNEXURE VIII(i)

[(cf Para 1.10 (i)]

Particulars of Mail/Express trains whose percentage of occupation is 100 per cent and above.

Section	Train No.	Station where census taken	Percentage of occupation				II ordinary	
			AC	1st	II AC	II	Reserved	Unreserved
Main line				Northern Railway—April 1980				
Ludhiana-Ambala Cantt.	172Dn	Ambala Cantt.	100	100	100	100		
Tundla Jn.—Kanpur	104Dn	Tundla Jn.	100	100	100	105		
Mughalsarai-Lucknow via Faizabad	135Up	Faizabad	..	115	..	198		
Allahabad-Rai Bareli	357Up	Partapgarh	..	100	..	158		
				Western Railway—October 1980				
Dahod-Ratlam	25Dn	Ratlam	100	100	100	127		
Ratlam-Dahod	26Up	Ratlam	100	100	100	111		
Surat-Vadodara	29Dn	Surat	..	100	..	103		
		Bharuch	..	..	..	103		
				Southern Railway—May 1980				
Madras Central-Mangalore	1Dn	Madras Central	..	68	..	100	100	131
Bangalore-Jollarpettai	313Dn	Jolarpettai	..	40	..	100	100	63
		Bangalore City	..	53	..	..	100	148
Tiruchirapalli-Erode	31Dn	Erode	..	66	..	..	100	140
		Karur	..	66	..	..	100	214
		Trichy	..	100	..	91	100	165

ANNEXURE VII(2)

(*cf. Para* 1.10(i)

Statement showing particulars of Mail/Express/Passenger trains whose percentage occupation is less than 100 per cent

Sl. No.	Section	Train No.	Station where census taken	Percentage occupation 1st	Second
1	2	3	4	5	6
NORTHERN RAILWAY MAY 81 CENSUS					
(a) Main line					
1.	Ludhiana-Amritsar	377Up	Ludhiana	34	20
			Jullundur	7	39
			Amritsar	4	18
2.	Kalka-Ambala	2UK	Kalka	—	26
			Ambala	—	—
(b) Branch line					
3.	Amritsar-Atari	5AA	Amritsar	—	21
			Atari	—	21
4.	Khemkaran-Amritsar	9AK	Khemkaran	—	6
			Tarantaran	—	13
			Amritsar	—	18
NORTHEAST FRONTIER RAILWAY MAY 81—CENSUS					
(a) Main Line					
5.	New Bongaigaon-Malda Town	166Dn	New Bongaigaon	—	71.36
			New Cooch Behar	—	86.92
6.	New Jalpaiguri-New Bongaigaon	51Up	New Cooch Behar	6.67	59.79
			New Bongaigaon	33.33	65.42
(b) Branch line					
7.	Haldibari-New Jalpaiguri	96Dn	Haldibari	—	47
			Jalpaiguri	13.33	48.75
8.	Singhabad-Malda Town	73Up	Singhabad	—	9
			Bulbul Chandi	—	11
			Malda Court	—	3
			Old Malda	—	1
			Malda Town	—	1

1	2	3	4	5	6
	NORTH EASTERN RAILWAY MAY 1981—CENSUS				
	(a) Main Line				
9.	Samastipur-Muzaffarpur (BG)	92Dn	Muzaffarpur	—	73
		20Dn	Muzaffarpur	42	85
		513 Up	Samastipur	—	10
		514 Dn	Muzaffarpur	—	32
		153Dn	Muzaffarpur	—	57
	WESTERN RAILWAY OCTOBER 1980—CENSUS				
	(a) Main Line				
10.	Valsad-Bombay Central	26Up (Pashchim)	Valsad	56	42
		28Up	Bombay Central	23	34
		172Up	Bombay Central	42	23
11.	Surat-Vadodara	131Dn	Surat	33	96
			Vadodara	20	44
	(b) Branch Line				
12.	Bombay Central-Valsad	39Dn	Bombay Central	14	36
		41 Dn	Bombay Central	54	68
		45Dn	Bombay Central	8	36
13.	Surat-Vadodara	49Dn	Surat	87	—
			Bharuch	22	72
14.	Khargoda-Virmgam	72Up	Viramgam	20	60
			Khargoda	—	14

ANNEXURE VIII

(*cf Para* 2.III)

Details of BG and MG sections on Indian Railways where diesel rail cars were in operat on.

Railway	No. of cars (authorised stock whether in operation; if not, since when)	Section in which deployed	Length of section (Kms)	Remarks (Details whether alternative passenger service available either by rail or by bus)
1	2	3	4	5
BG				
Central	2 (Discontinued in 1974-75)	—	—	Not in use
Northern	11 (1977-78)	Jullundur City-Nawashahar Doaba	58	1. Alternative passenger service by rail as well as by State Road Transport Corporation available.
		Jullundur City-Lohian Khas	52	
		Jullundur City-Tandaurmar	42	
		Jullundur City-Amritsar	79	2. 11 cars were transferred to South Central Railway for use during 1978-79.
		Amritsar-Ludhiana	136	
		Ludhiana-Jullundur City	57	
South Central	27	Kakinada-Samalkot	16	1. Alternative passenger service by rail as well as by bus by State Road Transport Corporation available.
		Gudivada-Machilipatnam	36	
		Rajahmundry-Nidadavolu	22	

(1)	(2)	(3)	(4)	(5)
		Nidadavolu-Bhimavaram	47	2. Eleven rail cars were transferred from Northern Railway in 1978-79.
		Bhimanvaram-Narasapur	33	
		Vijayawada-Gudivada	43	8
		Ongole-Chirala	49	
		Tadepallegudem-Nidadavolu	20	
		Rajahmundry-Samalkot	50	
MG				
North Eastern	20	Kanpur Central-Brahmavart	27	Alternative passenger service by rail available in all sections except in small sub-section of 8.04 Kms. of Kanpur-Brahmavart. But bus service run by State Road Transport Corporation available in all cases.
		Kanpur Anwarganj-Lucknow	74	
		Sitapur-Paliakalan	137	
		Lucknow-Sitapur	89	
Southern	10	Mysore-Nanjangud	26	Alternative passenger service by rail as well as by bus run by State Road Transport Corporation available.
		Tiruchchirapalli-Manaparai	37	
*Western	17*	Sihor-Palitana	27	Alternative passenger service by rail as well as by bus available. Includes two inspection cars. *Including trailers Diesel Rail Car Service inoperative from September 1980.

ANNEXURE IX

(Ref : Para 4.7)

Year	Steam		Diesel		Electric	
	G.T.K.M. (P+G)	locomotive on line	G.T.K.M. (P+G)	locomotive on line	G.T.K.M. (P+G)	locomotive on line
1969-70	103.853	5927	101.11	675	57.377	513
1973-74	79.319	5275	121.92	1118	58.840	645
1976-77	72.290	5019	166.29	1370	93.494	796
1977-78	69.484	4888	179.46	1460	98.503	852
1978-79	57.087	4828	185.06	1575	92.561	899
1979-80	50.352	4697	196.90	1671	90.638	929
1980-81	43.372	4532	205.10	1798	92.492	988

GTKM : Gross tonne kilometre in billions

Locomotives : in numbers

P : Passenger

G : Goods

ANNEXURE X

(Ref. : Para 4.12)

B.G. Diesel Locomotives

Year	In train Engine	Detentions and idling in sheds	Shunting etc. services	Available for use	Not available for use	Engine Kilometre per day per loco motive in use	Engine Kilometre per day (Target) February 79
	(Figures in hours)						
(1)	(2)	(3)	(4)	(5)	(6)	(7a)	(7b)
Central Railway							
(Passenger)							
1976-77	13.81	4.53	0.66	19.00	5.00	978	
1977-78	13.46	5.30	0.43	19.19	4.81	1010	
1978-79	11.55	7.34	0.41	19.30	3.70	744	
1979-80	11.36	7.61	0.39	19.36	4.64	755	
1980-81	11.30	8.35	0.35	20.00	4.00	718	
(Goods)							
1976-77	12.06	4.59	1.44	18.09	5.91	430	
1977-78	12.28	4.71	1.07	18.06	5.94	416	
1978-79	12.42	4.41	1.02	17.85	6.15	352	
1979-80	12.88	4.18	1.08	18.14	5.86	345	430
1980-81	12.96	4.61	0.72	18.29	5.71	341	430
Southern Railway							
(Passenger)							
1976-77	13.99	5.37	0.20	19.56	4.44	781	
1977-78	13.73	5.31	0.26	19.30	4.70	817	
1978-79	13.14	5.47	0.24	18.85	5.15	771	
1979-80	13.27	5.27	0.22	18.76	5.24	769	
1980-81			(not available)				
(Goods)							
1976-77	12.57	5.61	1.0	19.58	4.42	344	
1977-78	12.64	5.55	1.16	19.35	4.65	321	
1978-79	11.57	6.18	1.11	18.86	5.14	293	
1979-80	11.54	6.24	0.97	18.75	5.25	286	373
1980-81			(not available)				373

Year	In train Engine	Detentions and idling in sheds	Shunting etc. services	Available for use	Not available for use	Engine Kilometre per day per locomotive in use	Engine Kilometre per day (Target February 1979)
	(Figures in hours)						
(1)	(2)	(3)	(4)	(5)	(6)	(7a)	(7b)
Eastern Railway							
(Passenger)							
	11.7	0.6	0.2	12.5	11.5	1105	
	12.3	0.7	0.2	13.2	10.8	1208	
	12.7	0.7	0.1	13.5	10.5	576	
	8.8	2.2	0.6	11.06	12.4	538	
	8.9	1.9	0.3	11.1	12.9	514	
(Goods)							
	12.7	0.9	1.4	15.0	9.0	524	
	11.6	0.7	0.8	13.1	10.9	525	
	12.1	0.8	0.8	13.7	10.3	327	
	12.9	0.7	0.8	14.4	9.6	352	320
	13.0	6.3	0.3	19.6	4.4	323	320
South Eastern Railway							
(Passenger)							
	12.2	7.4	0.4	20.0	4.0	596	
	13.5	6.2	0.5	20.2	3.8	685	
	12.3	6.5	0.2	19.0	5.0	653	
	11.9	7.0	0.2	19.1	4.9	652	
	13.9	4.4	0.4	18.7	3.5	651	
(Goods)							
	7.1	7.1	3.2	17.4	6.6	369	
	7.2	6.8	3.7	17.7	6.3	368	
	7.2	7.5	3.5	18.2	5.8	334	
	7.2	8.0	3.2	18.4	5.6	307	400
	7.0	7.7	3.9	18.6	5.5	283	400

Year	In train Engine	Dttdn-tions and idiling in sheds	Shunting etc, services	Available for use	Not available for use	Engine Kilometre per day per locomotive	Engine Kilometre per day (Target February 1979)
	(Figures in hours)						
(1)	(2)	(3)	(4)	(5)	(6)	(7a)	(7b)
Northern Railway							
(Passenger)							
	11.63	8.08	0.16	19.87	4.13	606	
	11.50	8.29	0.21	20.00	4.00	617	
	11.24	8.16	0.26	19.66	4.34	597	
	11.91	7.54	0.16	19.61	4.39	593	
	11.80	7.60	0.18	19.58	4.42	535	
(Goods)							
	12.29	6.22	1.01	19.52	4.48	348	
	13.23	5.59	0.89	19.71	4.29	336	
	12.30	6.20	1.07	19.57	4.43	329	
	11.56	6.97	0.75	19.28	4.72	316	450
	12.92	6.87	0.81	20.63	3.40	318	450
Western Railway							
(Passenger)							
	12.60	6.50	0.61	19.71	4.29	782	
	11.59	8.63	0.33	20.55	3.45	811	
	12.12	9.26	0.05	21.43	2.57	716	
	12.44	8.95	0.03	21.42	2.58	742	
	12.86	8.59	0.02	21.47	2.53	740	
(Goods)							
	12.87	5.05	0.90	18.82	5.18	441	
	13.14	4.65	0.72	18.51	5.49	329	
	13.04	4.94	0.65	18.63	5.37	306	
	12.90	4.70	1.04	18.64	5.36	311	400
	12.97	4.74	1.16	18.87	5.13	353	400

S/40 C & AG/81.—15.

ANNEXURE XI

(*Ref. : Para* 4.22(d)

Year	Number of locos homed	Shed ineffective percentage	Number of engine failures	kilometres per engine failures (lakhs)
(1)	(2)	(3)	(4)	(5)
Itarsi				
1976-77	118	26.7	100	0.61
1977-78	120	24.1	96	0.69
1978-79	120	26.4	109	0.73
1979-80	122	13.7	121	0.82
1980-81	120	13.3	93	0.93
Howrah and Burdwan				
1976-77	61	10.3	29	0.89
1977-78	64	10.2	21	1.18
1978-79	66	11.1	19	1.12
1979-80	67	10.5	21	1.11
1980-81	91	12.3	21	0.85
Bondamunda				
1976-77	63	13.4	48	1.08
1977-78	76	12.4	128	0.37
1978-79	87	13.0	105	0.47
1979-80	93	13.9	158	0.31
1980-81	100	14.6	219	0.21
Waltair				
1976-77	128	21.9	316	0.58
1977-78	137	22.6	600	0.25
1978-79	138	21.0	516	0.28
1979-80	132	16.7	500	0.28
1980-81	130	14.7	432	0.31
Ratlam				
1976-77	138	21.0	175	0.88
1977-78	137	20.5	160	0.98
1978-79	144	11.9	183	0.82
1979-80	149	12.8	155	1.02
1980-81	150	12.0	152	1.16

(1)	(2)	(3)	(4)	(5)
Mughalsarai				
1976-77	72	14.6	58	1.75
1977-78	72	13.0	66	1.36
1978-79	72	14.0	82	1.15
1979-80	72	16.9	120	0.85
1980-81	70	15.6	68	1.17
Tughlakabad				
1976-77	105	9.4	97	1.14
1977-78	110	11.5	114	1.26
1978-79	110	11.6	98	1.45
1979-80	110	10.8	110	1.33
1980-81	110	11.6	98	1.45
Erode				
1976-77	89	13.4	155	1.42
1977-78	98	13.5	95	1.93
1978-79	111	14.5	86	1.68
1979-80	118	14.7	109	1.44
1980-81	120	13.0	80	2.00

ANNEXURE XII

(*Ref* : *Para* 4.37)

(i) Railway lines in the coal and steel belts of Chandrapura Complex connect 4 major coal washeries and lie between the main electrified sections on the Eastern and the South Eastern Railways (electrified in II and III plan periods. Their electrification is expected to eliminate the existing constraints in the movement of wagons caused due to change of traction within short distances of the destination. Yet, electrification of these lines at a cost of Rs. 14.55 crores was taken up in 1980-81 only.

(ii) While the Bombay-Ahmedabad section was energised in stages from March 1973 to November 1975, the electrification of Ahmedabad-Sabarmati and Ahmedabad-Asarva sections, though originally included in the Virar-Sabarmati Electrification Project, was not carried out. Meanwhile, the point loads between Sabarmati and Bombay Vadodara side have to be detained in the busy Ahmedabad yard for change of power, thereby affecting the movement of traffic. On an average 3.5 trains per day in each direction (to and from Sabarmati) are so detained involving 2 hours 13 minutes per train as against 55 minutes prior to electrification. Similarly, block loads for Sabarmati from/to Ratlam side are worked with diesel power involving haulage of diesel trains on electrified sections.

(iii) On Bhusaval-Igatpuri and Bhusaval-Manmad sections which were energised by 31st March 1969, 1318 trains in 1979 and 784 in 1980 were run with diesel power.

(iv) The entire section between Madras and Vijayawada had been electrified by December 1980. According to the records

of the Administration, on an average 5.90 locomotives were available as spares. (The 'spares' are engines not actually worked during 24 hours on any one day from mid-night to mid-night) during the period January 1981. Nevertheless, a total of about 44,67,58 (in thousands) GTKMs were done with diesel traction during the same period (January 1981 to May 1981) due to shortage of crew. Diesel traction being costlier than electric traction, this involved extra expenditure of Rs. 11.5 lakhs on fuel costs.

ANNEXURE XIII

(*Refer para* 4.41)

(All Gauges)

Year	Quantity of coal million tonnes	Cost Rs. Crores	Traffic (GTKM million)
	Steam Traction		
1969-70	15.22	102.55	191834
1973-74	12.69	92.31	143836
1976-77	12.18	136.90	140907
1977-78	12.29	136.35	135914
1978-79	11.63	134.19	116442
1979-80	11.39	169.32	106156
1980-81	11.09	187.51	94806
	Diesel Traction		
Year	Qty. of HSD oil kilolitre	Cost Rs. Crores	Traffic GTKM million
1969-70	536301	45.12	127983
1973-74	681006	57.45	157826
1976-77	846654	106.40	213040
1977-78	945660	118.49	228536
1978-79	952621	120.46	235632
1979-80	980742	140.00	248932
1980-81	1093252	214.44	259697
	Electric Traction		
Year	Units KWH million	Cost Rs. crores	Traffic carried (GTKM million)
1969-70	1013.5	10.48	63020
1973-74	977.2	14.22	64621
1976-77	1447.0	33.09	102551
1977-78	1543.0	36.24	108429
1978-79	1513.0	41.32	102225
1979-80	1574.0	49.90	99985
1980 81	164 0.3	60.45	102003

ANNEXURE XIV

[*cf Para* 5.5(4)]

Showing total number of wagons received under senders weight invoices and number of wagons weighed as per weighment advices received in Traffic Accounts Office in 1980-81

S. No.	Name of the Railway	Total no. of wagons received under senders weight invoices	No. of wagons weighed as per advice received in Accounts Office	Percentage
1.	Central*	12567	2983	23.73
2.	Eastern	39216	2743	6.99
3.	Northern	93626	9462	10.1
4.	North Eastern	35140	5378	15.3
5.	Northeast Frontier	19598	930	4.7
6.	Southern	42168	802	1.9
7.	South Central	6393	—	—
8.	South Eastern	14946	2285	15.28
9.	Western	252083	8867	3.5

* Data relate to local traffic only.

MGIPRRND—S/40 C&AG/81—TSS—I, 15-3-82—2125