EIGHTY-NINTH REPORT

COMMITTEE ON PUBLIC UNDERTAKINGS (1983-84)

(SEVENTH LOK SABHA)

DURGAPUR STEEL PLANT

(MINISTRY OF STEEL & MINES, DEPARTMENT OF STEEL)

Presented to Lok Sabha on ..... 27 APR 1984

Laid in Rajya Sabha on ..... 27 APR 1984

LOK SABHA SECRETARIAT
NEW DELHI
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CORRIGENDA TO THE 89TH REPORT OF THE COMMITTEE ON PUBLIC UNDERTAKINGS
(SEVENTH LOK SABHA)

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STUDY GROUP I ON HMT LTD., REHABILITATION INDUSTRIES CORPORATION LTD. AND DURGAPUR STEEL PLANT

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INTRODUCTION

I, the Chairman, Committee on Public Undertakings having been authorised by the Committee to present the Report on their behalf, present this Eighty-Ninth Report on Durgapur Steel Plant of Steel Authority of India Ltd.

2. The Committee's examination of the working of the Company was mainly based on the Report of the Comptroller and Auditor General of India, 1981, Union Government (Commercial) Part X.

3. The Committee took evidence of the representatives of Steel Authority of India Ltd. on 18 and 19 July, 1983 and of Ministry of Steel and Mines (Department of Steel) on 16 and 17 September, 1983.

4. The Committee considered and adopted the Report at their sitting held on 5 April, 1984.

5. The Committee wish to express their thanks to the Ministry of Steel and Mines (Department of Steel) and Steel Authority of India Ltd. for placing before them the material and information they wanted in connection with examination of the Company. They also wish to thank in particular the representatives of the Department of Steel and the Company who gave evidence and placed their considered views before the Committee.

6. The Committee also place on record their appreciation of the assistance rendered by the Comptroller and Auditor General of India.

MADHUSUDAN VAIRALE,
Chairman,
Committee on Public Undertakings

NEW DELHI;
17 *April,* 1984
28 *Chaitra,* 1906 (*Saka*)

CHAPTER I

PRODUCTION PERFORMANCE

A. *General*

Durgapur Steel Plant with a capacity of 1 million tonnes steel ingots was taken up with British Technical assistance and the construction of one million tonne stage (0.814 million tonne saleable steel) was completed in May 1962, at a cost of Rs. 184.87 crores. The capacity was increased to 1.6 million tonnes of ingot steel (1.239 million tonnes saleable steel) by 1969-70 at an additional cost of Rs. 68.38 crores. Capital expenditure incurred on additions, modifications and replacements upto 31-3-1983 was Rs. 181.47 crores including an amount of Rs. 61.01 crores incurred on captive power plant and Rs. 12.51 crores on account of Bolani Ores. The total capital investment upto 31-3-1983 was thus Rs. 434.72 crores.

Overall Production Performance

1.2 A review of production performance of the Plant showed that the capacity utilisation of the plant in terms of steel ingots gradually went up from 40% in 1970-71 to 68% in 1976-77. The production of saleable steel also rose from 33% of the capacity in 1970-71 to 73% in 1976-77. The position, however, started deteriorating thereafter, as would be seen from the following table :

(in lakhs tonnes)

Year	Rated capacity	budgted production	Actual production	%age of production Actual to	
				Rated capacity	Budgeted production
1	2	3	4	5	6
1976-77					
Steel Ingots	16·00	11·00	10·91	68	99
Saleable Steel	12·39	8·25	9·01	73	109
1977-78					
Steel Ingots	16·00	12·50	10·92	68	87
Saleable Steel	12·39	10·23	8·65	70	85
1978-79					
Steel Ingots	16·00	12·50	9·46	59	76
Saleable Steel	12·39	10·18	7·78	63	76
1979-80					
Steel Ingots	16·00	12·50	8·82	55	70
Saleable Steel	12·39	10·00	6·05	49	60

1	2	3	4	5	6
1980-81					
Steel Ingots	16·00	10·70	7·41	46	69
Saleable Steel	12·39	8·55	5·98	48	70
1981-82					
Steel Ingots	16·00	10·00	9·30	58	93
Saleable Steel	12·39	7·80	7·82	63	100
1982-83					
Steel Ingots	16·00	12·00	9·52	60	79
Saleable Steel	12·39	9·65	8·12	65	84

1.3 The plant management have analysed the reasons for loss of contribution margin due to internal and external causes from the year 1973-74 to 1982-83 with reference to budgeted production, which were as follows :

(Quantity in lakh tonnes)

Year	Particulars	External Causes		Internal Causes		Total
		Shortages of power	Difficulty in movement of Raw Materials and shortages	Industrial disputes	Break down & shut-downs in excess of planned down-time & other causes	
1	2	3	4	5	6	7
1973-74	Pig Iron	—	0·07	0·39	0·43	0·89
	Steel	0·70	0·14	0·75	0·70	2·29
1974-75	Pig Iron	—	—	—	—	—
	Steel	0·54	0·69	0·11	1·09	2·43
1975-76	Pig Iron	—	—	—	—	—
	Steel	0·03	—	—	—	0·03
1976-77	Pig Iron	—	—	—	—	—
	Steel	—	—	—	—	—
1977-78	Pig Iron	—	—	—	1·08	1·08
	Steel	0·36	—	0·03	1·19	1·58
1978-79	Pig Iron	—	0·02	—	0·07	0·09
	Steel	0·27	0·41	0·29	1·27	2·24
1979-80	Pig Iron	—	—	—	—	—
	Steel	3·53	—	0·16	0·24	4·33
1980-81	Pig Iron	—	—	—	—	—
	Steel	2·50	—	0·05	0·06	2·61
1981-82	Pig Iron	—	—	—	—	—
	Steel	0·46	—	0·23	0·64	1·33
1982-83	Pig Iron	—	—	—	—	—
	Steel	0·55	—	0·18	1·05	1·78
Grand Total	Pig Iron					2·06
	Steel					18·62

1.4 The loss of contribution margin on the above production loss was stated to be Rs. 104.72 crores.

1.5 According to Audit, with a view to utilising the existing plant capacity to the maximum extent, provision of certain balancing facilities (34 items) involving an estimated outlay of Rs. 27.04 crores approximately was made, in the long-term corporate plan drawn up by the Company in November, 1982. It was anticipated that, consequent upon implementation of these facilities, plant would attain a production level of 14 lakh tonnes of steel ingots from 1975-76. It was confirmed (May 1977) by the Steel Authority of India Ltd. that balancing facilities had already been commissioned.

1.6 Nowithstanding the completion of balancing facilities, the Plant had so far attained the maximum production level of 10.92 lakh tonnes of steel ingots (1977-78). It may be relevant to mention that the Action Committee appointed by the Government to study the working of Public Sector Enterprises had in this connection observed in its draft report that, "Considering the situation that exists at Durgapur and the culture that has developed as a result of continued low production for years together in the past and also considering the fact that the plant is not in a good shape due to continued neglect in maintenance, Government may accept 1.4 M.T. of ingot steel per year as a practical capacity from this plant. It might be possible for the Plant to improve upon the derated capacity, when all the constraints were removed and plant maintenance and discipline were brought to normal."

1.7 In this connection, SAIL intimated Audit in October, 1981 as follows :—

> "Subsequent to the submission of draft report by the Action Committee, the Government of India under UK technical aid commissioned in November 1979 British Steel Corporation (Overseas Services) to study the condition of the Steel Plant and submit a report for modernisation of the Plant. According to the report submitted in November, 1980, the plant can achieve a maximum production of 1.15 million tonnes of steel ingots per annum, keeping in view the existing health of the equipment."

1.8 The Committee enquired from representatives of SAIL whether the suggestion of derating of capacity of the plant to 1.4 million tonnes per annum as suggested by the Action Committee was accepted by Government. The Managing Director, Durgapur Steel Plant stated in evidence :

> "The Action Committee's suggestions of taking the capacity as 1.4 MT is not, to my knowledge, accepted by the Government. We still say and all the calculations that have been produced here are also on the basis of 1.6 MT."

In the same context, the Chairman, SAIL added :—

> "...Though various expert committees have given various views—varying from 1.15 MT by British Steel Corporation and MECON while not giving figures have said that certain facilities should be increased to ensure 1.6 MT capacity, but as far as we

are concerned we have for many reasons maintained as far as our official reckoning is concerned that the capacity is 1.6 MT."

1.9 Asked whether there was an element of over-estimation in the figure of 1.6 MT, the Chairman, SAIL stated :—

"To be very frank we also feel that there is an element of over-estimation in mentioning 1.6 MT because there have been anomalies in the actual execution as compared to the original project report. But our difficulty has been that before a firm figure is arrived at, if we assume any lower figure than originally indicated, it has many implications. Therefore, we have not done that until on Government approved basis some sort of a revised capacity is indicated. That is the fact."

1.10 When the Committee desired to know as to whether any decision had been taken by the Ministry in regard to the capacity of the Plant so that its production performance could be judged on a realistic basis, the Secretary, Department of Steel in evidence stated :—

"...The ingot steel capacity given the current situation of raw materials will be 1.15 million tonnes provided there are no power constraints or labour problem, etc. ... A number of studies have been made. There is the task force which has been appointed to go into the question as to what will be the characteristics of raw-materials that will be available in future and on that basis what will be capacity looking ahead and what needs to be done to improve the operation of the plant."

1.11 The Committee enquired as to whether the Ministry have analysed the reasons for persistent low capacity utilisation in Durgapur Steel Plant and identified the main production constraints. In reply, Secretary, Department of Steel in evidence stated that both the Steel Authority of India Ltd. and the Department of Steel had analysed the constraints that had prevented the achievement of optimal capacity utilisation. The main factor in regard to hot metal had been the raw material characteristics and to a limited extent oven availability. Second factor had been the power supply. Other factors, which were to an extent separate one were industrial relations problems and also breakdown of equipments as also certain unforeseen natural calamities like floods.

Elaborating, the witness stated :

"In regard to raw material characteristics, there has been a deterioration far in excess of what anybody could possibly have anticipated. I will just mention two or three critical factors. First is the alumina silica ratio. The project basis was 1.8 whereas it has actually varied between 2.3 to 2.6. It is not merely the absolute deterioration in quality but also the fact that this varies from 2.3 to 2.6. The fact is that it varies and, therefore it is not consistent in character. Second thing is the iron content in iron ore. What is most important here is the actual variation—the daily variation.

The actual project basis was that daily variation in Fe content should not exceed 0.5 but the actual variation has been between 4.9% and 6.37%. Then there is the ash content in coke. 24.7 per cent ash was the parameter on which the project was based. In actual practice the ash content has been between 27.5 per cent and 28.9 per cent. What is equally important is the daily variation in the ash content. The project was based on a daily variation of not exceeding 1; but, in actual practice, the variation is 1.55 to 2.46".

1.12 As regards power, the witness added that their actual requirement of power from outside was 50 MVA. But in the last five years the restriction on the availability of power was as follows :

Year	*Availability*
1978-79	47%
1979-80	88%
1980-81	82%
1981-82	53%
1982-83	65%

Apart from the absolute curtailment of power supply, there had been interruptions and voltage fluctuations, which had affected the plant and machinery.

1.13 Besides the above two absolutely crucial factors, in regard to industrial relations, the number of man-days lost during the last five years were stated to be as follows :

Year	*Man-days lost*
1978-79	4,712
1979-80	33,211
1980-81	61,688
1981-82	44,982
1982-83	6,641

There had also been go slow and work to rule.

1.14 When the Committee wanted to know the specific reasons for capacity utilisation in 1980-81 being only 46% for ingot steel and 48% for saleable steel, the Managing Director, Durgapur Steel Plant in evidence stated that in 1980-81, they had taken a conscious decision to reduce the steel melting production due to accumulation of huge quantity of ingots which could not be processed on account of power shortage

1.15 Asked about the measures taken to remove the various constraints and their results, the witness stated :

"The various factors for the shortfall in the last five years are power restriction, coal quality and short-supply of coal, equipment breakdown, unsatisfactory condition of coke oven and sometimes

industrial relations problems. To overcome the first, action that has been taken is to instal 2 × 60 MW plants in the captive power plant. Secondly, to improve upon the conditions of the coke oven battery, besides the cold repair and hot repair, rebuilding of battery No. 2 has been completed and capital repair of battery No. 1 and capital repair of 3B has been taken in hand which would be completed before the end of this year. To overcome the problem of inadequate supply of coal, we are in constant touch with Coal India Ltd. and we have also introduced from last year infrastructural Coordination Meeting at the plant level also. To the meetings which are taken up at the corporate level with the Coordination Secretary, we invite the railway officials, Coal India officials and also DVC officials. There we discuss this problem. We discuss about the plan, what they have committed, what they should supply and the difficulties we have been facing. Sometimes we also take the officials to the plant. We discuss our problems We get sometimes stone along with coal which breaks down the equipment and affects the continuous production and, through these discussions, we are trying from our side, to solve this problem. However, the quantity and quality of coal is a problem. But we had increased our inter-action additionally and we are trying to solve it."

1.16 The Committee enquired about the reasons for failure to even achieve generally the budgeted production targets which were fixed every year taking into consideration all the constraints. The Chairman, SAIL stated that firstly, they were not evaluating the items like quality of ash in the Budget and also they were not assuming constraints of power or shortage of coal because they vary from year to year. Secondly when yearly plan were made assurances were given to them regarding power and coal supply therefore, they could not plan for the shortage.

1.17 In reply to an Unstarred Question No. 2918, in Lok Sabha on 10th August, 1983 the following figures were given in regard to capacity utilisation of various integrated Steel Plants during 1980-81, 1981-82 and 1982-83 :

Year / Plant	Percentage of Capacity Utilisation					
	1980-81		1981-82		1982-83	
	Ingot Steel	Saleable Steel	Ingot Steel	Saleable Steel	Ingot Steel	Saleable Steel
Bhilai . . .	81·6	92·5	85	93	85	94
Durgapur.	46·3	48·3	58	63	60	65
Rourkela.	64·7	80·4	67	89	64	81
Bokaro .	36·9	42·8	72	75	73	78
IISCO	60·9	65·4	60	61	62	63
SAIL	58·3	65·9	71	78	71	79
TISCO . . .	93·7	102·5	98	107	97	106

1.18 The Committee enquired whether the Ministry had analysed the production constraints peculiar to Durgapur Steel Plant resulting in poor production performance as compared to other steel plants. The Secretary, Department of Steel in evidence stated :

> "We have analysed the production constraints particularly we have analysed the Durgapur Steel Plant with other steel plants. If you take Bokaro, it has iron ore beneficiation blending and averaging of iron ore. Ash content in coking coal is much less in Bokaro. So is the Ash content in coking coal in Bhilai. In Bhilai, the position is that it has iron ore beneficiation, blending and averaging of all raw materials including coal. Power situation is better than in DVC-served steel plants. The Ash content in Bhilai is much lower than in Durgapur. Now, Rourkela has iron ore beneficiation also. In regard to coking coal, its ash content is also lower than in Durgapur. Detailed analysis of factors and constraints and the performance of the various units have also been compared and compared regularly."

1.19 Durgapur Steel Plant set up in 1962 with a capacity of 1 million tonnes of ingot steel was expanded to 1.6 million tonnes by 1969-70. The production of the plant was lagged far behind the rated capacity. The capacity utilisation in terms of steel ingots ranged from 40% to 68% during 1970-1983. The Plant has failed even to maintain the production level reached in 1976-77, the capacity utilisation during the last 3 years being only 46%, 58% and 60% as against 68% achieved in 1976-77.

1.20 The Committee have been informed by the Plant management that on account of raw materials and other constraints the effective capacity of the Plant was lower than 1.6 million tonnes. Assessments of capacity made by various experts ranged from 1-15 million tonnes to 1 4 million tonnes. However, neither the SAIL Corporate Office nor the Ministry have approved the derated capacity, as according to Chairman of SAIL, 'assuming any lower figure than originally indicated has many implications'. In the circumstances, the Committee would be justified in judging the performance of the Plant with reference to rated capacity of 1.6 million tonnes. They, however, desire that the task force which is examining this matter should fix the attainable capacity of the plant on a rational and scientific basis so that the performance of the Plant could be judged in a realistic manner.

1.21 The Committee find that the capacity utilisation has not only been much lower than the rated capacity but even as compared to the production targets which never exceeded 1.25 million tonnes and which are fixed every year taking into consideration the various constraints. The loss of production with reference to Budget targets aggregated to 18.62 lakh tonnes of saleable steel and 2.06 lakh tonnes of pig iron during 1973-83. There was a colossal loss of contribution margin of Rs. 104.72 crores on this loss of production. But for this, the overall losses of the plant (Rs. 144.69 crores) would have been less to this extent during this period. The position becomes all the more serious when it is considered that capacity utilisation of Durgapur Steel Plant has been the lowest as compared to other steel plants of SAIL. For instance, in 1982-83 as against the overall capacity utilisation of 71% for ingot steel and 79% for saleable steel for all the plants of SAIL, the capacity utilisation for Durgapur Steel Plant was only 60% and 65% respectively. It was worse as compared to TISCO which attained 97% capacity utilisation for ingot steel and 106%

for saleable steel. Although external causes like shortage of power and difficulties in movement of raw materials and their shortage, etc. have effected production, major share of loss of production has generally been on account of internal causes like industrial disputes, break-downs and shut-downs in excess of planned down-time, failure to provide blending and beneficiation facilities for raw materials etc. The Action Committee appointed by the Government in 1973 had also pointed out that neglecting of maintenance, lack of discipline and proper work culture had affected the production performance of the plant. The Committee cannot but take a serious view of the poor production performance of the plant on account of factors which were mainly if not wholly within the control of management. Apparently, there has been failure to take timely remedial measures to improve the production performance. The Committee urge the need for concerted efforts both by the Ministry and the management to ensure optimal capacity utilisation of the Plant.

Unit-wise Production Performance

B. *Coke Oven Batteries*

1.22 There are 4 Coke Oven batteries having 78 ovens each. While 3 were commissioned by May 1962 under one million tonne stage, the fourth was added under 1.6 million tonnes expansion stage and commissioned in July/August 1967. Half coke oven battery was further installed in July 1977 under balancing facilities as standby during rebuilding of ovens. The cost incurred on these batteries came to Rs. 18 crores (upto 30th April, 1978).

1.23 As against the expected availability of 292 ovens per day, the number of oven actually in operation during 1970—83 were much less ranging between 173 and 228. The average coking time of ovens was also much higher than the designed 19 hours 30 minutes and went upto 28 hours 10 minutes.

1.24 As against the rated capacity of 17.40 lakh tonnes of coke, the budgeted and actual production during 1970-71 to 1982-83 was much lower, ranging from 10.21 lakh tonnes to 13.91 lakh tonnes.

1.25 A productivity and efficiency analysis of these batteries indicated that the production of coke was less than the rated capacity and budgeted production (except in 1976-77 for budgeted production) due to :

(i) Low availability of ovens caused by delay in re-building of half battery of Battery No. 1, Battery No. 2 and capital repair of Battery No. 3 and longer coking time.

(ii) Lower pushing rate caused by adverse industrial relation, deterioration in condition of batteries (1970-71 to 1977-78) and non-availability of coal in required quantity (1970-71 to 1979-80) and critical stock position (only in 1978-79 and 1979-80).

1.26 As a result of above, there was a net production loss of 54.68 lakh tonnes of coke during 1970-71 to 1982-83 after taking into account the impact of favourable charge and yield variance.

1.27 The Committee enquired about the reasons for deterioration in the condition of coke oven batteries. They were informed in evidence that the normal life of coke oven batteries was about 15 to 20 years but the plant could not get the full life of the battery because the battery had faced thermal shocks in late sixties due to industrial relation problem which deteriorated the condition of the ovens. Inadequate coal supply during the period 1979-80 has also caused irregularly in pushing schedule thereby affecting the health condition of the oven further. Therefore, the batteries had to be brought down earlier for rebuilding. Battery No. 1 was taken down for rebuilding in 1968 after 9 years. Other batteries were kept running by continuous nursing and repairs. The Batteries were being brought down for rebuilding in a phased manner. Battery No. 2 was brought down for rebuilding after a period of 16 years.

1.28 The Committee enquired about the time taken for rebuilding the battery No. 1. The Managing Director, DSP stated in evidence that it took a very long time of about 6 years. Normally it should take about 3 years only.

1.29 When asked as to how would DSP justify taking a period of six years in rebuilding and commissioning of battery No. 1, the DSP in a note furnished after evidence stated that Battery No. 1 was brought down for rebuilding in November, 1968. Section IB of the Battery was rebuilt and commisisoned in February 74 against the scheduled date of December 70. Section IA was commissioned in December 1974 against the schedule of February 1971. The delays in completing the rebuilding works of this Battery was attributed to the following factors :

(i) Non-availability of indigenous refractories.

(ii) Failure on the part of suppliers of castings.

(iii) Delay in procurement of Silica bricks replacement.

(iv) Delay in procurement of structural sections.

(v) Receipt of certain defective materials requiring modifications before erection.

(vi) Labour problem with the contractors.

1.30 Asked about the action taken against the parties for their failure to stick to the schedules, it was stated that as per the general conditions of the contract 1% of Liquidated Damages was leviable per month without any ceiling for the delay. The total penalty imposed against the contract for rebuilding for Battery No. I was Rs. 99,154.60.

1.31 To another query as to what was the time taken in rebuilding of other batteries and what were the reasons for delay in completing the work, the Durgapur Steel Plant in a note stated that Battery No. II was brought down for rebuilding in February 1977. Section IIA of this Battery was commissioned in July 1982 against the schedule of September 1979 and Section IIB was commissioned in September 1982 against the schedule of November, 1979.

1.32 The delays in completing the rebuilding of this Battery were attributed to the following reasons :

(i) Non-availability of castings and structurals in time.

(ii) Labour problem with the contractors engaged in erection work.

(iii) Delay in Civil Engg. work due to site condition.

(iv) Higher time taken for dismantling.

(v) Delay on the part of MECON in submitting technical specification in quite a large number of cases in time and also change in specification by MECON in some cases after placement of order.

1.33 For failure on the part of the parties to adhere to time schedule as per contract liquidated damages as per provision of contract were imposed on the parties and a sum of Rs. 20.17 lakhs approximately (Rs. 2.96 lakhs from public sector undertaking) was recovered from them.

1.34 As per Audit Report, the other important aspects of the operation of batteries were :—

—While yield of blast furnace grade coke during these years was more than the Project norm (63.9 per cent of coal charge), it was below the norm (71 per cent of coal charge) fixed by the Norms Committee in 1968.

—Yield of coke oven gas per tonne of coal charged was less than the Project norm as well as the norm fixed by the Norms Committee.

—The coal blend did not conform to the ratio prescribed by the various committees. Besides, average ash content of coal charged was higher than the project norm. This resulted in ash content in the blast furnace coke being higher than the Project norm. This had also a detrimental effect on the operation of Coke Ovens, Blast Furnaces and Rolling Mill.

1.35 While detailing upon the deterioration in raw material characteristics, the Department of Steel in a note gave the following information regarding the quality of coal envisaged in the DPR and quality actually being achieved at present :—

	As per 1·6 MT DPR	Actual average		Remarks
		1982-83	April-September 1983	
(i) Ash in feed coal to Durgapur Steel Plant washery(%) .	22·77*	26·47	27·31	*As per 1 MT DPR
(ii) Ash in clean coal for Durgapur Steel Plant Washery (%)	16·17	20·52	20·85	
(iii) Ash in Blend coal(%) .	16·5	21·78	22·43	
(iv) Volatile Matter in Charge Coal (%)	26·5	21·92	21·98	

1.36 The actual supply of washery feed coal has been from X seam and below with difficult characteristics against supply from XI seam and above envisaged in the DPR. The number of coal groups linked to Durgapur Steel Plant has increased to around 12 compared to two groups envisaged in the DPR. This has resulted in wide fluctuation in blend quality due to erratic receipt pattern as well as quality variation within each group. Higher fines content in washery feed (from 5% of -36 mesh received in earlier years to around 12% currently) and ingress of sand has adversely affected the washery performance.

1.37 The micum index of coke has also become poorer (M 10 index is 15—18% currently compared to 11% envisaged by Norms Committee 1968 and obtained in the earlier years) due to deterioration in coking properties of all groups of coal. As a result of the use of coal with higher ash content, the ash content in coke produced ranged from 26.05% to 29% during 1970—83 and was much higher than the norms of 23.5% given in the D.P.R.

1.38 As regards the steps taken to ensure availability of required quality of coal, the Department of Steel stated in a note that the sampling and analysis of coal received was initially being carried out by the Research and Control Laboratory, Durgapur Steel plant. Subsequently, joint sampling of coal (by Durgapur Steel Plant and Coal India) has been introduced. This was carried out by a public analyst in the presence of representatives of Coal India and Durgapur Steel Plant and the analysis was carried out by the Research and Control Laboratory of Durgapur Steel Plant. The matter regarding deterioration in the quality of coal received was being taken up with the suppliers regularly. Apart from this, the supply of additional washed coal from other washeries has been arranged in lieu of raw coal. The plant started receiving washed coal from outside since August, 1969. Regular review meetings were held by Coal Controller with representatives of all steel plants, Railways & Coal India Limited to co-ordinate plan/supply of coal as per the Plant's requirement every month. This has resulted in better coordination and understanding of the steel plant's requirements. However, the desired level of quality was still to be achieved.

1.39 On account of lower volatile content in the coal charged and partly due to the unsatisfactory working of coke ovens there was low yield of gas. Low yield of gas not only affected the operation of main plant units but also had the following adverse effects :—

(i) Under-utilisation of by-product plants.

(ii) Change over of certain units to oil firing, resulting in extra cost of operation.

1.40 The Project Report envisaged the use of a fuel mix consisting of pitch creosote mixture and coke oven gas in the ratio of 30 : 70 in the Steel Melting Shop. On account of non-availability of adequate quantity of gas, 9 furnaces had to be changed over to oil firing at a cost of Rs. 38.07 lakhs (upto March 1978).

1.41 The consumption of furnace oil during 1970-71 to 1982-83 resulted in an extra expenditure of about Rs. 83.27 crores, out of which Rs. 1.60 crores were on account of supply of gas to the Alloy Steels Plant, necessitating consumption of furnace oil in the Plant.

Blending facilities

1.42 According to the Management, the main constraints affecting the production of better quality of coke were as follows :—

(a) Non receipt of prime, medium and high volatile qualities of coal in proper sequence.

(b) Want of buffer between coal received at the tipplers and the blends as a result of which fluctuation in the receipt of coal could not be taken care of.

(c) Technological limitation of the existing washery circuit which did not permit economic reduction in ash content of washed coal with the existing type of feed coal.

(d) Want of averaging facilities at the washery of the Steel Plant, as a result of which coal is fed to the washery from one silo out of the existing five silos.

1.43 In this connection, the British Steel Corporation in their report had pointed out in 1980 that "the raw materials available present particular problems : notably the high alumina to silica ratio in the iron ore, the high ash content of the coal and the high insoluble content of the fluxes. While there may be a limit to how far the average quality of Indian raw materials can be improved, much can be done to minimise their variability by blending and quality control. Although the basis of a modern blending system exists at Durgapur Steel Plant it is presently ineffective partly because of the state of repair of equipment but also because of design inadequacies."

1.44 The Committee desired to know the reasons for not providing proper averaging and blending facilities, the Managing Director, DSP stated in evidence :

> "It is an obvious and serious omission during the designing of the original project that proper averaging and adequate stocking facilities were not provided for different types of coal. This error is sought to be rectified under the modernisation programme." .

1.45 When asked as to whether the management came across this defect before conceiving the idea of modernisation, the witness stated :

> "Yes, It was felt by the plant management that these facilities should have been there earlier also and whatever steps could be taken by the management to minimise this defect had been taken by taking up the matter with the concerned authorities."

1.46 The Committee enquired why timely measure could not be taken to overcome this constraint. The Department of Steel in a note furnished after evidence stated that when the DPR was prepared for the 1.6 MT expansion in early sixties, the consultant and the Plant were guided by the experience of the Plant in operation the 1 MT stage. The quantity of raw material including coal were not a constraint at that time. In fact the plant at the 1 MT stage had achieved the rated capacity in 1964-65. The DPR for 1.6 MT stage was prepared on the basis of supply of coal from a very few sources. Since the late sixties quality of coal started deteriorating; also coal

was being supplied from a much larger number of sources with widely varying characteristics. The commissioning of the various units under the 1.6 MT stage had already started in late sixties. As this deterioration in quality as well as increase in sources were not anticipated at that time, provision made in the expansion scheme of the plant for averaging and blending facilities or for stocking facilities was not adequate for the increased number of sources and varieties of coal. The inadequacy of proper averaging and blending facilities for coal was highlighted by the plant management during deliberations with the Action Commttee in 1973. A number of short-term measures were taken since 1973 to take care of this inadequacy. However, the measures adopted could not yield the desired results. In 1976, MECON was entrusted to study the plant problems in depth and suggest measures for making Durgapur Steel Plant economically viable. Based on MECON's preliminary feasibility report, a Forward Technology Plan was formulated by the plant in 1977 in which the necessity of providing adequate facilities for raw materials preparation was suggested. This remained under examination but did not lead to formulation of proposals for investment decisions. In 1979, Ministry of Steel and Mines commissioned BSC(OS) to study the technological constraints and prepare a suitable development plan. Specific schemes were recommended including for averaging and blending in the comprehensive report submitted by BSC (OS) in November, 1980. These recommendations have been considered for preparation of investment plans for Durgapur Steel Plant's Modernisation which is now under active consideration of the Government.

1.47 The Committee were also informed that in the modernisation programme it is proposed to introduce :

(i) averaging facility for washery feed to limit the standard deviation in the ash content to within ±0.5%;

(ii) modification in the washery circuit to enable the washery to handle feed (raw) coal with an ash content upto 29% and clean (washed) coal with an ash content of 20% to 21%;

(iii) augmentation of bedding and blending facilities in the coal handling plants; and

(iv) washing of both lump and fine ore in the Bolani iron ore mines which will enrich the iron ore together with the facilities to improve against fluctuation in the quality.

1.48 In an integrated steel plant, the adverse performance of one unit affects the performance of other units as well. The Committee regret to note that in Durgapur Steel Plant the performance of various units has been unsatisfactory. Thus, in coke ovens unit, the production of coke was much lower than the rated capacity of 17.40 lakh tonnes per annum on account of low availability of ovens and lower pushing rate. As a result there was a net production loss of Rs. 54.68 lakh tonnes of coke during 1970-71 to 1982-83. Labour troubles and poor maintenance resulted in rapid deterioration in the condition of coke ovens which necessitated taking them down for rebuilding earlier than their normal life, affecting their availability. Inordinate delays upto 6 years in their rebuilding aggravated the situation. The Committee need hardly point out the desirability of proper

maintenance of the plant and machinery and taking up of effective measures for completion of repairs and maintenance jobs as per schedule. The Government should examine what suitable steps could be taken in future to minimise time for rebuilding batteries.

1.49 The unsatisfactory working of the coke ovens and lower volatile content in the coal charged resulted in lower yield of gas as well. This not only affected the operations of the main units but also had the effect of under-utilisation of by-product plants. Further, on account of shortage of gas, furnaces had to changed over to oil firing. This not only resulted in additional capital expenditure of Rs. 38.07 lakhs, but also in extra expenditure amounting to Rs. 81.67 crores from 1970-71 to 1982-83 on account of use of costly fuel.

1.50 Deterioration in the quality of coal received by the plant is also stated to have affected the performance of coke ovens. The average ash content of raw coal has increased to 26.5% with increased fines and sand contents as against 22.8% ash content envisaged in DPR. This has resulted in higher ash in coke produced and has deleterious effect on the operation of coke ovens, blast furnaces and rolling mills. There has also been fluctuation in the quality of coal received on account of the fact that a large number of collieries have been linked to the Plant with wide variations in quality of coal. The number of coal groups linked to the Plant is stated to have increased to around 12 as compared to two groups envisaged in the DPR. The matter deserves serious attention of Government as well as Coal India Ltd. who controls coking coal mines and also operates washeries which supply part of washed coal required by the Plant. Effective steps should be taken to ensure that the coal of required quality is available to the Steel Plant. In this connection, the question of reduction in the number of collieries linked to the plant also needs to be examined seriously.

1.51 In regard to in inconsistency in the quality of raw materials much could be done by the management to minimise its effect by having adequate averaging and blending facilities and quality control. In spite of the fact that the inadequacy of these facilities was highlighted by the Plant management in 1973, only a few short term measures were taken by the Company which did not yield the desired results. It is only now that the averaging facility for washery feed coal and augmentation of bedding and blending facilities in coal handling plants are proposed to be introduced under the modernisation programme. The Committee regret to note the delay in the provision of these facilities and would like to be informed of the reasons thereof. They, however, hope that the Government will ensure execution of the modernisation programme recommended by the British Steel Corporation within the minimum time possible.

C. Coal Washery

1.52 The Durgapur Steel Plant has its own washery, set up in April 1960 as a part of the one million tonne stage at a cost of Rs. 2.22 crores According to Audit, the installed capacity of the washery is 15 lakh tonnes of raw coal feed. The actual utilisation of the washery capacity during 1970-71 to 1982-83 was, however, stated to be much below the installed capacity ranging from 36% to 76%. The capacity utilisation had gone down from 76% in 1976-77 to 55.93% in 1982-83.

1.53 According to Audit, as a result of working of the washery at a low capacity, a sizeable quantity of unwashed prime coal had to be fed direct to the coke ovens, resulting in high ash content in coke.

1.54 The Committee enquired about the reasons for low capacity utilisation of coal washery. They were informed that it was due to the following reasons :—

(i) Deterioration in the washability characteristics of coal and increase in the fines content.

(ii) Higher downtime for maintenance due to ageing of equipment and non-availability of essential spares particularly, imported spares. Ingress of sand and high fines content in feed coal are also causing low utilisation of the equipment.

(iii) Stoppage of middling conveyor of Durgapur Thermal Power Station due to problems at their end.

(iv) Shortage of raw coal.

(v) Absence of effective averaging facility of feed coal

(vi) Labour problems.

1.55 In this connection, the Chairman, SAIL stated in evidence that alongwith washery coal feed sand and stones were received by them from time to time damaging equipment and affecting the working of the washery.

1.56 Asked about the remedial measures taken to overcome the constraints responsible for low capacity utilisation of the washery, DSP in a note furnished after evidence stated that continuous efforts were being made to improve upon the utilisation through intensive maintenance planning. However, ageing of the plant and equipment and changed quality pattern of the feed coal demand was being taken care of through refurbishing of the present plant and equipment and also redesigning of the washery circuit. Action had been initiated for implementation of these during the ensuing refurbishing and modernisation programme. Compared to 1979-80 there had been further ageing of the plant and equipment requiring higher down time for maintenance.

1.57 The DPR envisaged 6.3% reduction in ash content with 65% yield. The reduction in ash content, however, ranged from 3.19% to 4.76% during 1970—80. Coal blend with higher ash and low volatile content was, therefore, charged to coke ovens which resulted in :

— serious difficulties in operation of coke ovens.

— poor quality of coke.

— lower production of hot metal.

1.58 The Committee wanted to know the technological limitations which did not permit reduction in ash content of washed coal as provided in DPR and why could not these be overcome for such a long period. In reply, DSP in a note stated that DPR envisaged washing of coal from 11th seam and above which were having comparatively good washability characteristics and with this coal quality it was envisaged that 65% yield would be attained with 6.3% reduction in ash. However, in actual practice

DSP was provided with coal of lower seams which were having difficult washability characteristics. Also the ash content in the feed coal had gradually increased over the years. In the initial stages an ash drop of 3.2% to 4.8% was being attained with comparatively higher yield with a view to having more clean coal from the washeries. However, during the last 4 years ash content of coal from other sources as well as washery feed coal had appreciably increased. Measures were taken for improving the ash drop and these have resulted in ash drop of about 6% from middle of 1979-80 onwards.

1.59 In regard to technological limitations of the washery to deal with the quality of coal being received by DSP, the Secretary, Department of Steel in evidence stated :

> ".....the washeries are designed to deal with a certain specification of raw coal. When in the DPR, the washery was designed in 1958, the percentage of coal fines was expected to be 5 per cent. The coal which is being received today has a fines content of 15 per cent. Secondly, the raw coal has 2 to 3 per cent and, which creates tremendous difficulties in the washery equipment and pipeline, because it is a very abrasive material. It has certainly affected the operation of the washery. Further more the washery was designed on the basis that the ash content of raw coal would not be in excess of 24 per cent. The coal received now has an ash content of 28 per cent and sometimes 32 per cent."

1.60 As aginst reduction in ash content between 3.2% to 6% in DSP washery, it was 9% to 11% in Dugda and Bhojudih washeries of CCWO. The following table gives the percentage of ash in raw coal and clean coal in respect of Dugda and Bhojudih washeries during the last three years :—

Washery.	1980-81		1981-82		1982-83	
	Ash in raw coal (%)	Ash in clean coal (%)	Ash in raw coal (%)	Ash in clean coal (%)	Ash in raw coal (%)	Ash in clean coal (%)
Dugda-I . . .	30·5	22·2	30·2	21·8	30·9	21·7
Dugda-II . .	32·4	22·2	31·9	21·6	33·0	21·9
Bhojudih . . .	26·3	18·8	26·7	19·0	29·5	20·3

1.61 In this connection, the Committee enquired as to why could not improved washing facilities be provided for Durgapur washery. The Secretary, Department of Steel stated in evidence :—

> "Further improvements are being made in the washery. One improvement has been made in the recovery of fines recently by the erection of concrete ponds, which have already been built. There is also modification of the washing jigs for better operation. Some other improvements have also been made. This is part of the refurbishing programme, which has been approved in principle. The detailed schemes are now being processed by the Durgapur Steel Plant."

1.62 The problem of high ash content in coal could have been solved to some extent if the captive coal washery of the Plant had worked satisfactorily. The Committee regret to note that the capacity utilisation of the washery ranged from 36% to 76% only during 1970-71 to 1982-83. The capacity utilisation had come down from 76% in 1976-77 to 56% in 1982-83. In view of the low output of the washery, a sizeable quantity of coal obtained from other sources had to be fed to the coke ovens resulting in higher percentage of ash in coal blend and the coke produced. Higher down time for maintenance and labour problems are inter-alia stated to have affected capacity utilisation of the washery. Surely, the matters were not outside the control of management and could have been controlled.

1.63 Not only the capacity utilisation was low but the reduction in ash content ranged between 3.19% to 4.76% during 1970-80 as against 6.3% envisaged in the DPR. It is only since 1980 that as a result of certain modifications there had been improvement in ash reduction which has now come upto about 6%. The reduction in ash content is however still lower than that in other washeries like Dugda and Bhojudih which have achieved reduction between 9% to 11%. The Committee have been informed that further modifications in the washery circuit to enable reduction in ash content to the extent of 8-9% is proposed to be introduced in the modernisation programme. The Committee are unhappy over the delays in taking measures for the improvement in performance of the washery. They hope that, keeping in view the importance of captive washery in the Steel Plant, the Government and the management will take all steps necessary for modifications and modernisation, with utmost zeal on priority basis, as on washery will depend to considerable extent the efficient and successful performance of the Steel Plant. These efforts for improvement of washery are all the more necessary in the wake of deteriorating quality of coal which is likely to be available from the collieries in future.

1.64 The Committee are perturbed by another factor which affects production in steel plants. It has been stated by the representative of Durgapur Steel Plant in evidence before the Committee that, apart from the high degree of ash content, stones are also found mixed up in the coal supplied which results in frequent break-down of equipment and affects continuity in production. The Committee desire that the Government should take suitable measures so that mixing of stones with coal is eliminated altogether and quality of coal supplied to steel plants is considerably improved.

D. Blast Furnaces

1.65 According to Audit, the Steel Plant has four blast furnaces (three having capacity of 1,250 tonnes each and one of 1,500 tonnes capacity) which were commissioned between 1959 and December, 1967. The overall capacity of all the 4 furnaces has been indicated as 17 lakh tonnes per annum. Out of this, 14 lakh tonnes are envisaged to be of basic grade for use in the Steel Melting Shop and 3 lakh tonnes of foundry grade for conversion into pig iron (0.45 lakh tonnes for use in the Plant's Foundry and 2.55 lakh tonnes for sale). Actual production during 1970-71 to 1982-83 has, however, been much less than the initial rated capacity as well as budgeted production (except in 1976-77 in respect of budgeted production), and ranged from 7.93 to 11.76 lakh tonnes.

1.66 The Committee desired to know the reasons for not taking timely measures to overcome the constraints in production of the blast furnaces. The Managing Director, DSP in evidence stated that the constraints for production in blast furnaces might be attributed mainly to deterioration in raw material quality and shortage of coke. To take care of the deterioration in the raw material quality, efforts had been made to improve upon the ash-drops in the captive washery. The witness added :

> "We have also taken steps to use increased quantity of sinter in the furnaces. Against an average of 27-28% earlier, last year in 1982-83 we have been able to increase the sinter charge in the blast furnace to the extent of 36.3% which has also improved the productivity. However, full benefit could not be derived due to the high ash and poor strength of the coke."

1.67 According to Audit the Project Report did not indicate the number of working days in a year for each blast furnace. The rated capacity of 17 lakh tonnes of hot metal can, however, be achieved in 332 days based on the rated production of each furnace on 3 shifts a day. On this basis, each furnace should be available for production of hot metal for 7,968 hours in a year or all the four furnaces should be available for 31,872 hours. The actual availability of furnaces during 1970-71 to 1982-83 was however much less than the anticipated figure of 31,872 hours and ranged 19129 to 26131 hours resulting in production loss of 59.94 lakh tonnes. Based on hours expected to be available, the overall capacity utilisation of furnaces was only 73%.

1.68 Not only was the availability of furnaces low, but the actual productivity was also lower than the projected norm. As a result of lower availability of furnaces and lower productivity, there was production loss of 91.04 lakh tonnes of hot metal during 1970-83.

1.69 The Committee enquired about the reasons for the actual availability of the Blast Furnaces being far less than estimated 31,872 hours per annum. In reply, DSP in a note stated that the availability of Blast Furnace had been lower because No. 3 Blast Furnace was at the fag end of its life and No. 4 Blast Furnace had to be brought down for structural deformation. Also relining time was more than the schedule. Extra shutdown hours were attributed mainly to coke shortage and deterioration in the coke quality particularly with respect to ash and micum strength of coke, affecting the operation of the Blast Furnaces.

1.70 Asked as to what was the usual period after which a Blast furnace has to be relined and how did it compare with the actual period of working of Blast Furnace Nos. 3 & 4 DSP stated in the note that the usual period after which a furnace was to be relined is around 5 to 6 years, provided proper quality of input raw materials and consistent blowing rate were maintained. Before No. 3 & 4 Blast Furnaces were taken down in 1980 they were in operation for around 5 years 7 months and 4 years 5 months respectively.

1.71 The premature failure of Blast furnace No. 4 was attributed to the following factors :—

(a) During the previous relining, the quality of refractory job suffered due to change of Contractor during the relinging period.

(b) During flash flood in September, 1978, no charging could be carried out to the furnace for 10 hours as a result of which the furnace suffered thermal shock.

(c) Deficiency in the original design of the skip bridge which was responsible for transmission of vibration in the top portion of the furnace.

(d) Deficiency in the original design for which the furnace stack cooling could not be done properly (inadequate pressure of water development at the pump head).

(e) Deterioration in the raw material quality affecting No. 4 furnace which is a bigger furnace.

1.72 To a further query regarding time taken in relining and commissioning of the Blast Furnace Nos. 3 & 4 and how did it compare with the schedule fixed together with the reasons for delay in commissioning, DSP stated in the note that No. 3 Blast Furnace was commissioned on 19-1-81 against the schedule of September, 1980. The delay in commissioning was due to unanticipated difficulty encountered while dismantling refractory work because of metal and slag jam in the furnace. No. 4 furnace which was taken down for major structural modification and relining was scheduled to be commissioned in June, 1982. This furnace could not be commissioned as scheduled due to :

(a) Strike and indiscipline amongst the contractors labour.

(b) Deviation in the scope of work envisaged/planned earlier by MECON.

(c) Extra working required on the fabricated plate supplied by Bokaro.

1.73 According to the Annual Budgetary Norms fixed by the Management, off-grade production should not exceed 15 per cent. The production of off-grade hot metal was, however, quite substantial ranging from 20% to 40% (except in 1981-82 when it was 16.4%).

1.74 The production of off-grade hot metal not only leads to prodcution of off-grade pig iron but also affects working of the Steel Melting Shop. Under-realisation on pig iron alone amounted to Rs. 148.31 lakhs on sale of 2.68 lakh tonnes of pig iron during 1970-71 to 1982-83.

1.75 According to the Management, increased production of off-grade hot metal was due to the following factors :—

> "The quality of raw materials available in Durgapur Steel Plant Blast Furnaces has never been helpful in the production of basic grade hot metal. Whatever off-grade is made it is due to the imbalances in the thermal regime of the furnaces resulting from the raw materials fronts."

Quality of raw materials

1.76 The major raw materials, other than coal, are iron ore and limestone. As per Audit, the iron ore is received mainly from Bolani Ores now a captive mine of the Plant and the Minerals and Metals Trading Corporation of India Limited and limestone mainly from Bhavanathpur mine of the Bokaro Steel Plant, Satna mine of Rourkela Steel Plant and a private mine at Birmitrapur.

1.77 A review of the quality of raw materials with the specifications given in the project Report and those fixed by the Norms Committee indicated that :—

— Fe content in iron ore was less than the projected norms as well as the norm fixed the Norms Committee. As per draft report of the Action Committee, it was mainly due to improper operation of the blending Plant which, in turn, was on account of improper maintenance of tipplers and reclaiming machines.

— While Fe content in sinter was less than the norm fixed by the Norms Committee, silicon content in iron ore was more than the projected as well as Norms Committee's norm (except in 1970-71 in respect of project norm).

1.78 The Committee enquired about the reasons for poor quality of iron ore, which was mainly obtained from captive Bolani Ore Mines, in aspite of incurring an expenditure if Rs. 12.51 crores on modifications in the mines. The Managing Director, Durgapur Steel Plant in evidence, stated :—

> "Poor quality of iron ore from the captive Bolani Ore mines had been due to opening of new phase (F area) where there was crust on over burden which required to be removed before mining. However, absence of adequate ore handling equipment, rendered it difficult to remove the over-burden effectively. This had resulted in deterioration in the quality of the iron ore. Characteristics of this phase is that quality of ore improves as we go deeper in mining. After investing the money in purchase of adequate dumpers and shovels, improvement has been obtained in the quality of ore. Construction of work for washing of ore fines is in progress and the facility is required to be available by June 1984."
>
> He added :
>
> "Two things, alumina-silica are there. This ratio, as we go deeper, improves. The top crust has to be removed and we will have to get the iron ore from below.....this again is a part of our modernisation programme. We do not have any washing facilities and this lump coal washing will be taken in order to reduce the alumina-silica ratio which is a prime factor also for increased blast furnace productivity."

1.79 In regard to improper operation of blending plant as well as improper maintenance of tipplers and reclaiming machines, the Committee desired to know the reasons and remedial measures taken in this regard DSP in a note furnished after evidence has stated that continuous efforts are being made to improve the availability and utilisation of tippling and reclaiming machine. Also, action in this regard has been taken up in refurbishing programme. In the modernisation programme, it has been envisaged to modify the existing stocking and reclaiming facilities as well

as incorporate washing facilities of iron ore at Bolani. This will improve the Fe content and will also reduce the fluctuation.

1.80 As early as 1966, the Committee on Public Undertakings suggested expediting the setting up of beneficiation plant for iron ore obtained from Bolani mines. The Committee enquired from the Ministry the reasons for the delay in providing these facilities. The Department of Steel in a note furnished after evidence stated that an agreement for installation of beneficiation plant at Bolani Mines was reached in November, 1962 between M/s. Bolani Ore Limited and Durgapur Steel Plant. However, due to a difficulty in getting a loan, this beneficiation plant was not set up at that time. The matter, later on, was taken up with Ministry of Finance for sanctioning the required loan from some other source. The feasibility report for a beneficiation plant at Bolani Mines was prepared by M/s. Development Consultants Pvt. Ltd. in May 1974, wherein the total cost estimates was indicated as Rs. 6.44 crores. The note traced out the history of events leading to delay in decision for investment in beneficiation plant. Ultimately, a proposal for 0.52 MT/Year iron ore fines washing plant was approved by the Steel Authority of India Ltd. in March, 1981 at an estimated cost of Rs. 4.7 crores. The order for washing plant was placed on a turn key basis on M/s. DAVY ASHMORE (I) LIMITED in November, 1982 and work is in progress. The scheme is expected be commissioned in 1984.

Consumption of Materials

1.81 A review of the consumption of various inputs showed that the consumption of iron ore and coke was much higher than the norms indicated in DPR/Norms Committee. The Committee desired to know the reasons for it and steps taken by the Management to control the higher consumption of iron ore and coke. In reply, the Managing Director, DSP stated in evidence :—

> "Iron ore usage rate was more compared to norms due to lower Fe content in iron ore and lower usage rate of sinter. The higher usage rate of coke is mainly attributed to its poorer physical and chemical quality and reduced usage of sinter."

1.82 In regard to steps taken to control higher consumption of iron ore and coke, DSP in a note has stated that efforts have been made to reduce the consumption of iron ore and coke by improving the performance of the Sinter Plant, usage of high grade iron ore, usage of more quantity of purchased washed coal in the blend and improving the performance of captive washeries. These efforts have resulted in gradual decrease in the usage rate of iron ore and coke. As against 1017 kg per ton of hot metal in 1980-81 coke rate came down to 901 kg per ton of hot metal in 1982-83.

1.83 The performance of the blast furnaces was none to satisfactory. The lower availability and lower productivity of blast furnaces accounted for loss of production of hot metal to the extent of 91.04 lakh tonnes during 1970-83. The fact that the furnaces were in operation for only 73% of the hours for which these were expected to be available is a matter of concern. The lower availability of blast furnaces was mainly on account of poor quality of refractory work and design deficiencies in blast furnace No. 4, which necessitated its taking down for relining much before the

normal period, and unusally long time taken in relining work. The matter requires to be looked into with a view to fixing the responsibility. The Committee would also emphasise the need for intensifying the planned as well as preventive maintenance of the plant and machinery to improve its availability.

1.84 Not only was the production low but the quality of hot metal produced was also poor. The production of off-grade hot metal ranged from 20% to 40% as against the norm of 15%. This not only led to production of off-grade pig iron but also affected the working of the steel melting shop. The higher production of off-grade hot metal has been attributed mainly to deteriorating quality of raw material particularly iron ore which had high silicon content. The Committee find that the management itself has to bear mainly the responsibility for it. The plant receives bulk of its requirement of iron ore from its captive mines at Bolani. Absence of adequate ore handling equipment, beneficiation plant and improper operation of the blending plant has affected the quality and consistency of the ore available for the blast furnaces. As early as 1966, the Committee on Public Undertakings suggested expediting the setting up of beneficiation plant at these mines. It is regrettable that in spite of their recommendation, the setting up of the plant has been badly delayed. While the plant for washing of fines is expected to be commissioned in 1984, the facilities for washing of lump ore are yet to be established. Surely, the Committee could expect greater attention to implementation of the schemes which go a long way in improving the performance of the plant.

E. Steel Melting Shop

Furnace availability

1.85 The Steel melting shop has 9 open hearth furnaces. As mentioned in para 1.2 that the actual production of steel ingots in the shop had been much lower than the rated capacity as well as the budgeted production. Asked about the reasons for low capacity utilisation, the Managing Director, DSP in evidence stated :

> "As against the proposed expansion of the 200 tonnes furnace of 1.0 Million Tonne Stage to 240 tonnes and addition of one 240 tonnes furnace at SMS, the actual expansion of the furnaces was restricted to 220 tonnes only. The capacity of the additional furnace was also restricted to 220 tonnes."

1.86 The Committee were also informed that there had been suggestions of more utilisation of oxygen in the form of oxygen lancing and flame enrichment facilities to increase production upto 1.6 million tonnes. But apart from the new furnace installed at 1.6 MT stage, provision of oxygen lancing facilities have been made in one more furnace during 1982-83 and introduction of the same has been planned in the remaining big furnaces during

refurbishing. In addition, logistic problems in running 9 furnaces were there.

1.87 Asked about the reasons for not introducing double oxygen lancing facilities in Steel Melting Shop, the Chairman, SAIL stated :

> "They have not been able to introduce this in more than two furnaces as yet, because the oxygen plant itself is unable to supply the quantity (per minute) of oxygen required to maintain the intensity. The question now is whether in the modernisation programme, you go in for oxygen block, or scrap the open hearth itself. Going in for additional oxygen only for open hearth could be an infructuous expenditure. This has been taken care of in the modernisation scheme fully, so that this problem can be sorted out."

1.88 Lower availability of furnaces also affected production. On the basis of 292.5 working days, the eight 220 tonne furnaces are expected to work for 56160 hours and the small 120 tonne furnace is expected to be available for 7020 hours in a year. The balance of 13920 hours for the 220 tonne furnace and 1740 hours for the 120 tonne furnace and intended for re-lining and repairs. According to the DPR, continuous operation of 8 furnaces were envisaged throughout the year, 9th furnace being down for repairs. The number of furnaces actually in operation per day on an average varied between 5.03 to 7.31 during 1970—83.

1.89 Lower number of furnaces in operation was owing to more time spent on repairs as well as idleness caused by :—

(a) Frequent strikes in the plant (in 1979-80 and 1981-82 also), Railways and in other industries.

(b) Extensive power cut during 1980-81, resulting in high holding of ingot steel.

(c) Shortage of raw material for making steel.

(d) Mill shut-downs,

(e) General recession in the steel market,

(f) Substandard raw material inputs which caused extensive damage to furnace elements while in operation, thereby necessitating extra repair time on furnaces.

1.90 The reduced roof life not only affected the steel production, but also resulted in higher consumption of refractories which during the years 1970-71 to 1982-83 entailed an additional expenditure of Rs. 2.30 crores. According to the Management (November 1973), consumption of refractories depended upon the production achieved and the way the furnaces and the other units requiring refractory lining were taken care of.

1.91 DSP in a written note stated that one of the short term measures suggested by a Committee appointed in 1972 for improving the roof life was to improve the operating parameters for increasing the furnace productivity. Even after the implementation of the most of the measures suggested by the Committee, the expected benefits could not be achieved as the same were off-set by the gradual increase in the silicon content of the hot metal over the years which varied from around 1.7% in 1970-71 to above 2% in 1979-80.

1.92 In regard to non-completion of re-lining work within the scheduled time, it was noticed that the actual time taken was far in excess of the norms laid down by the Industrial Engineering Department of the plant in May 1974. The time taken in completing the re-lining work during 1970-71 to 1982-83 was of the order of 3878 days. The Management explained (November 1973) that the PERT schedule for repairs was only possible when normal conditions prevailed in the shop-floor and manning was complete. It was further explained (November 1979) that sub-standard raw materials input caused extensive damage to the furnace elements, while in operation, which necessitated extra time for repairs.

1.93 Asked as to why was PERT schedule for repairs was not possible and what was the present position in this regard DSP in a note furnished after evidence stated that the actual time taken for re-lining work (General Roof Repairs) was more than the PERT schedule because of industrial Relations Problems prevailing at that time. The excess time which was as high as 397 days in 1974-75 had been reduced to 24 days in 1982-83.

Consumption rate

1.94 A review of the actual consumption of major raw materials per tonne of steel ingot during 1970-71 to 1982-83 as compared with the norms fixed by the Norms Committee (1968) showed that, while consumption of hot metal, iron ore (except in 1982-83) lime stone and ferro-manganese was more than the norms recommended by the Norms Committee (except in 1975-76 and 1977-78 in respect of hot metal), the consumption of scrap was less than the norms in all the years except in 1975-76, 1977-78 and from 1980-81 to 1982-83. The Management stated (February 1977) that more hot metal was used for want of heavy scrap and this, inturn resulted in consumption of more lime-stone and iron ore. Lower utilisation of scrap was earlier (July 1973) attributed by the Management to :

— about 40 per cent of charging bogies awaiting repairs mainly due to lack of spares.

— general shortage of loco power and frequent break-down of of locomotives.

— shortage of steel scrap as a result of which broken ingot moulds and bottom plates were also used.

1.95 When the Committee desired to know the reasons for higher consumption of major raw materials. The Managing Director, DSP stated in evidence :

> "The higher use of hot metal is due to high and widely fluctuating silicon in the hot metal. This has resulted in the high use of iron ore and lime stone. The high use of ferro-manganese is partly due to the quality of the hot metal."

1.96 Asked about the steps taken to ensure that the consumption of raw material was within prescribed norms, the DSP subsequently in a note stated that action had been initiated to intensify desiliconisation practice for improving the usage rate of hot metal iron ore and lime-stone.

1.97 Audit have pointed out that according to the DPR, the percentage of metallic output to input should have been 89.66%. The actual ratios

during 1970—78 however much were lower than the norm of 89.37 per cent fixed by the Norms Committee. After taking into account the metallic content of excess arising of scrap as compared with the DPR norm, the lower yield in terms of short recovery of steel worked out to 1,03,906 tonnes valued at Rs. 19.08 crores.

1.98 The management had informed Audit that the following corrective measures had been taken :—

(a) Proper weighment of various raw materials, as far as practicable.

(b) Minimising losses by way of spillage.

(c) Proper weighment of finished ingots, as far as practicable.

(d) Minimising skull loss.

(e) Minimising non-rollable loss.

1.99 It was, however, clarified that due to limitation in the design of stripper crane and blooming mill much improvement in non-rollable loss was not visible.

1.100 The Ministry intimated Audit (October 1978) that DPR norm of 89.66 for metallic yield in the SMS was based on silicon content of 1.2 per cent in the mixer metal and therefore had lost its validity with the present usage of hot metal with around 1.80 per cent silicon during the years which was mainly due to adverse quality of Blast Furnace raw materials. It was further stated (October 1981) by SAIL that another Committee constituted in 1978 had recommended the metallic yield norm of 86.5 per cent and that this recommendation had been accepted by the SAIL Board.

1.101 The Committee desired to know the considerations based on which the Committee referred to above had recommended the revised norm of 86.5%. In reply, the DSP stated in a note that the Committee recommended 86.5% metallic yield which includes 0.5% as the rejections. The Committee considered the changed quality of inputs to open hearth furnace while recommending the lower yield than that earlier fixed by the Norms Committee.

1.102 Asked about the reasons for the actual yield in 1979-80 to 1982-83 (84.1% to 84.3%) being even lower than the revised norm of 86.5% the DSP in the note stated that lower yield during 1979-80 to 1982-83 compared to the norm of 86.5% (including 0.5% as rejection) were mainly attributed to the following :

(i) High metalloid content in the hot metal compared to that envisaged in the norm.

(ii) Use of Oxygen in more number of furnaces which was not considered while fixing the norm.

(iii) Imbalance between steel ladle capacity and furnaces capacity.

1.103 When asked whether any action had been taken to increase the metallic yield the Managing Director, DSP stated in evidence :

> "Within the control of the Plant what they have done is that they have increased the sinter percentage in the usage which partially compensates for the ill effects of the detriorating quality of coke and other things."

1.104 On the question of imbalance between furnace capacity and steel ladle capacity the witness stated :

> "Because of the lower capacity of the ladles, some steel spills over, which of course, we recover later on, but from the point of view of yield, it goes down."

In this connection, the Chairman, SAIL also stated :

> "It is not desirable to have imbalance between the ladle capacity and the furnace capacity and care is to be taken to see that furnace is loaded a little less and they have tried to increase ladle capacity, but they have not succeded to the extent necessary. This will be intensified because this is a component which a plant can consciously try to further improve upon without any doubt. It has nothing to do with external factors."

Excess consumption of ingot moulds and bottom plates

1.105 According to Audit, the Norms Committee appointed by the Company in March 1968 had fixed a norm for consumption of 15 kgs, for ingot moulds and 9 kgs. for bottom plates *i.e.* a total of 24 kgs. per tonne of rollable steel, no norms were indicated in the DPR.

1.106 The actual average consumption of ingot moulds and bottom plates during 1970-71 to 1982-83 was however, higher than the norm fixed by the Norms Committee. The consumption of ingot moulds and bottom plates fluctuated between 24.79 kgs. to 34.77 kgs. The higher consumption was attributed by the Management to :—

- — receipt of more second class ingot moulds and bottom plates.
- — mill shut down and loco delay resulting in higher cycle time of moulds and bottom plates and cleaning of moulds.

1.107 A sample study of tapping temperature, metal holding time and mould idle time in respect of 96 moulds (8 tonne capacity) made in November 1973 had indicated that if metal holding time could be brought down by about a quarter of an hour (*i.e.* from the average holding time range of 1.8 hours to 3.5 hours), the life of the mould could improve by about 10 heats. In other words, the consumption of ingot moulds per tonne of steel could be reduced by about 4.5 kgs.

1.108 The Committee find that the production of steel melting shop has suffered inter alia **due to deficiencies in planning and execution of expansion programme. The capacity of the open hearth furnaces was not expanded as envisaged in the DPR. Provision of double oxygen lancing facility, which was decided as an alternative to increase production, was also not made except in two furnaces. The reason for this failure should be looked into and steps taken to correct the imbalance between the capacity of the steel melting shop and other units of the plant.**

1.109 Production was also affected because of lower availability of furnaces on account of lower roof life, excessive time spent on completion of re-lining work, and low percentage of yield due to factors like imbalance between the steel ladle capacity and furnace capacity etc. All this shows that the production management left much to be desired. The Committee emphasise the need for constant vigil on the operations of the plant and taking up of measures to ensure its optimal utilisation. Effective steps should also be taken to control excessive consumption of raw materials and of ingot moulds and bottom plates, etc.

F. *Rolling Mills*

1.110 The Rolling Mills consists of Blooming Mill (32"), Intermediate Mill (32"), Billet Mill, Section Mill, Merchant Mill, Sleeper Plant, Fish Plate Plant, Skelp Mill and Wheel Plant and Axle Plant. A review of the actual input, the output and the process loss (including scrap arisings) during 1970-83 showed that none of the Mills (except sleeper plant in 1977-78) has attained the rated production, partly on account of non-availability of feed stock (due to non-operation of preceding units at full capacity) and partly due to other reasons. By and large, actual production was also less than the budgeted production in all the Mills.

1.111 The Committee wanted to know the main constraints apart from low production of steel ingots in achievement of rated production by these mills and the steps taken by the management to overcome them. The Durgapur Steel Plant in a note stated that the reasons for lower production in the mills during 1970-71 to 1977-78 were as follows :

(a) Heat delays and extra time taken per heat due to higher cold charges.

(b) Strike and labour troubles.

(c) Power and gas cuts.

(d) Mechanical break-down.

1.112 After the commissioning of 4 new Soaking Pits by August-Sept. 1977, the heat delays and extra time taken per heat due to higher cold charges in Blooming Mill reduced considerably. Also during the subsequent periods the Industrial Relations had improved and delays due to strike and labour trouble were controlled. During the last five years the main reasons attributable for lower production in the mills were as under :—

(i) Frequent power restriction/cuts from DVC.

(ii) Shortage of BF and CO gas.

(iii) High mechanical breakdowns, particularly in Blooming Mill.

1.113 A number of actions had been taken by the plant management to overcome the above constraints . To control equipment breakdown, a number of measures have been envisaged in the refurbishing plan. To overcome power shortages, a 2×60 MW power plant is stated to be under construction. Also efforts were being made to intensify the planned and preventive maintenance of the plant. To ease the problems arising from low availability of CO & BF gases, oil firing facilities have been provided in the re-heating furnaces of Section Mill.

1.114 The Committee were also informed that BSC (OS) during their study on the Plant's achievable capacity in April, 1980 conducted a detailed monitoring trial on the 42" primary mill with respect to the rolling load, capability of drive system and other components of the mill stand. It was indicated in their report that the optimum utilisation that a mill of such design and layout could achieve was 66%. Taking all factors into consideration they concluded the mill capacity as 1.16 million tonnes. The Committee enquired about the Ministry's assessment in regard to reduction in rated capacity of the plant on account of these deficiencies. The Secretary, Department of Steel stated in evidence :—

> "....the most important constraint is the deficiencies in raw material characteristics and consistency and it is this that has constrained the production based on 100% capacity operation to 1.15 MT p.a. ingot steel. The blooming mill can process 1 mt p.a., ingot steel readily without any further investment except for normal maintenance."

1.115 Asked as to whether any responsibility was fixed for these deficiencies in planning and execution of the expansion programme, the Durgapur Steel Plant in a note furnished after evidence stated that the commissioning of 1.6 MT Stage was started in 1968 and completed by 1969-70. Due to the general conditions in the area during late sixites and early seventies, the performance of the industrial sector as a whole was far from normal and under these circumstances, proper evaluation of the performance of the expanded Durgapur Steel Plant and assigning of responsibility for the deficiencies were not feasible.

Wheel and Axle Plant

1.116 The Durgapur Steel Plant was designed as the principal supplier of wheels and axles, sleepers and fish plates to the Indian Railways.

1.117 According to Audit the Wheel and Axle Plant was set up under the one million tonne stage to produce 45,000 wheel sets (30,000 B.G. sets and 15,000 MG sets) per year. The capacity of the plant was increased to produce 66,000 tonnes of wheels and 27,000 tonne of axles constituting 75,000 wheel sets (60,000 B.G. sets and 15,000 M.G. sets) per year from 1970-71 onwards.

1.118 Actual production during 1970-71 to 1982-83 was, however, much lower than the rated capacity and budgeted production. When the rated capacity of the plant was 45,000 wheel sets, the actual production increased from 5769 in 1962-63 to 23736 in 1964-65 after which it gradually declined to 9040 in 1969-70. With the increase in capacity to 75000 sets in 1970-71, the actual production increased to 11900 in that year but declined in subsequent years. The production, however, picked up to 12,323 sets in 1975-76 and to 13021 sets in 1977-78. In 1978-79, the production increased to 14,256 sets but it gradually came down to 8081 sets in 1982-83.

1.119 In pursuance of the recommendation of the Committee on Public Undertakings in it First Report (1971-72) and 41st Report (1973-74), a plant level internal committee was appointed by the Company (March 1973) to look into the problems of Wheel and Axle Plant and to recommend steps to be taken to improve production within the existing constraints.

1.120 The Committee in its report (November 1973) pointed out the major bottlenecks *viz.* self imposed quota system by workers, shortage of material, failure of new incentive scheme prepared in consultation with administrative Staff College, Hyderabad, high downtime and absence of effective inter-stage inspection leading to excessive re-work, etc. The Committee also observed that 40,600 wheel sets per annum could be produced with the existing equipment but further investment in the form of additions and modifications would be called for in case the capacity was to be raised beyond 40,600 sets.

1.121 The Committee recommended, among other things, the following measures to improve the production :—

(a) Satisfactory labour-management relationship.

(b) General discipline.

(c) Managerial action to bring production at par with standard cycle time.

(d) Bringing of rejections and re-work within specified norms.

(e) Introduction of suitable maintenance management to bring down mechanical and electrical delays within specified norms.

(f) Streamlining of general co-ordination and communication between various sections of Wheel and Axle Plant.

(g) Development of new incentive bonus scheme.

(h) Cleaning lubrication, periodical check-up, overhauling and testing of machines and equipments.

(i) Quality norms.

1.122 In regard to implementation of the above recommendations, the Audit have pointed out that the management in their report (June 1976), indicated that most of the recommendations had since been implemented as a result of which the general discipline had improved, rejections/re-work had been reduced and the production had picked up. The position, however, continued to be unsatisfactory.

1.123 In January 1976 the Ministry of Steel & Mines (Department of Steel) constituted another committee under the Chairmanship of Shri M. Sondhi to examine and recommend measure to be taken to step up the production of wheel sets by the Plant. Sondhi Committee after considering all aspects of working of the plant made a number of recommendations.

1.124 In regard to the implementation of the recommendations of the Sondhi Committee SAIL Management informed Audit (October 1981) that the present status of implementation of recommendation was as follows :—

—Variable pitch circle diameter multi-spindle drilling and tapping machine has been installed in 1979.

—The equipment necessary for extending the production from 40,000 to 50,000 sets has been ordered and these are in the various stages of implementation/installation.

—The Railway Board is doing the overall co-ordination as recommended by the Committee.

1.125 Another Internal Committee appointed by the Company (March 1973) stated in its findings that the low production was due to the following reasons :—

(i) Unfavourable industrial relations.

(ii) Low as well as interrupted supply of steel.

(iii) High rejection and re-work.

(iv) Mill/equipment breakdowns.

1.126 There was, however, better production during 1975-76 and 1977-78 as compared to earlier years, yet, as compared to the rated capacity, the production was very low even though loss of man hours due to industrial relations came down to nil.

1.127 Due to low production, fixed charges to the extent of Rs. 42.80 crores remained unabsorbed during 1970-71 to 1982-83 resulting in higher cost of production. The actual cost of production of wheel sets represented 116% to 417% of the average sales realisation during the years 1970-71 to 1982-83.

1.128 As stated above one of the reasons given by internal committee for low production was heavy rejections. In the case of wheels the percentage of process loss during 1970-71 to 1982-83 varied from 53.30% to 66.7% (except 44.6% in 1977-78) which was more than DPR norm of 49.2% as well as norm of 45% of the Norms Committee. In case of axles, the percentage of the process loss etc. for the same period fluctuated between 44.5% and 58.20% (except 29.1% in 1970-71) which was more than DPR norm of 34.1%.

1.129 In the case of the Axle Plant, the higher rejections in the Machine Shop were attributed mainly to the indifferent attitude of workers and lack of proper motivation and also to the wear and tear of various equipment in the Axle Machine Shop and Forge Shop. A large number of axle blooms were generally rejected mainly due to steel defects and rolling defects. As regards wheels, the rejections were attributed to wear and tear of various equipment in Wheel Forging Shop, inconsistent control on quality aspects at rolling and forging stages and inaccuracy of machine tools due to ageing. Besides, the above reasons for high precentage of rejections, it was stated that both in wheel and axle plant there were steel defects arising out of poor raw material quality.

1.130 In reply to a question in Lok Sabha (USQ 2955 dated 10-8-83.) it was stated that certain balancing facilities were required to augement the capacity to 50,000 wheel sets per annum. The Committee enquired about the reasons for the plant requiring additional machinery for achieving capacity of even 50,000 sets whereas as per expansion programme, the capacity was stated to be 75,000 sets. The Secretary, Department of Steel stated in evidence :

> "It is an over-estimation. It was part of expansion upto 1.6 million; and when we found that there were bottlenecks and we were getting nowhere near it, committees after committees were appointed to go into it. The assessment of the two most recent committees, viz. Sondhi Committee and Berry Committee was that realistically speaking, this facility could only

produce 40,000. This also required a number of steps, including substantial improvement in maintenance, inter-stage inspection to be much more rigorous, machine tool re-conditioning to be done by installing hydraulic test benches etc. and most importantly, that industrial relations and work practices should be improved suitably. Even for the 40,000 sets, some additional facilities were required to be given including changing of diesel chargers. There were many other recommendations. In addition, the possibility of doing slightly more than 40,000 i.e. upto 50,000 also required certain steps to be taken."

1.131 The Committee enquired about the orders placed by Railways and supplies made by DSP of wheel and axle sets to them during the last five years. In reply, the DSP in a note furnished the following table :—

Year	Total order for the Rlys. (equipment wheel set)	Actual supply (No. of sets)
1978-79	35,328	16,058
1979-80	39,811	16,169
1980-81	37,117	14,809
1981-82	26,648	13,807
1982-83	14,870	10,520

1.132 In reply to a question in Lok Sabha (USQ 2955 dated 10-8-83), it was stated that the total foreign exchange released to the Railways during the last two years for import of wheels, axle, Tyres and wheelsets was as follows :—

1981-82 . .	Rs. 25·30 crores
1982-83	Rs. 43·52 crores

1.133 Asked about the reasons for non-execution of the orders in full, the Managing Director, DSP explaining the reasons stated that there had been a change in the product-mix given by the railways. According to the project they were to do 60 per cent rather bearing and 40 per cent plain bearing. Then the ratio was changed to 70 per cent roller bearing and 30 per cent plain bearing. In 1975-76 the pattern had come down to 87.5 per cent roller bearing and 12.5 per cent plain bearing. This change in product mix had put them into difficulty. Another reason was the increase in rejection and in re-processing.

In this context, the witness added :

"While analysing these things we found that, though we have implemented all the recommendations made by the Technical Committee set up by the plant in 1973, we have not been able to commission all these things as suggested by Sondhi Committee. We find today that the plant requires investment in order to cut down rejections in the 6,000 tonne Press and axle hammer plant. When we wanted to take action, we wanted to know from the railways their demand forecast for five years, which we have not got. It is only after we get, then we can take this type of investment decision."

1.134 Subsequently, in a note DSP stated that due to extremely unremunerative price structure of wheel and axle except in 1982-83 the priorities were given for production of other finished products during DVC power restriction and gas cut. Any cuts in production were first effected in wheel & axle plant so that more remunerative products could be produced in larger quantities.

1.135 In this connection, the Secretary, Department of Steel in evidence stated :

> "Until two years ago, the price that the Railways were paying for wheels and axles to Durgapur was less than the landed price. But there were many steel items being sold in the country for prices which were lower than the prices for imported ones. Till a few years ago, the steel prices in India were lower than the world prices. Also the price that was being paid was according to certain detailed assessment by the Chief Cost & Accounts Officer which was looked at by the Committee of Secretaries in which the BICP representative was also a member, and that price was substantially higher than what they had been paid earlier. But even that price proved to be unremunerative. That was one of the major reasons, the fair price was based on 80 per cent capacity utilisation. But unfortunately Durgapur has never been able to produce even 80 per cent of the downrated capacity. I do not think that just pricing can be held responsible for everything that has happened. But it was one of the factors. There have been many other problems in the Wheel and Axle Plant in Durgapur. There have been problems of equipment, problems of quality, the rate of rejections has been very high ; possibly there have been deficiencies in plant operations. There have been problems of industrial relations. So there are many reasons for this. I do not think that pricing alone can be held to be the reasons. Since April, 82 the price has been de-regulated. Today the prices are more or less on par with landed prices. But we have still not been able to achieve anywhere near even the derated capacity."

1.136 In a note subsequently received from the Department of Steel the Committee were informed that with the increase in price announced on 23-7-83 the total price for indigenous 20 TRB wheel set would come to Rs. 18,082/- (including assembly charges of Rs. 150/- per set) as compared to the import price of Rs. 16,970/-. However, these prices are still slightly lower than the cost of production. The estimated cost of production plus 12% post tax return for 1983-84 works out to Rs. 19,000 per set as against the current selling price of Rs. 18,082/-.

1.137 It was reported that Railways had decided to establish its own wheel and axle plant at Bangalore with an installed capacity of 70,000 sets per annum. The Committee enquired about its effect on the wheel and axle plant at Durgapur Steel Plant. DSP have stated in a note that the effect of setting up of the Wheel and Axle Plant by Railways on Durgapur Steel Plant can only be assessed after obtaining a firm demand forecast from Railways with respect to wheels and axles. In a meeting held on 6th September, 1982 with the Railways, Railways have indicated that a demand forecast of 48,420 number of Wheels and 2460 number of Axles

per annum (16,960 number of equivalent sets). With the setting of the Wheels and Axle Plant by the Railways at Bangalore, they have indicated that most of the demand for wheels and axles from DSP would be in special new products for diesel and electric locos and passenger coaches since they are likely to cover their requirement of standard wheels from their own plant. While Ministry of Railways have given assurance to the Department of Steel of covering present production of DSP they have not indicated that this would continue in the standard wheel sets being presently supplied by DSP. This in effect would mean that DSP will have to switch over to new different profiles leaving standard wheel sets with the Railways for their Wheel and Axle Plant at Bangalore. In case Railways continue to abide by their commitments and take the standard wheel sets produced by DSP, as in the past, DSP will not have any problem. However, in order to reduce the rejections and thereby improving production certain investment is necessary in Wheel and Axle Plant of DSP. This will automatically increase the capacity utilisation of the same. In the absence of any firm order forecast from the Railways and in view of setting up of their plant at Bangalore, it will not be possible for them to take any investment decision.

1.138 The Committee enquired from the Ministry about the latest position in this regard and whether the Ministry of Railways have agreed to take the standard wheel sets produced by Durgapur Steel Plant to the extent of their production capacity. The Secretary, Department of Steel stated in evidence :—

> "This was the Government's decision announced in Lok Sabha also. But I should be very frank in saying that DSP are facing a very serious problem that one axle forging hammer has cracked. Another one has also been damaged. To replace these to produce the quantity and quality required will cost Rs. 15 crores. So, the cost effectiveness of this additional investment is certainly being studied. But we are also studying the possibility whether both TISCO and new plant of Railways have the machines to manufacture these types of axles. We cannot manufacture new types of axles required by the Railways with the facilities that we have today. Further facilities will have to be created. Therefore, this matter is being discussed with the Railways."

1.139 The Committee are distressed to note the poor performance of the Rolling Mills. None of the Mills had attained the rated production. By and large, the actual production was also lower than the budgeted production. In this connection, the Committee find that there were inherent design and lay-out deficiencies in certain mills. For instance, in the case of blooming mill, the British Steel Experts had concluded that the optimum utilisation which a mill of such design and lay-out could achieve was 66%. The Managing Director of Durgapur Steel Plant was frank enough to admit in his evidence before the Committee that there were certain areas which could have been planned a little better and the equipments could have been a little more sturdy. The Secretary of the Ministry also stated that the blooming mill could process only 1 million tonnes of ingot steel per annum without any further investment as against rated capacity of 1.6 million tonnes. The Committee regret to note the serious deficiences in the plant

and equipment of some of the Rolling Mills and desire that the responsibility for it be fixed.

1.140 The performance of the Wheel & Axle Plant has also been most unsatisfactory. The rated capacity of this plant after expansion was fixed as 75,000 wheelsets per annum. However, a number of Committees that had gone into it had assessed that the plant could produce only 40,000 wheel sets per annum and that too if various additional facilities were provided and remedial measures taken. The actual production has been nowhere near the rated capacity, the highest capacity utilisation being 19% in 1978-79 which has also gradually deteriorated to barely 11% in 1982-83. Various factors like slackness in inter-stage inspection, heavy rejections, deficiences in maintenance of equipment, unsatisfactory industrial relations and work practices, failure to provide balancing equipment etc. which have been responsible for lower production were not beyond the control of the Management. The low production besides entailing heavy financial loss to the company resulted in heavy drain of foreign exchange on import of wheels and axles by the Railways. The total foreign exchange released on this account during the last 2 years (1981-82) alone amounted to Rs. 68.82 crores. As early as 1971, the Committee on Public Undertakings had recommended in their First Report (5th Lok Sabha) that the Ministry should make a detailed inquiry into the working of the unit to find out the reasons for abnormally low production and remedial measures should be taken to improve production performance. Although the matter is stated to have been inquired into by two Committees and steps taken for the implementation of their recommendations, the performance of the plant instead of showing any improvement had gone from bad to worse. Apparently the half-hearted measures taken by the Management had little impact on the performance of the plant. Presently, the plant has been seriously damaged and the replacement of affected equipment is estimated to cost Rs. 15 crores. The Committee desire that the responsibility for severe damages to the plant be fixed and action taken against defaulters.

1.141 The Committee also find that the Railways have been permitted to set up a captive wheel and axle plant with substantial capacity. The Ministry of Railways have also indicated that most of their future demand for wheels and axles from Durgapur Steel Plant would be in special new types of wheels since they were likely to cover their requirement of standard wheels from their own plant. The plant at Durgapur was, however, not in a position to produce them and would require modifications and substantial additional investment. Added to this is the question of the price for the supplies to be made to the Railways. In spite of the fact that the price fixed at present is higher as compared to the import price, it is not still remunerative in view of high cost of production. The Committee, therefore, recommend that the whole question of the continuance of the production of wheels and axles in Durgapur Steel Plant needs to be thoroughly examined, taking into consideration the pattern of demand and the cost effectiveness of the additional investment required for replacement or addition of equipment, etc. The Committee would like to be informed of the final policy decision taken by the Government in due course.

Power Shortage

1.142 One of the constraints affecting the production of the plant especially the rolling mills was stated to be power. In this regard, the Audit have stated that the Plant requires 60 MW of power for a rated production of 1.6 million tonnes of steel. In addition to the contracted supply of 45 MW from Damodar Valley Corporation (DVC), it has a captive power plant with an installed capacity of 20 MW and firm capacity of 15 MW. During 1970-71 to 1982-83, as against minimum guarantee (45 MW continuous) of 394200 (in 1000 KWH), the actual supply from DVC ranged from 199575 to 269774 and load factor from 52% to 68%. In regard to its own plant as against firm capacity of 131400 (in 1000 KWH based on 100% capacity utilisation with ISMW), the actual generation of power varied from 60728 to 103951 and load factor from 45.3% to 76%. According to DSP, the shortfall both in supply level and frequency faced was considerable which was effecting sinter and saleable steel production directly and other major units indirectly. Frequency fluctuations leads to tripping of the heavy oxygen plant. Apart from loss of rolling mills production the ingot steel production was affected due to restricted availability of oxygen for lancing.

1.143 The loss of production of saleable steel in the last ten years due solely to power shortage was stated to be as follows :—

Year	Loss of production of saleable steel due to power shortage (Figures in tonnes)
1973-74	69,973
1974-75	54,100
1975-76	2,715
1976-77	Nil
1977-78	36,608
1978-79	27,249
1979-80	353,392
1980-81	250,157
1981-82	46,412
1982-83	55,495
1983-84 (upto July)	53,353
Total	949,454

1.144 A proposal for installation of another captive power plant of 90 MW capacity at an estimated cost of Rs. 42.3 crores was initiated in March 1974. In November, 1977, it was decided to install a captive power plant of 120 MW capacity with a provision for an additional unit of 60 MW capacity at an estimated cost of Rs. 52.60 crores. In September 1978, the Government accorded sanction for Rs. 54.91 crores. The estimated cost was revised to Rs. 90.48 crores and sent to the Board of the SAIL in May

1980. The Board approved the revised estimate of Rs. 80.68 crores in July 1980. The Committee enquired as to when was the power plant actually sanctioned by Govt. and at what cost. The Chairman, SAIL in evidence stated :—

> "Government of India approved it on 8th September, 1978. Subsequently the estimated cost had to be revised when the contract was awarded. Original cost was Rs. 54.91 crores. Revised cost in October, 1981 was Rs. 82.46 crores."

1.145 As regards reasons for revising the cost, the Department of Steel in a note stated that the original cost estimate of the 2 × 60 MW Captive Power Plant at Durgapur (Sanctioned in September, 1978) was Rs. 54.91 crores. This was based on the prices prevailing during the first quarter of 1978 and in conformtiy with Government policy on the preparation of cost estimates, it did not provide for any escalations. The revised cost estimate sanctioned on 31-10-1981 was Rs. 82.46 crores based on the value of the actual orders placed and prices of other equipment (not ordered) as prevailing during the first quarter of 1981.

1.146 As regards the reasons for the delay in sanctioning of the captive power plant by Government. The Secretary Department of Steel stated in evidence:

> "In 1974 the general policy of Government was not to allow captive power units. We had several proposals for Bokaro, Durgapur and Rourkela and went to Government. It was turned down, on the basis of calculation of the power position in West Bengal, DVC and in Bihar. This indicated that there was surplus power position in this area."

1.147 When asked at to how was it ascertain that there was surplus power situation in the area, the witness stated :

> In 1974-75 the installed capacity was assessed at 3208 MW. The effective capacity was assessed at 2217 MW plus effective capacity in existing captive power station - 187 MW. Therefore, the total effective capacity in 1974-75 was assessed at 2304 MW. Peak demand was anticipated at 2054 MW. Priority industrial demand was 907 MW agricultural demand was 140 MW. Total priority industrial and agriculture demand 1047 MW, other demands 1007 MW, available capacity and other demands was 1257 MW, surplus 250 MW. The surplus which was estimated at 250 MW in 1974-75 was assessed at 218 MW in 1975-76, 291 MW in 1976-77, 354 MW in 1977-78, 792 MW in 1978-79. This was the situation in which these capitive power proposals could not be pursued further. It was turned down. In May 1976 the Cabinet Committee reiterated the decision. Captive power units would not be allowed to be installed in any industry. This matter was reviewed again and it was only at the end of 1977 the Government did agree that the captive power plants may be considered but in very very exceptional situations. As soon as this decision was taken, we pursued this proposal for Durgapur and we did get it approved in 1978, even though there were several institutions within the Government which opposed this proposal. At that time Farakka was anticipated to be in production - 400 MW was expected in 1983-84 and in 1984-85, 600 MW."

1.148 The Committee desired to know the latest position of the installation of the captive power plant and whether there had been any time and cost over run in setting up of the plant. In reply, the Durgapur Steel Plant in a note stated that as per the contract the first unit was envisaged to be commissioned in December, 1982. Accordingly orders for main plant and equipment, namely boilers and turbo generator sets were placed on M/s. Electrum Poland. The commissioning of the project had been delayed due to slippage in civil and structural works by M/s. HSCL and structural and equipment erection by M/s. Electrum. According to DSP, the first unit, was likely to be commissioned in second quarter of 1984. In regard to cost overrun, they stated that they were still within the revised approved estimates of Rs. 82.46 crores.

1.149 On the subject of cost of generation, the Committee enquired about the estimated cost of generation by the captive power plants vis-a-vis cost of power drawn from DVC. The Department of Steel in a note furnished after evidence have stated that the cost of generation from the captive plant was estimated at 16 paise/unit when the project was sanctioned in 1978 (on the basis of the price prevailing in the first quarter of 1978). The cost of generation was estimated at 27.6 paise/unit when the revised estimates were sanctioned in October, 1984 (based on the prices at that time). The present estimated cost of generation is estimated at 34.5 paise/unit. The present cost of power drawn from DVC is 49.5 paise/unit.

1.150 In the absence of captive power plant, the Committee enquired as to what efforts were made at the Ministry level to see that adequate power was available to the Steel Plant. The Secretary Department of Steel in evidence stated :—

> "We do have several forums of discussions and very continuous discussion. There is a plant level committee with DVC itself and there is a SAIL inter-action with DVC. There is a Secretaries Committee on infrastructure and also a cabinet sub-committee on infrastructure. There is a very very continuous dialogue. The question arises how the overall power shortage is to be shared and what priority can be accorded. As a result of this dialogue something has happened and I would give some illustrations. The first allocation made to us was 162 m.w. As a result of dialogue, we were able to get 170 m.w. Then, this was related to how much they were able to produce overall. If DVC was able to operate at the level of 600 m.w. we were given the allocation of 162. As a result of our going through the cabinet sub-committee on infrastructure, we were able to get 170 m.w. At the level of 650 m.w. our allocation was fixed at 190. Allocation of 700 MW is 210 MVA and at 750 MW it is 230 MVA. This is for all the steel plants where the DVC supplies including Bokaro, IISCO and Durgapur....There has been some benefit of having committees of this nature. But we must recognise that throughout, the demand has exceeded the supply. We would not be able to get complete power-cut exemption because the other industries like coal mines also require some power."

1.151 The Committee find that the non-availability of adequate power from DVC had also affected the production at the Plant especially in the Rolling Mills. The loss of production of saleable steel during the last 10 years (1973–83) solely due to power shortage is stated to be about 9 lakh tonnes. The Plant was having a small captive power plant with a firm capacity of 15 MW. Unfortunately the capacity utilisation of this plant has also been low affecting even the limited quantity of power which could be available from this plant. There has been delay in sanctioning and setting up of additional captive power plant to meet the power requirement. Although, a proposal for the installation of the captive power plant was initiated in March, 1974, this was not approved by the Government at that stage because of certain wrong assessment in regard to overall availability of power in this area. It was only in September, 1978 that a power plant of 2 × 60 MW was sanctioned for Durgapur Steel Plant.

1.152 The Committee are distressed to note that there has been inordinate delay in sanctioning additional captive power plant to Durgapur Steel Plant. Whatever may be the considerations for the Government taking a decision for not allowing captive power units for other industries, in view of direct effect of short supply of power on its production, Durgapur Steel Plant should have been made a special case for sanctioning captive power unit. This aspect of the matter assumed greater importance as the load factor from DVC ranged between 52% to 63% only during 1970-71 to 1982-83 and short supply could not be compensated from other sources.

1.153 The Committee are sorry to note that besides valuable time lost in sanctioning of the project there had also been delay in setting up of the plant on account of delays in the supply of equipment as well as in civil and structural work. The first unit which was expected to be commissioned in December, 1982 is now expected to be ready by the end of second quarter of 1984. The cost has also gone up and the revised cost is esitmated to be Rs. 82.46 crores against the original approved estimate of Rs. 54.91 crores. The Committee are unhappy over the delays in execution of works connected with installation of the plant and cost over run in its setting up. They hope that now all out effort will be made to commission the captive power plant by the revised target date and effective monitoring of progress of the works will be done to achieve thih end. In the meantime steps should be taken to see that adequate power is made available to the Plant from other sources.

CHAPTER II

PERSONNEL MANAGEMENT

A. *Manpower Analysis*

2.1 The number of men employed in the Works Department of Durgapur Steel Plant as on 31-3-83 was 24,846 which was more than the assessment of 22005 men made by the Industrial Engineering Department (IED) in 1963-64. The number of men in General Administration and Township was 7570. (These figures exclude number of men employed on construction activity).

2.2 According to Audit, in November 1968 the staff strength of Works Department of the plant was frozen by the Board of Directors at 19,601 (1,069 executives and 18,532 non-executives). Similarly, the staff strength of administration and township was frozen at 6,918 (211 executives and 6,707 non-executives). As a result of a study made by the Management in consultation with the Administrative Staff College, Hyderabad in March 1972, the non-executives strength of works department was fixed at 19,206. This was subsequently revised in December 1972 to 19,614. The actual strength was thus not only more than the manpower requirements assessed by the Industrial Engineering Department (1963-64) but also exceeded the strength fixed in March 1972/December 1972. The Committee enquired about the justification of much higher staff strength. The DSP stated in a note that the Administrative Staff College had assessed the reference manpower for the works at 19,614. This was to be used as a base for computation of incentive earnings as per scheme made by the Staff College. The actual manpower, in March 1972, however, was 22,386 for the Works Departments. It was 24,846 at the end of 1982-83. The increase works out to 2,460, the reasons for which were as follows :—

(i) Certain Departments which were earlier included in the non-works groups viz., Township garage, plant Central Stores and Training Departments were reclassified in 1981-82 under Works Group in order to maintain parity with other units of SAIL.

(ii) There was an increase of 495 men on account of installation of balancing facilities and for fuller utilisation of equipment installed under the 1.6 MT stage. A further increase of 221 men accrued on account of departmentalisation of certain jobs which were hitherto being performed by contractors.

Elaborating, DSP stated that lately efforts had been made to contain the manpower by not filling up the vacancies arising out of normal wastages.

2.3 On the question of excessive manpower deployment the Secretary, Department of Steel in evidence elaborated :

"There was a certain manpower deployment for the one million tonne ingot stage. Later on, the expansion came. Additional faci-

lities were built and taking those into account as well as further facilities established as a result of the report of the action committee, we got the additional requirement. The manpower established is consistent with the reference manpower that existed at the one-million ingot stage completion. But further facilities had been erected during the period of last 10 to 12 years. It is not to say that it is, in fact, the optimal manpower or tightest manpower because certainly our manpower deployment in steel plants compares very unfavourably with the manpower deployment elsewhere in the world—Japan, Britain and so on. Here, I would only highlight two or three points. We do have certain systems here which are different to the system elsewhere. For instance very specialised maintenance like the annual turn around maintenance is done by our own people here. Elsewhere it is done by specialised contractors. There are a number of jobs in other countries in the steel plants which are done by expert contractors whereas in India, the general trend of policies is also that this must be done departmentally. I am not for the moment talking of the manpower deployed in looking after township etc. where steel plants run their own townships and have functional municipalities. I would just mention these are some of the salient features in regard to manpower."

2.4 When the Committee pointed out that even taking into account the various factors there was need of improvement in the deployment of manpower in Steel Plants, the witness submitted :—

> ". . . .the deployment of manpower in our steel plants needs much more careful looking into because one cannot accept that work practices, productivity and so on are, what they should be. This is where there have been problems. I may just mention that during the last few years, two important developments have taken place. The most important is the latest long-term settlement of all the unions which has a specific clause that both the managements and the unions will jointly study how to improve productivity."

2.5 The problem of overstaffing in works department as well as general administration and township of Steel Plants was considered by the Committee on Public Undertakings in 1971 and the Committee in their First Report (5th Lok Sabha September 1971) has *inter alia* observed as follows. "The Committee hope that the staff strength in the steel plants will be adjusted in accordance with the latest studies and Governments/HSL would take the opportunity offered by the expansion scheme of the steel plants and Bokaro project to gainfully employ the surplus staff as early as practicable and possible". In June-July 1972 Government had informed the Committee on Public Undertakings that new production incentive schemes which provided sufficient motivation to work with the strength recommended by the Administrative Staff College had been evolved and it was expected that the additional monetary benefits arising therefrom would induce the workers in works department to agree to the shedding of surplus manpower. In regard to the implementation of the incentive schemes, SAIL intimated (October 1981) as follows :

> "The study as indicated was done by the Administrative Staff College, Hyderabad, with a view to introducing incentive scheme only for the major production units. The rest of the study was not completed by the Staff College. Subsequently, the scheme had to be

replaced. A new scheme was introduced in consultation with the Trade Unions when a study of the manpower was made by the industrial Engineering Department and no appreciable—excess manpower was revealed."

2.6 In this connection, the Committee desired to know why the incentive scheme evolved by the Management based on the study of the Administrative Staff College was not introduced. In reply, the DSP in a note stated that the incentive scheme evolved by the Administrative Staff College could not be introduced for the whole of the Works Department. The figures of reference manpower assessed by the Administrative Staff College became a subject of hot controversy while negotiating the scheme with the unions, as the existing manpower was more than the one suggested by Administrative Staff College. After protracted negotiations involving large number of meetings with the unions the scheme could be introduced in some departments. Even for this, adjustment had to be made in reference manpower in some cases. In the rest of the departments the attempt had to be abandoned. Even in departments where the scheme had been introduced there was a lot of dissatisfaction due to disparities in the incentive earnings in the various groups which was a feature of this scheme. The scheme was not simple enough for understandability due to the complexities involved and there was general dissatisfaction for which the scheme was ultimately replaced by new schemes evolved by the Plant in 1975 and 1978.

2.7 The Committee enquired about the total amount of incentive paid to the workers during last four years. In a note DSP furnished the data :

(Rs. in lakhs)

Year	Total Incentive Amount
1979-80	192·09
1980-81	146·83
1981-82	247·22
1982-83	257·31

2.8 When asked whether the new incentive scheme had any impact on production of the plant, the Managing Director, DSP in evidence stated :

"About the impact of this scheme, statistics show that we have been able to improve production. From 1975-76 there has been an increase in production, specially in the last two years, viz 1981-82 and 1982-83. During 1979-80 and 1980-81 we were badly affected due to power shortage. Perhaps we should have got more benefits, if the infra-structural deficiencies in the form of power and coal shortage were not there. In many cases we were not able to utilize things to the best of our ability, due to poor quality of raw materials."

B. *Labour Productivity*

2.9 The Mehtab Committee in its report submitted in June 1966 had observed that it should be possible to increase the productivity of works personnel from the then existing level of 55—70 ingot tonnes, per man year to about 125 ingot tonnes per man-year and above in each Steel Plant. The Management fixed the target of 90 tonnes per man-year for Durgapur Steel

Plant. The actual productivity attained during 1970-71 to 1982-83 however ranged from 33 to 49 tonnes. The Committee on Public Undertakings in its 1st and 41st Report (5th Lok Sabha) had adversely commented upon the low productivity in the Durgapur Steel Plant. The Committee enquired as to how would the Management explain the persistent low level of productivity in the plant in spite of assurance to the Committee in June, 1972 that the level of productivity was expected to go up with higher production and the new production incentive schemes were also designed to motivate labour. The Managing Director, DSP in evidence stated :

> "Production improved marginally between 1972 and 1975, and then there had been increase in production in 1976-77 and 1977-78 when we reached about 49; but this productivity is in the ingot steel plus some percentage of pig iron divided by the total number of men even though they are not working in the melting shop. In 1977-78 when we did not have any internal or external constraints and when everything was done to the best of our ability, we could reach nearly 1.091 million tonnes of steel. Then the steel production came down. A conscious decision had to be taken in 1979-80 and 1980-81 to bring down the production in Steel Melting Shop, so that the ingot stock did not increase. Again, we have started increasing our production from 1981-82. In 1982-83 it was still more. We have then been able to achieve 0.95 million tonnes. We have been able to decrease our total strength, compared to last year, by about 249. It is a question of production i.e. how much we can get. We have been able to contain the number of men. We are trying to increase production. Higher productivity was considered, taking 1.6 million tonnes as the likely production. We have got men for the units for 1.6 million tonnes; but we are producing less than that, because of deficiencies in furnace capacity and other things."

2.10 Asked as to how the productivity of DSP compared with the other steel plants in the country and abroad, the Secretary, Department of Steel stated in evidence :—

> "As regards productivity in terms of ingot steel per man year, the 1982-83 figures are : Durgapur—39; Bhilai—71; Rourkela—44; Bokaro—72; IISCO—34; TISCO—64. Similar figures in respect of other countries are : Japan—270; United States—234; Federal Republic of Germany—204; Italy—264; France—194; Britain—183 and Brazil—105 (1980)".

2.11 The Committee enquired as to how did the cost of labour per tonne of steel ingots in Durgapur compare with other steel plants. In reply, the Secretary, Department of Steel stated in evidence :

> "The figures are : Durgapur—588.83; Bhilai—322.43; Rourkela—524.08; Bokaro—290.32; TISCO—299.00 and IISCO—561.61 the figures that I have given relate to direct and indirect labour in operation, maintenance, township etc. These figures exclude labour engaged in capital construction."

2.12 In view of very low productivity in the plant, the Committee wanted to know whether there were any measures under contemplation to rationalise the deployment of manpower within the plant and to increase their productivity. In reply, the witness stated that there had been, a recent

agreement with all the trade unions. Chapter 8 dealt specifically with productivity and industrial peace. It had some very important clauses. Both the sides recognised that the future prosperity and efficiency of steel industry rested heavily on the ability of the parties to work in cooperation to achieve higher productivity.

2.13 When pointed out that machinery in TISCO Plant and Durgapur Steel Plant were similar but there was better productivity in the former plant, the witness explained :—

> "There are differences. Somewhere we have open-hearth furnaces; somewhere we have basic oxygen furnace; somewhere we have the blending. There are differences, and important differences. But I would again say that these differences will not explain the full story, they will explain only a part of the story. The rest, to a very great extent, will depend on work practices, and we do know that in certain shops, even in the same steel plant, the work practices leave a lot of room for improvement. The Wheel and Axle Plant has self-imposed quota. With that sort of work practices, we are not going to get productivity, even with the derated capacity. These aspects have to be gone into thoroughly. I am very happy that the agreement with the union has recognised that one of the serious points which have to be pursued is how to improve productivity."

2.14 The Committee find that the plant has continued to suffer from the problem of over-staffing and lower productivity. The present strength of Works Department at 24,846 is much higher than the strength of 19,614 fixed after detailed studies by the Administrative Staff College, Hyderabad in December, 1972. The Committee on Public Undertakings in their First Report (1971-72) had suggested that the Government/Company should take the opportunity offered by the expansion scheme of the steel plants and Bokaro Project to gainfully employ the surplus staff as early as practicable. In fact, the number of persons has gone up both in the case of works as well as general administration and township even as compared to the actual men in position in 1971-72, the total strength as on 31-3-1983 being 32,416 as against 29,285 at the end of 1971-72. The reasons advanced for increase in manpower strength like installation of balancing facilities and departmentalisation of certain jobs which were previously done by contractors are justified only to a limited extent. It is regretable that no effective steps have been taken to reduce the manpower.

2.15 The inevitable casualty of over-staffing is the productivity of the organisation. The labour productivity in Durgapur Steel Plant was the lowest being only 39 tonnes of steel ingots per man-year as compared to the 44 in Rourkela, 71 in Bhilai and 72 in Bokaro, not to speak of world standards where the productivity was several times higher. This is in spite of the fact that the plant has introduced productivity linked incentive scheme and an amount of Rs. 257.31 lakhs was paid as incentive in 1982-83. The problem becomes all the more serious when it is taken into account that the Mehtab Committee in 1966 considered it possible to increase the productivity of works personnel to about 125 tonnes ingot per man year in each steel plant and the management itself fixed the target of 90 tonnes per man-year for Durgapur Steel Plant. The cost of labour per tonne of steel in Durgapur Steel Plant was the highest as compared to the other steel plants and was about double of that in Bokaro Steel Plant. As stated by the Secretary of the Ministry in his evidence before the Com-

mittee, the labour productivity depended to an extent upon the type of equipment in each plant but the Committee feel that it depended to a very great extent on the work practices which left a lot of room for improvement in Durgapur Steel Plant. The Committee have been informed that the recent agreement by the management with all the trade unions provides that both the sides recognise that future prosperity and efficiency of steel industry rests heavily on the ability of the parties to work in cooperation to achieve higher productivity. The Committee welcome it and hope that sincere efforts would be made both by the management and labour to improve the work culture and to achieve higher productivity with a view to reducing the cost of production and the heavy losses being suffered by the plant.

CHAPTER III

MATERIALS MANAGEMENT

A. Inventory Control

3.1 As on 31st March, 1983, the value of total inventories of raw materials, stores and spares (excluding in transit) finished, semi-finished products and other miscellaneous stores was Rs. 225.67 crores. The plant was carrying heavy stock particularly of finished and semi-finished goods amounting to Rs. 126.20 crores. The stock of finished and semi-finished goods had gone up from 3.18 months sales in 1978-79 to 6.25 months sales in 1982-83.

3.2 The Committee desired to know the reasons for heavy stocks and steps taken to reduce them. DSP in a note stated that there had been substantial increase in the total steel output in India amounting to almost a million tonne in 1981-82 as compared to 1980-81. The increase was still higher in 1982-83. This substantial increase in the indigenous production combined with imports which came during 1981-82 and 1982-83 had resulted in easy availability of steel in the country. At the same time, many of the priority sectors had not been able to lift materials for which they had indented or projected their requirements due to funds constraints. In short, the increase in demand had fallen substantially short of the increase in the availability of steel. As a result, there had been stock accumulation in the stockyards and the steel plants. As a result of the changed market situation, intensive customers contacts, change in the product-mix and various other measures in marketing had been taken including drastic cuts in the imports to meet this situation. These had resulted in depletion in the stock level in all the units of Steel Authority of India Limited including Durgapur Steel Plant during the first quarter of current year (1983-84). Stock of saleable steel in DSP in works and stockyards had gone down from 2,90,420 tonnes to 2,24,250 tonnes.

3.3 On account of heavy stock, the Plant had to bear heavy interest charges. For instance, in 1982-83, one of the reasons for heavy losses was increased interest charges amounting to Rs. 22.51 crores as compared to 1980-81 which was explained as due to higher overdraft utilisation by SAIL on account of the accumulation of the stocks of saleable steel and the repayment of government loans to the extent of Rs. 130 crores without corresponding generation of the internal resources.

3.4 According to Annual Report of the Ministry of Commerce (1982-83) the imports of iron and steel went up to 30.08 lakh tonnes valued at Rs. 1136.38 crores during 1981-82, registering increase by 47.5% in quantity and 33.3% in value over 1980-81. During the first half of 1982-83, the imports of iron and steel amounted to 13.2 lakh tonnes valued at Rs. 531.01 crores, showing an increase of 6.4% in quantity and of 14.6% in value over the imports in the corresponding period of the previous year. The sizeable imports were stated to have been needed to meet the growing industrial requirements of economy.

3.5 In reply to a question in Lok Sabha, it has been stated that the stock of imported steel held by SAIL was 102,600 tonnes on 1 April, 1983 valued at approximately Rs. 46.2 crores. This had, however, came down to 53,800 tonnes on 1 March, 1984 valued at approximately Rs. 24.2 crores The Committee enquired as to how would the Ministry explain the phenomenon of heavy stocks with the Steel Plants and huge imports at the same time. In reply, the Secretary, Department of Steel stated in evidence :—

> "The reasons for this increase in inventory are well known. Imports were made on the basis of demand indicated by major users. Unfortunately this demand did not materialise and this did lead to stock accumulation. We have now adopted a new strategy, and the strategy is that the plants must manufacture what will sell and imposing stricter import control; there should be no question of having guess estimates; the demand will have to be confirmed before any manufacture or import takes place based on letters of credit; a very rapid and determined liquidation of accumulated stocks which include arrangements with converters to process semis into finished products and also much more active role in trying to find remunerative export markets. This has already had some impact. On 1st April, 1983, the stock of Durgapur Steel products was 0.290 million tonnes and on 1st August this declined to 0.21 million. The target is not more than 0.165 million (by the end of the year)."

3.6 Asked whether there was any mechanism to continuously study the market position and demand of various categories of steel in the country, the Department of Steel in a note furnished after evidence have stated that every year, the Joint Plant Committee carries out analysis for assessing the demand of various categories of steel in the country and their likely availability. Keeping in view this assessed demand and availability, action is taken to import canalised items of steel to cover the estimated shortfall. Imports are restricted to those qualities and sizes which are not produced indigenously in adequate quantities. Items of steel which are not canalised are imported by the actual users directly against the import licences issued to them or under OGL. The product range of the Durgapur Steel Plant includes pig iron, semis, skelp, structurals, wheels and axles, sleepers and fish plates. Of these, pig iron, semis, skelp and structurals are canalised for import through Steel Authority of India Limited. Other items specially wheels and axles, sleepers and fish plates are directly imported by the users namely the Railways, as necessary.

3.7 When enquired about the reasons for non-materialisation of anticipated demand for steel, the Secretary, Department of Steel explaining the difficulties in this regard, stated in evidence :—

> "The difficulty arises really because at the start of the year there is a certain assessment, but then recession takes place and a variety of other economic factors come into play. Therefore, this has to be a continuous exercise because there are many things which may happen. There is a backlog somewhere and something is delayed therefore, the demand does not come off. The State Electricity Boards are very large consumers of steel but their actual consumption becomes much lower than what they themselves had estimated at the earlier part. Import licences were granted last year or the year before, but they have the validity period. This also requires to be monitored. The

> Statistics of imports come with tremendous time-lag, and we have to make arrangements, and we are making arrangements to get estimates irrespective of when the official statistics come. We can know from port clearing agent what is happening, how much is actually coming. This is being tightened so that we know what changes in demand might take place and to that extent we must change our marketing as well as production strategy."

3.8 To the Committee's observation that this meant there was no co-ordination between steel production and import, the witness stated : "There is coordination, but the fact is that it requires a lot more improvement."

3.9 In this connection, the Committee enquired whether there was any need for further strengthening the marketing organisation. The Secretary, Department of Steel in evidence submitted :

> "It will have to be. There have to be changes in the organisation. When I say changes, we are not thinking of changing headquarters and so on because there seems to have been such a misapprehension in certain quarters. There is no such question. Marketing has to be very much more dynamic, much closer to the customers, and we have to know accurately what is actually happening in the market, what changes are taking place, what stocks are being held by different people."

3.10 The Committee observed that there were stocks of certain type of steel which were not required in the market and at the same time there was shortage of certain types of steel which forced certain units to close down. Thereupon, the Secretary of the Ministry stated :

> "We have a shortage in LPG steel sheets. There domestic production has picked up. We are trying to see what are the things we can manufacture. Extra deep drawing steel for automobiles we are not manufacturing at all. It was all imported. We have got the technology. Now, we will be able to produce extra deep drawing steel for automobile which otherwise would have been imported and was being imported all these years."

B. Stores and Spares

3.11 The total value of stores and spares in DSP as on 31-3-83 amounted to Rs. 88.27 crores which was equivalent to 20.17 months consumption. The value of non-moving items (not moved for two years and more) as at the end of 1981-82 was Rs. 29.89 crores. The Committee enquired about their non-utilisation/disposal. DSP in a note furnished after evidence stated that they had a stock of non-moving items valuing Rs. 29.89 crores as on 31-3-1982 out of which there were insurance spares worth of Rs. 14.20 crores which could be required by the Plant at any time of emergency. The remaining non-moving spares valued Rs. 15.69 crores consisted of high and low value stocks. The plant would consume high value items worth Rs. 5.13 crores. For the stores of lower valued items worth Rs. 10.49 crores, similar action was being taken to notify the consuming departments if that could be used by them and out of this some had been scrutinised and stores worth Rs. 59.31 lakhs had been identified as disposable and balance were still under scrutiny.

3.12 Asked about the position of the non-moving items (not moved for two years and more) at the end of 1982-83, the DSP in a note stated that it was valued at Rs. 31.14 crores.

C. Physical Verification

3.13 According to Audit, physical verification of raw materials, stores and spares and finished and semi-finished products is conducted by a separate unit placed under the control of Financial Adviser and Chief Accounts Officer of the Steel Plant. The stores and spares are verified physically so as to cover all the items once every financial year; the physical verification of raw materials and finished and semi-finished products is conducted quarterly. The results of physical verification conducted during 1978-79 to 1982-83 were stated to be as follows :—

(Rs. in lakhs)

Year	Stores & Spares		Raw Materials		Abnormal shortage	Finished and Semi-finished products	
	Excess	Shortage	Excess	Normal shortage		Excess	Shortage
1978-79	7·72	12·79	45·61	33·73	12·64	375·69	592·43
1979-80	4·13	6·01	45·74	97·06	38·60	353·55	616·96
1980-81	16·13	4·58	69·92	162·82	106·49	461·35	509·88
1981 82	15·87	15·30	227·53	138·78	53·36	571·45	675·26
1982 83 .	10·45	6·98	73·67	170·11	0·97	478.64	867.16

3.14 According to Audit, shortages in raw materials to the extent indicated below are treated by the Management as normal loss and charged to consumption without further investigation :—

	Percentage of total receipt
Coal	5
Iron Ore	4
Othr raw materials	2

3.15 Shortages in excess of these norms are also charged to consumption during the year but are investigated later on.

3.16 In this connection, the Committee desired to know the reasons for the abnormal shortage of raw materials to the extent of Rs. 106.49 lakhs in 1980-81 in addition to shortages of the value of Rs. 162.82 lakhs which were considered normal by the plant management and whether the reasons for abnormal shortages had been investigated. The DSP in a note have stated that the abnormal shortages occurred in the following areas (i)

washed Coal (ii) Iron Ore (BF Grade) and (iii) Dolochips. This abnormal shortages of Rs. 106.49 lakhs for 1980-81, have been investigated by a Standing Committee appointed by the Managing Director and the detailed causes of shortages as ascertained by the Committee with respect to the above items were submitted to the Board of Directors. These are as under :—

Sl. No.	Item	Causes for a shortages is ascertained by the Committee
1.	Washed Coal	(a) The ratio of washed coal in the stock has been arrived at on the basis of blended coal which is approximate. (b) Consumption accounting is also on estimated basis, (c) The weighment of incoming wagons is on test-checks basis. However, there is also a possibility of short receipt of materials.
2	Iron Ore (BF Grade) .	(a) The receipt is accounted for mostly on R/R weight basis, excepting (i) the quantity received from Bolani Ores (captive mines) where materials are sent based on fed weight system loaded upto the carrying capacity of the wagons and (ii) where wagons are not weighed at the loading points and one-third of the incoming wagons have been checked, weighed at DSP, There is limitation in weighing 100% wagons in the Plant. Because of the above method, the possibility of some amount of underloading cannot be ruled out. (b) Error in assessment of consumption. The consumption is computed from the scale car weighments where there are possiblities of marginal errors. (c) Possibility of some error in stock verification is also not ruled out which is done in volumetric basis and ground contour may be a possible cause of error.
3.	Dolochips .	(i) The receipt is accounted on the basis of R/R weight. This material is transhipped en-route from MG lines to BG lines and chances of en-route losses are there. The wagons received are test-weighed in the plant and in case of significant difference the suppliers as well as Railways are intimated. (ii) The consumption is based on weighment by pandan feeder and weigh-feeder installed in No. 1 & No. 2 Kilns respectively. The possibility of some marginal error depending on calibration exists. (iii) The material in stock is subjected to weathering effect reducing some portion to powdery form which is practically lost by winds and rains.

3.17 In regard to coal wagons received by DSP at site, the Committee desired to know the percentage of coal wagons weighed during the last five years, the extent of shortages/excesses noted in quantity of coal received, the percentage of shortages/excesses to the quantity received (in wagons weighed) and action taken thereon. In a note furnished after evidence, the DSP stated that the percentage of coal wagons weighed during the last five years were as under :—

Year	Coal wagon weighed as % of wagon received
1978-79	NIL
1979-80	3·95
1980-81	7·59
1981-82	12·20
1982-83	11·53

The percentage of shortages to the quantity received (in wagons weighed) were as under :—

Year	Raw Coal	Purchased Washed Coal
1979-80	10·34	4·21
1980-81	8·38	3·38
1981-82	7·71	4·21
1982-83	10·92	3·91
	7·25 (Imported Coal)	

3.18 In view of the fact that the weighment of incoming wagons was only done on test check basis, the Committee enquired as to how did they keep the record of number of wagons and the quantity received, the Managing Director, DSP stated in evidence :—

> "There are two things. One is that weighing of coal is done before charging. It is true that we have weighing machines. But this charging machine goes off very often. So the break-down occurs more. Now, we are trying to come out of this difficulty. We have already taken action. One of our sister plants has done this. Very shortly this problem will be completely eliminated when we will be in a position to run all the weighing machines. But at that time we cannot keep our oven empty. The second point is that we weigh coal that we get from the Railways. We do not have a in-motion weighbridge which can take care of quick weighing of all the wagons. This has now been taken in hand. Already a decision has been taken at the corporate level and that all the plants should have that facility. Today we check it on a percentage basis. We check up a few wagons. We check up with R/R that we get from the Railways. So, there might be sometimes some deviation. The larger problem is in keeping or recording the right amount of coal that is being supplied and received

.....Coal is weighed at loading point.....But when we get at our end, we do not have an exchange yard separately, so that we can keep the wagons waiting and then weigh. It is true that we have not been able to weigh all the wagons or the required number of wagons. But there are problems sometimes due to more bunching of rakes or the quantity is less, or may be we are not able to spare the locomotives. Lot of shunting works have to be done. This problem can be taken care of it as it crosses over the weighing bridge, it is weighed automatically. We are taking steps for this."

3.19 The Committee were also informed that the weigh-bridges provided were of mechanical type for which wagons were to be stabled singly on the platform for weighment. Action had been taken to replace two of the existing weigh-bridges by electronic 'in motion' weighment facilities. Moreover, contract with Coal India Ltd. stipulated that payment was to be made as per R/R weight. For wagon weighed at loading point R/R was as per actual weighment. For wagon not weighed at loading point R/R was as per charge weight (carrying capacity+2 tonnes). However, for such deductions were made from CIL's bills on the basis of joint sample measurement of wagons by representatives of Central Coal Supply Organisation, SAIL, Dhanbad and Coal India Ltd. at the loading points.

3.20 In regard to shortage of raw coal in wagons, the Department of Steel in a note stated that it had been reported that wagons loaded with raw coal coming from the Dhanbad area were found to contain less material at the destination—the Durgapur Steel Plant. It had been reported that such shortages were due to pilferage of material on its way to the destination. This matter had been taken up with the Railway authorities and with Coal India Ltd.

3.21 The Committee also enquired about the reasons for huge shortages of finished and semi-finished products to the extent of Rs. 6.17 crores, Rs. 5.10 crores and Rs. 6.75 crores, during the years 1979-80, 1980-81 and 1981-82 respectively. In reply, the DSP, in a note have stated that in the area of finished and semi-finished products in an integrated Steel Plant, some excesses and shortages are inbuilt in the process for the reasons as explained below :—

(a) Production is estimated on the basis of sectional weight or some suitable formulae as weighment in an operating condition is hardly possible.

(b) Despatches are accounted for on the basis of actual weight with regard to certain products and on the basis of sectional weight in case of other products.

(c) Stock verification is again on estimated basis (Section weight or volumetric measurement).

3.22 When asked whether the reasons for huge shortages had been investigated, DSP stated that the Standing Committee constituted by the Managing Director to investigate into causes of the shortages had concluded as follows :—

(a) Estimation in area of production as well as stock verification.

(b) Mix-up of the products particularly in coke and coke fractions.

(c) While despatching, the wagons were not tare-weighed. It was possible that some of these wagons had a weight less than the declared tare weight printed on the wagon, resulting in despatch of quantity in excess to the quantity booked leading to shortages.

3.23 As regards the net shortage during 1982-83, it was stated to be Rs. 3.88 crores and that was still to be investigated.

3.24 On the question of weighment of tare weight of wagons, the Committee enquired whether the present practice was satisfactory and what were the difficulties in weighing the wagons especially those used for despatching of the finished goods. The Secretary, Department of Steel in evidence stated :—

> "So far as despatch of finished and semi-finished products is concerned, a proposal has already been made to the Railways for the measurement of the entire weight of wagons. This is being pursued .....the key to this is weighment of the empty wagons before it is filled—which is called the tare weight.....The point is that this is not possible unless you weigh the empty wagon the normal practics in the railways is that they have a tare weight, but this not checked. What we have proposed to the Railway is that we are prepared to check the tare weight of every empty wagon on our own machines and we want their certificates after that. And also for despatch on line weighment is being done and necessary weighbridges are being installed."

3.25 The Committee find that in spite of very low capacity utilisation, the plant was carrying large inventories which amounted to Rs. 225.67 crores at the end of the year 1982-83. There was heavy accumulation, particularly, of finished and semi-finished goods which were of the order of Rs. 126.20 crores and were equivalent to more than six months sale in 1982-83. On the other hand, sizeable imports of iron and steel products had taken place during 1981-82 and 1982-83 to meet the projected demand which did not materialise and SAIL was carrying stock of imported steel valued at about Rs. 46.2 crores as on 1-4-83. The Committee regret to note that there have been efficiencies in planning of imports and domestic production. The Secretary of the Ministry was frank enough to admit that the marketing organisation of SAIL has to be more dynamic and much closer to the customers to assess correctly the changes in demand pattern and to change the marketing and production strategy accordingly. The existing co-ordination between steel production and imports also needed a lot of improvement. The Committee hope that at least in future there would be better planning of imports and domestic production of steel keeping in view not only the total confirmed demand but the pattern of consumption also.

3.26 The Committee have been informed that there has now been a reduction in the existing stocks which have gone down from 2.90 lakhs tonnes on 1st April to 2.10 lakh tonnes on 1st August, 1983. This is a step in the right direction. They would emphasise the need for constant review of the stock position to reduce the stocks to the minimum to save the unnecessary locking up of funds and the heavy inventory carrying costs.

3.27 Not only was the plant having huge stock of finished products but that of stores and spares also. The total value of stores and spares

was equivalent to about 20 months consumption which needs to be brought down. Stores worth about Rs. 31.14 crores had not moved for more than two years. The Committee desire that effective steps be taken to dispose of surplus items of stores expeditiously.

3.28 The physical verification of raw materials and finished stocks has revealed heavy shortages. In the case of raw materials there were abnormal shortages of the order of Rs. 2.12 crores during the last 5 years. This was in addition to the shortages of the value of Rs. 6.02 crores during the last 5 years which were considered normal by the plant management. Test check of certain wagons of raw coal disclosed shortages ranging from 8% to 11%. Admittedly there have been pilferages of materials in transit. However, as the weighment of incoming wagons was on test check basis and accountal thereof was made on the basis of weight indicated in the Railway receipt, it was not possible to ascertain the transit losses and to lodge the claims on the Railways.

3.29 Not only there were shortages in raw materials, heavy net shortages to the extent of Rs. 10.21 crores were also found in the case of finished and semi-finished goods during the last 5 years. The shortages in finished stocks had also arisen *inter alia* on account of the fact that while despatching goods the wagons were not tare-weighed. The possibility of some of these wagons having weight lesser than the declared tare weight and consequential despatch of goods in excess of the quantity booked could not be ruled out. The Committee take a serious view of heavy shortages noticed both in the case of raw materials as well as finished and semi-finished stocks resulting in on an average a loss of Rs. 2.5 crores per annum besides the normal handling losses of Rs. 1.2 crores in raw materials. The desire that the shortage be investigated.

3.30 The Committee are dismayed at the sorry state of affairs in Durgapur Steel Plant in the matter of physical verification of stocks of raw materials, spares, semi-finished and finished goods. The verification is based on rough estimation and approximation. There is no fool-proof system of weighment of wagons, raw materials and finished items. The whole system leaves room for loopholes and pilferages. Various excuses for shortages are given. For example, it is stated that charging machines go off very often, resulting in breakdowns, there are errors in assessment of consumption and even in stock verification, there are only test checks of wagons, tare weight of wagons is not checked, and so on. The Committee recommend that the Government give serious consideration to this problem and devise ways and means to develop fool-proof system of weighment of raw materials and finished goods so that losses resulting from inaccurate weighment and thereby wrong costing are eliminated.

CHAPTER IV

RAIL TRANSPORT

4.1 The table below indicates the number of wagons received from the Railways, the number utilised, the number returned without loading and the demurrage paid on account of detention beyond free time during 1978-79 to 1982-83 :

(Figures in terms of four wheelers)

Years	No. of wagons received (both loaded and empty)	Wagons despatched with finished products	Wagons returned without loading	Demurrage paid for wagons returned without loading (Rs. in lakhs)	Total demurrage paid (Rs. in lakhs)
	(Number in lakhs)				
1978-79	2·48	0·48	2·04	148·81	202·80
1979-80	2·43	0·38	2·06	192·74	249·79
1980-81	2·19	0·39	1·80	184·11	251·27
1981-82	2·51	0·50	2·02	247·48	350·01
1982-83	2·48	0·42	2·06	285·57	382·78
Total				1058·71	1436·65

4.2 According to audit, a major portion of the demurrage paid was in respect of wagons returned without loading. The Committee desired to know the reasons for heavy demurrage of Rs. 10.59 crores paid during the years 1978-83 on wagons returned without loading. The DSP in a note furnished after evidence have stated that demurrage paid for wagons returned empty was due to excess time beyond free time required for emptying the loaded wagons. Wagons returned empty are broadly classified in the two categories :

(i) Loaded wagons received by the plant, which cannot be back-loaded because plant products cannot be loaded in such type of wagons, like CRT, KO, BOBS, BOBX.

(ii) Loaded wagons received by the plant which cannot be back-loaded because the number of loaded wagons received is far in excess of the empties required by the plant for despatch of its products. Wagons of this type are mostly BOX wagons.

4.3 Wagons like BFR, BRH, KC, which are received on requisition for loading are not returned empty except in case of defectives or receipt of wagons in excess of demand. In such cases demurrage is not paid. As regards demurrage rate, the DSP added that the demurrage paid over the years has gradually increased particularly because of the change in the

demurrage rate. Change in the demurrage rate over the years is as under :—

Demurrage rate, rate per equivalent four wheeler per day	With effect from
Rs. 16·00	Since 1964
Rs. 50·00	1-5-1973
Rs. 75·00	5-9-1979
Rs. 120·00	12-2-1981

4.4 According to DSP, it was due to increase in the demurrage rate from Rs. 75/- to Rs. 120/- that an extra demurrage of Rs. 136.1 and Rs. 148.8 lakhs in 1981-82 and 1982-83 respectively from the previous level had to be paid. Increase in the demurrage rate has accounted for an excess demurrage payment of 41.7%.

4.5 In this connection, the Committee desired to know as to what were the various operational factors attributable to delays in movement of wagons. In reply, the Department of Steel in a note have stated that the various operational factors that are attributed to the delays in movement of wagons are as under :

(i) The lay out does not permit free flow of traffic both for incoming and outgoing wagons. Unlike other steel plants, the entire traffic of DSP, ASP and Stockyards have to be interchanged in single Railway Exchange Yard and the entire transaction have to be done on two railway tracks, one for incoming trains and the other for outgoing trains. Absence of marshalling yard/sorting yard/stabling lines force many cross movement which results in detention of wagons.

(ii) In case of emptying wagons loaded with raw materials and other materials detention of wagons is caused because of—

(a) erratic receipt pattern of group-wise coal forcing holding up of wagons due to absence of storage facility. Receipt of coal in non-standard wagons needs manual unloading and consequently detention of non-standard wagons;

(b) Receipt of iron ore in BOBX from the South Eastern Railways for shortage of BOX wagons. Many BOBX wagons cannot be directly unloaded on Blast Furnace highline due to defective doors and they are required to be tippled at the tipplers, although tipplers are not designed to handle such wagons. This not only reduces the rate of unloading but also causes vibration on the tippling platform and spillage of material on the tippler beam. Moreover, these wagons cannot be placed on the tippler platform by beetle charger and need to be handled by loco. This requires removal of beetle charger and again placement of the same while tippling BOX wagons. This causes further waiting of the BOX wagons.

(c) BOBS and KO wagons are unloaded on highline. Since there is only one dead-end track on the high line, detention of these wagons is caused. The sundry raw materials

for Blast Furnace and Steel Melting Shop like Manganese Ore, high grade limestone, BHQ Bauxite ore, dolo chips, high grade iron ore etc. are required to be manually unloaded on the ground. Receipt of these materials in block rake cause detention of wagons.

(d) The existing siding capacity does not permit handling of rake of 75 tank wagons, which has been introduced by Railways in place of 55 to 60 tank wagons. Also the storage capacity provided is to suit only the present monthly consumption. So, handling of rake of 75 tank wagons therefore, causes detention. The problem gets accentuated due to defective valve fittings on Tank wagons.

(e) Detention is also caused due to bunching of wagons with same materials being received in bunched condition and also due to receipt of trains with mixed materials and different types of materials.

(f) Break down of the handling equipment (namely, tipplers and the conveyor series) of the plant causes detention of loaded wagons particularly BOX and KC wagons.

(g) Oversize foreign materials or even coal boulders received in wagons as also slushy ores and coal cause breakdowns of the tipplers and conveying system.

4.6 Besides operational factors, the other reasons for extra detention of wagons over the permissible detention time were stated to be as follows :—

"In the case of loading of wagons with plant's product, detention is mainly caused because of the following reasons :

(a) Incoming BFR rakes involved heavy sorting due to high percentage of defectives and less number of BFRs being complete with stanchion rods for loading section Mill products.

(b) Railways insist to send outgoing traffic in Block rakes. But the pattern of receipt of empty KC/BFR causes holding up of loaded part rake for two to three days. Moreover, the percentage of unfit KC wagons is as high as 35% causing sorting and shunting of wagons for selective loading.

(c) Railways have introduced a concept of loading BRH wagons only in Sherpa rake for single point of prescribed via since January 1982. All BRH wagons not being fit for loading all types of products, rake formation is to be completed from piecemeal supply of fit wagons. This causes detention of partly loaded rake. Also empties are not always allocated in Sherpa rakes but despatch is to be made in rakes only. This needs completion of rakes from piecemeal supply of BRH wagons, which causes detention."

4.7 The Committee desired to know the remedial measures taken to control operational factors responsible for delays in movement of wagons. The DSP in a note furnished after evidence stated that continuous efforts were being made to reduce detention of wagons. About 65% to 70% of the wagons handled by the Plant are BOX wagons. It had been possible

to reduce the average detention hours of these wagons in 1982-83 compared to the previous two years as could be seen from the table given below :—

Type of Wagon	Permissible detention time per wagon hrs.	Average Excess time taken per wagon hours		
	1980 81		1981-82	1982-83
BOX ES	27	33·4 (45982)	50·0 (54288)	20·7 (63314)
LD	51	93·2 (7836)	137·4 (9752)	79·5 (8369)

NOTE : (i) ES = Empties, LD = Loaded

(ii) Figures in the bracket are the No. of Wagons.

4.8 Inspite of the improvements which are stated to have taken place, the demurrage had to be paid for approximately 3 lakh days in terms of 4 wheelers in 1982-83.

4.9 It was further stated in the note of DSP that action was in progress for extension of the railways tracks as well as provision of an additional storage tank to accommodate handling of rake size of 75 tank wagons. During refurbishing/modernisation it had been envisaged to provide sorting yard/stabling lines for easing the constraints of traffic movement. To reduce the down time of tippling equipment scheduled preventive maintenance was being regularly carried out.

4.10 According to Audit Report, selective control was being adopted to reduce the detention time of wagons in the plant, as per the report of Industrial Engineering Study. Asked from when was the selective control adopted and with what results, the DSP in another note stated that the selective control for reducing detention of wagons was introduced in the year 1975. The control method had been useful for analysing and identifying the areas of detention as well as identifying the individual wagons detained beyond free time for the purpose of taking corrective action. The method had been applied mainly for BOX and four wheeler wagons which account for about 75% of the total demurrage paid. However, the full benefits could not be accrued because of the basic limitations for handling of wagons on account of various factors, mentioned earlier.

4.11 The Committee desired to know as to how did the demurrage charges paid by Durgapur Steel Plant compared with other Steel Plants. The Secretary, Department of Steel in evidence furnished the following data in this regard for the year 1982-83 :—

DSP	Rs. 3·83 crores
Bokaro	Rs. 2·67 crores
Bhilai	Rs. 3·97 crores
Rourkela	Rs. 0·80 crores.

4.12 In this connection, the Committee wanted to know the measures proposed to be taken to minimise demurrage charges which affects the profitability of the Plant. In reply, the Secretary, Department of Steel stated in evidence :—

> "Some action has been taken in regard to reducing the demurrage. One area here has been coal wagons containing a great deal of stone. This holds up discharge of wagons and also the conveyor belt breaks down. It has now been decided that at the coalmine itself our inspectors will work three shifts. Every wagon will be checked and wagons containing too much of stone will not be allowed to move into the Plant. Another point is wagons containing refractories. We are looking at the possibility of getting smalls, not rake-load, or of even moving the refractories by road in the quantities required because these are small quantities required from time to time. The third is, the type of railway lines we have, itself creates problems. In the Steel Plant we have got exchange yards which exchange traffic. We are doing two things in Durgapur. One is a wagon control system at a cost of about Rs. 30 lakhs. This will prevent hold-up of wagons within the plant. Then, rationalisation of internal yards at a cost of Rs. 4 crores. This also is designed to prevent hold-up of wagons and, therefore, avoiding incurring of demurrage."

4.13 In regard to stones coming in the coal which damages the equipments etc., the Committee enquired whether there was any penal clause in this regard in the contract with Coal India. The witness stated in evidence :—

> "The Chairman, Coal India as well as Secretary, Coal have agreed that this clause should be introduced into the contracts and these are right now being pursued. They have agreed that there should be a proper contractual clause in regard to quality and quantity of coal with both penalty and bonuses."

4.14 Subsequently, in a note, the Department of Steel enumerated the following steps which were being taken by them to reduce demurrage :

(1) The stabling and sorting facility inside the plant is inadequate to handle the larger rakes introduced by Railways. This problem has become more acute on account of mixed rakes received from the Railways which require sorting out at plant end. The Plant has taken up a project to augment the stabling and sorting yard to ensure speedy disposal of wagons.

(2) Eight high horse power locomotives have been procured and commissioned for handling the heavier block rakes of incoming material and outgoing materials. Three more high horse power locomotives are under procurement.

(3) Electronic on-line weigh bridges capable of weighing wagons while in motion, are being considered for installation under the refurbishing programme.

(4) The feasibility of making arrangement for receiving refractory materials by road in place of the existing practice of receipt by rail transport which gives rise to wagon detention, is being examined by the Plant.

(5) Continuous efforts are being made to obtain from the Railways appropriate wagons for piecemeal movement as per the plant's requirement.

4.15 When asked whether the matter of allotment/movement of wagons was ever discussed with the Railways, the Department of Steel stated in a note that for wagon allotment/movement there had been a system under which these aspects were periodically reviewed and monitored. In the case of coal, a monthly meeting was held at the level of Coal Controller with all the other concerned agencies in which the receipt pattern and allotment of wagon was decided on a daily basis. As regards other raw materials, CBT (Central Board of Transport) meeting were taken every quarter at the level of the Iron and Steel Controller in which the planning of the whole quarter with reference to the tonnage of the raw materials vis-a-vis the wagon allotment was done. The requirement of empty wagons for despatch of finished products from the plant was also finalised with Chief Freight Traffic Superintendent (I & S), South Eastern Railway in a monthly meeting which was held on 7th/8th of every month. At the plant level a monthly meeting on intrastructural facilities was taken by the Managing Director alongwith all concerned agencies.

4.16 The Committee take a serious view of the heavy demurrage charges paid by the Plant. The total amount paid as demurrage charges during the last 5 years amounted to Rs. 14.37 crores, that is on an average about Rs. 3 crores per annum on account of detention of wagons beyond free time allowed by the Railways. Such long detention of wagons resulting in heavy demurrages charges can by no means be considered as reasonable. A major factor attributed to this has been operational delays like-break-down of the handling equipment, deficiencies in lay-out of the exchange yard and insufficient storage-capacity. Keeping in view the heavy damurrage charges paid year after year it was expected of the management to take effective steps to remove the various operational deficiencies. The Committee would like to know why this was not done all these years. The Committee have been informed that the Department of Steel and Management of the Plant now propose to take up some schemes and projects of expansion, modernisation, and installation of certain devices in the yards with a view to achieve quicker movement of wagons and reduce demurrages. They urge the authorities concerned and especially the Department of Steel not only to finalse these schemes and plans without delay but also see that they are implemented at the earliest.

4.17 The Committee would also like to stress the need for stric watch over the preventive maintenance of the handling equipment as per schedule to minimise their break-down.

4.18 Bunching of wagons and receipt of defective wagons are also stated to have contributed to delays in loading and unloading of wagons. The matter should be examined in detail with the Railways to ensure more regulated flow of wagons to and from Durgapur Steel Plant. Other suitable measures should also be evolved to minimise the demurrage charges on this account.

CHAPTER V

FINANCIAL MANAGEMENT

A. *Costing System and analysis of cost*

5.1 The operations in different units of the Durgapur Steel Plant widely differ from one another. As a result, process costing is followed in the case of manufacture of iron and steel and by-product costing in by-product plants.

5.2 A comparison of actual cost with the estimated cost every year indicated that in a number of cases, actual cost was higher than the estimated cost. This was attributed by the Management to shortfall in production and increase in the cost of raw material and services.

Cost Vs. Selling Price

5.3 The Government had decided to discontinue the regime of administered prices for iron and steel items with effect from 1/2 April, 82. The Government had also decided that the prices of Pig Iron and all categories of steel including bars, rods and semis, the prices of which were allowed to be fixed by main producers in February, 1981, would be determined by Joint Plan Committee. Iron & Steel Controller as the Chairman of Joint Plant Committee monitored the pricing structure and the Government kept a wachful eye on the prices that were fixed by the Joint Plant Committee.

5.4 The Committee observed from the details in regard to the average net ex-works selling prices per tonne of finished products as a percentage to the cost of production of the relevant years that the selling prices were less than the cost of production in respect of all the products during 1970-71 to 1982-83 except in regard to sleeper, joists, angles and rounds in 1976-77, angles and rounds in 1978-79 and slab (blooming mill), billet and rounds in 1981-82. The Committee enquired about the steps taken or were proposed to be taken by the management to control the actual cost of production of various products. In reply, DSP in a note furnished after evidence have stated that the cost of production depends upon the—

(a) level of production;

(b) conformation to the techno-economic parameters.

5.5 The constraints in achieving the techno-economic parameters mostly arise on account of gradual deterioration in the quality of the input materials particularly coal, iron ore etc. The deterioration in the quality of coal has, to a certain extent, been recently taken care of by intensification of activities in the Washeries and the ash drop has been brought to the level of around 6% from a level of 3% to 4%. Coke rate, one of the most important techno-economic parameters has been brought down from the level of 1017 kgs. during '80-81 to 957 kgs. in '81-82 and 901 kgs. in '82-83. The other major factor affecting the cost of production is the use of costly furnace oil in the Steel Melting Shop due to non-availability of gas because of poor health of the batteries and lower Volatile Matter in the coal charged. The rebuilding of the coke oven batteries are being taken up

in a planned manner and this together with the facilities provided in the refurbishing scheme in the coke ovens is likely to improve the gas balance. This should reduce the consumption of furnace oil in Steel Melting Shop. The general health of the plant and equipment is also likely to improve thereby reducing the operational cost.

5.6 Another important factor contributing to increased cost of production in Durgapur Steel Plant is the high consumption of energy.

5.7 In reply to a question, the Secretary of the Ministry stated in evidence :

> "We do find that these open hearths are very expensive. Because of very high energy cost, the cost of operating open hearth furnaces is very high."

5.8 Asked about the energy consumption of Durgapur Steel Plant as compared to other steel plants, the Secretary, Department of Steel in evidence stated :—

> "The specific energy consumption per tonne of ingot steel in Bhilai is 6.7 to 7.07 million kilo-calories per tonne. In Durgapur it goes from 8.4 to as high as 9.9. In Bokaro it varies from 6.4 to 7.3. Regarding Energy Consumption, a study has been done by our R&D Department to see how energy consumption can be reduced considerably, in comparison with what is done in some other parts of the world."

5.9 DSP have further stated in their note that certain increases in the cost of production on account of the increases in the input prices of materials/services, etc. are unavoidable. Such increases in the cost should in the normal course be compensated by the increases in the steel prices. In the past prices for certain items were kept specifically low on national considerations by the Government. Even in situations where the price increases have been allowed, this had been from a prospective date and the steel plants were not compensated for the escalations for the earlier period. While the Government had decided from 1-4-82 to delegate authority for price fixation to the Joint Plant Committee, headed by Iron & Steel Controller, but this had happened at the time when market was sluggish. Therefore, it has not been possible to fully compensate the increase in cost of inputs by adequate increase in the prices of steel.

B. *Profitability Analysis*

5.10 The Plant has incurred losses since inception except in 1963-64, 1965-66, 1978-79 and 1981-82. The cumulative loss upto the end of the year 1982 amounted to Rs. 308.22 crores. These represented about 71 per cent of the total investment of Rs. 434.72 crores. The Plant incurred the highest ever loss of Rs. 44.23 crores in 1982-83.

5.11 The Committee enquired about the reasons for heavy losses by the Plant inspite of several increases in prices of steel products the D.S.P. explained in a note that the average increase in cost in 1982-83 over 1981-

82 and the net realisation due to increase in prices of steel products is indicated below which will give an idea of additional cost and realisation :

	Average incerase in 1982-83 and 1981-82
	(%)
(i) Net realisation on Steel products	6
(ii) Raw Material cost	24
(iii) Manpower cost	15
(iv) Cost of Electrical Power	16
(v) Cost of external fuel/furnace oil	9

5.12 In absolute amount cost increases to the extent of Rs. 24.6 crores during 1982-83 are uncompensated by the increase in the selling prices. The increase in the cost due to escalation in prices specially of raw materials, power and fuel and due to use of imported coal was Rs. 47.2 crores. While additional realisation on account of the price increases on 2-4-1982 and 23-10-1982 was Rs. 22.6 crores. Further, there was increase in the interest on borrowed funds by Rs. 20.4 crores due to higher overdraft utilisation by SAIL on account of the accumulation of the stocks of saleable steel for SAIL as a whole and the repayment of Government loans to the extent of Rs. 130 crores without corresponding generation of the internal resources.

5.13 In this connection, the Chairman, SAIL, also stated in evidence that, "there is an intrinsic shortcoming as far as Durgapur's product mix is concerned. Even in the project report, product-mix is envisaged to be one-third semis. We could perhaps increase the margin by providing additional finishing mills for rolling the semis. One of the areas where there has been some accumulation has been semis." In this connection, the Committee desired to know the Ministry's assessment in this regard and the reasons for not taking timely measures for product diversification to make the unit economically viable. In reply, the Secretary, Department of Steel in evidence stated :

> "This is part of the analysis which is being carried out right now by the Task Force."

5.14 The Committee enquired as to what were the profitability projections made at the time of setting up of the plant and its subsequent expansion. The Chairman, SAIL in evidence stated :—

> "The detailed project report for both 1 MT and 1.6 MT expansion did not contain any chapter on profitability projection. However, the profitability analysis of both the stages was made by the Central Engineering and Design Bureau (now MECON) which was part of Hindustan Steel and was considered by the Board of Directors in their meeting on 24th June, 1963 in which the revised project estimates for 1.6 MT expansion of Durgapur Steel Plant were approved. The projections considered at the time before expansion and after expansion are in crores of rupees. Surplus before depreciation and interest 11.88 before expansion and 19.88 after expansion; depreciation—9.95 before expansion and 13.45 after expansion, interest—

5.53 before expansion and 7.43 after expansion; net loss—3.6 before expansion and Rs. 1 crore after expansion; return on capital—nil (both before expansion as well as after expansion). This was worked out at 100% capacity utilisation of 1.6 M Tplant of Durgapur Steel and fulfilling all projected technological performance norms."

5.15 In this connection, the Committee enquired as to whether the setting up of the original plant and its subsequent expansion was sanctioned by Government without any economic viability analysis and what was the position in this regard for Bhilai and Rourkela Steel Plants. The Department of Steel in a note stated that the setting up of three steel plants of 1 million tonnes annual ingot capacity each in the public sector was envisaged in the Second Five Year Plan (1956-61) in conformity with the priority given in the Plan for rapid industrialisation with particular emphasis on the development of basic and heavy industries. A detailed Project Report for the Durgapur Steel Plant was prepared by the British Steel Mission in 1955. The DPR for setting up of the Rourkela Steel Plant was submitted by Indian-Gemeischaft of West Germany in October/November, 1955 and in respect of Bhilai Steel Plant the DPR was prepared by Soviet organisations in December, 1955 in pursuance of an agreement between the Government of USSR and Government of India. None of these DRPs made any detailed study of profitability of the plants. The Project Reports for expansion of Durgapur Steel Plant to 1.6 MT capacity Rourkela Steel Plant to 1.8 MT capacity and Bhilai Steel Plant to 2.5 MT capacity were prepared by the erstwhile Central Engineering & Design Bureau (CEDB) under the HSL. In these reports while capital cost estimates and production cost estimates were given, profitability analysis were not included. The decisions to set up the three steel plants and subsequently go in for their expansion were taken during the Second and Third Five Year Plans when the emphasis was on strngthening the infrastructural base of the economy. A very high priority was therefore, accorded to the iron and steel industry; and profitability could not have been the overriding consideration in the establishments/expansion of the steel plant.

5.16 When enquired as to why there had been no improvement in profitability of the plant despite spending Rs. 181.47 crores besides Rs. 68.38 crores spent on expansion of the project, the Secretary, Department of Steel in evidence stated :

"I will be very frank. The investment that we have made so far—or some of the investments that have been made, are in a sense a rescue operation which if it had not been made, the position would have been worse. How much worse, I am not able to quantitatively say, except in a qualitative way, and I would say that if this investment had not been made, the production would not have been even 0.8 million now."

5.17 The Government has agreed, in principle, for an expenditure of Rs. 236 crores in phases for replacement/modification and refurbishing of equipment and facilities. With the help of their Consultant, MECON, the areas of rehabilitation/refurbishing have already been identified and for some of the items they are in advanced stage of processing before placement of orders for final execution of the work. The Company had also drawn up a Modernisation plan involving an investment of Rs. 1550 crores.

5.18 The Committee enquired about the profitability projections after implementation of the refurbising plan. The Managing Director, DSP stated in evidence that the scheme would only allow them to maintain the present rate of production. As per the Report of the BSC(OS) with the present condition they could achieve 1.15 million tonnes of ingot steel. But the management should immediately take up refurbushing scheme so that it did not slide down further. Any surplus or margin would be possible only after implementation of modernisation scheme.

5.19 The Committee enquired about the anticipated profitability of the plant after implementation of the modernisation plan. They were informed that their proposal for investment of about Rs. 650 crores for stage I would give a margin of Rs. 155 million before interest and for Stage II after additional expenditure of about Rs. 900 crores the margin was expected to be Rs. 348 million before interest. As per the approach note prepared by SAIL and MECON in May 1983, the profitability of the plant has been projected on a single year basis on 90% capacity utilisation which reveals that Return on Capital employed before interest and tax for Stage I would be 1.2% where in Stage II this would work out to 1.5%.

5.20 Asked whether utilisation of capacity up to 90% was a realistic assessment, the Chairman, SAIL in evidence submitted :

> "On the basis of past performance in Durgapur certainly 90% appears to be unrealistic. But if you see the steel plants' achivements otherwise, saleable steel in Bhilai has been consistently 94 to 95%. In Rourkela Steel Plant, in a year when power was available it had been 89% and last year when there was power shortage, it did 80% in terms of saleable steel. Bokaro has already touched upto 80% and it will reach 90% capacity after the expansion. So, considering the other steel plants, when this plant also becomes a modernised new plant, we feel that 90% should be possible.

5.21 In this connection, the Secretary, Department of Steel stated in evidence :—

> "SAIL has made a proposal costing Rs. 1,550 crores for modernisation. This modernisation proposal itself consists of a large number of segments. Therefore, these segments have been put together and add upto Rs. 1,550 crores. But it is not as if all these schemes are inter-dependent, because a certain degree of segregation is indeed possible. We have had problems in Durgapur. Since a very large scale of investment is involved, we have set up a task force to go into each particular assumption very carefully so that the kind of difficulties that have arisen in the past do not recur in the future. Then the viability calculations have to be done for each segment of the scheme to see what is the profitable way of overcoming the problems which have arisen and which we may have faced in DSP. The viability includes cash flows, discounting, finance, sensitivity studies etc. This refurbishing in a sense should be looked at in that context. Nevertheless, a significant part of the refurbishing programme is in fact to overcome what ought to have been done earlier in respect of maintenance. There is lot of maintenance which has to be attended to urgently. This does not mean that maintenance expenditure has not been incurred. Every year we are incurring maintenance expenditure of approximately Rs. 30 crores. But there are some very major maintenance works, which have to be undertaken, in order to

ensure that the equipment which we want to utilize for the next 5 to 10 years from now do not deteriorate and are properly mantained and operated in an efficient manner. So, a major portion of this is what is needed for this purpose. An investment of Rs. 1,550 crores has to be subjected to a much greater viability analysis than has been done. This is acutally going on right now. Every single assumption is being studied very thoroughly so that the sort of problems we had in the past like the deterioration of quality of raw material do not recur. So, what ought to be done is being looked into by the task force. It will complete its work within the next few weeks."

5.22 With ageing of the Plant there has been a steady deterioration in the health of the Plant and equipment leading to higher delays and down time. Non-availability of required quality spares was also responsible for the above delays. In the area of process technology, virtually no improvement could be introduced so far, to off-set the effects of raw materials quality deterioration. High ash and low volatile matter in coal has created fuel imbalance resulting in use of expensive furnace oil in open hearth. Energy intensive open hearth is a dying process. The Committee were also informed that the process technology as was available with DSP was considered by the experts as obsolete and to improve upon the production economically, updating of the technology was called for. As stated by the Managing Director of Durgapur Steel Plant in evidence that when DSP was set up in 1959-60 there was mainly open hearth process. Subsequently by 1970 most of the countries had reduced their production of steel through open hearth process and gone in for basic oxygen convertors. A Modernisation Scheme was drawn up in consultation with MECON on the basis of BSC(OS) report and submitted to the Government which was receiving their active consideration.

5.23 The Committee enquired as to when the modernisation proposal was first initiated and what was its subsequent development chronologically. The Durgapur Steel Plant in a note stated that in June 1976, the Board of Directors (HSL) in their meeting on 18th May 1976 had observed that the break even point of Durgapur Steel Plant based on the original budget of 1976-77 worked out to be 1.715 MT of ingot steel against the plant's installed capacity of 1.6 MT. The Board viewed the position with concern and MECON was entrusted on 28-6-1976 to study the problem in depth and suggest revised product-mix diversification of products and such other measures which could make Durgapur Steel Plant economically viable. According to Audit, in July 1976, the question of study of the economic viability of the plant was eliminated from the scope of study to be conducted by MECON on the ground that it would unnecessarily delay the completion of study. MECON prepared the preliminary feasibility report on a number of schemes/proposals. Based on MECON's preliminary feasibility report, an Approach Technology Development Plan was formulated by the Plant in 1977. Discussions at various stages were held on this Technology Development Plan and in January 1979 under the directives of Ministry of Steel and Mines, a draft Modernisation Programme of Durgapur Steel Plant was sent to British Steel Corporation (OS) for their perusal and preparation before their visit to Durgapur Steel Plant. The Ministry of Steel and Mines commissioned BSC(OS) in August 1979 to study the Technological constraints of the Plant and prepare a suitable development Plan for overcoming the same. BSC(OS) submitted their Report in November, 1980. In July, 1981, SAIL Board constituted a high power Committee to examine the

Development Plan. Based on the recommendations of this Committee, MECON prepared a comprehensive Modernisation Plan for Durgapur Steel Plant. SAIL Board approved the Modernisation Plan on 16th July, 1981 and submitted the same to the Department of Steel on 3rd August, 1981. The proposal was reviewed in an Inter-Ministerial meeting taken by Secretary (Steel) on 5th October, 1981. The expenditure of Rs. 236 crores needed for refurbishing and replacement to restore the health of the existing plant and equipment was approved in principle. On the basis of the above decision, an Action Plan spread over four years for an expenditure of around Rs. 236 crores has been taken in hand by SAIL and was under implementation by Durgapur Steel Plant.

5.24 Regarding Modernisation Scheme, as per decision taken in the meeting of the Secretary (Steel) an Approach Note was prepared and submitted by MECON on 17-3-1982. This Approach Note was discussed in depth between Department of Steel and SAIL. After discussion, the revised Approach Note was submitted by MECON in July, 1982. Secretary (Steel), convened a meeting on 24th August, 1982 in which SAIL/MECON was asked to review the demand and availability of relevant steel products in consultation with the Iron and Steel Controller in order to arrive at the final product-mix for Modernisation of Durgapur Steel Plant. Such a review was carried out by SAIL & MECON with the Iron and Steel Controller and a product-mix was finalised. Based on the finalised product-mix MECON revised their Approach Note and submitted the final document in October, 1982. This proposal envisages implementation and Modernisation Programme involving a total cost of around Rs. 1550 crores in two stages. The first stage investment proposed is around Rs. 649 crores. The proposal was circulated to various apprising agencies by Department of Steel on 17th November, 1982 and was reviewed by the apprising agencies at meeting held on 18th February, 1983. Secretary (Steel), held one more meeting on 9th June, 1983. The proposal is stated to be awaiting approval by the PIB/Government. It is envisaged that the first stage of the Modernisation Programme will be completed within four years from the date of approval by the Government. The second stage will be completed in five years from the date of approval. If both the stages are approved currently, the completion time for the total Modernisation Programme is estimated as five years. Production of crude steel under Stage-I is expected to be 1.753 MT per annum and under Stage-II—2.379 MT per annum.

5.25 Explaining the reasons for delay in taking up the modernisation scheme, the Secretary of the Ministry stated : "So far as the further schemes of technological upgradation, it is not as if we did not realise that there were further schemes that should indeed be taken up. Take, for instance, the basic oxygen convertor in place of open hearth furnace. These are very expensive schemes. The first phase is, let us improve the open-health furnace that had been erected earlier. During the course of last 10 years, there were a number of technological upgradation schemes that were undertaken. This was followed by the Action Committee Report of 1973 which went into all this. Every one of these things has been implemented, barring one. I think, the second phase is what the Task Force is dealing with. The real question is, when you come up with technological upgradation, do you do it in phases or do you do everything right straightway. I would submit that the cost of a technological upgradation of the steel plants is indeed going to be very high. The SAIL's own proposal requires an investment of Rs. 1550

crores. It is a great deal of money. This is based on a whole series of presumptions. Many of these presumptions have not been absolutely established yet. In the meantime, even more difficult problems have come up, the most important being the continuing deterioration of raw materials. I would submit that technological upgradation could be considered in two parts, one part which has been completed following the Action Committee's report and the second part is being looked into on a priority basis by the Task Force."

He added :

"The purpose of analysis is to choose the most cost effective technology. I have no doubt whatsoever in my mind that there will be a modernisation scheme, but it will be based on the most cost effective technology which will have the best possible viability.....There are a very large number of alternatives. These alternatives must be costed out so that an alternative that is selected is the most viable of all the alternatives. There are many ways in which this can be done."

5.26 The Committee enquired from the Ministry about the present position in regard to approval of the modernisation programme which was submitted for approval in August 1981. In reply the Secretary, Department of Steel stated :

"This is what the Task Force is engaged in. In a matter of weeks we will know what is the best viable alternative to select. To give a precise time-schedule for taking a Government decision, not my decision or the Department's decision, it is not entirely within the hands of the Department. Nevertheless, all I can say is that we are doing the utmost to expedite the decision. My personal expectation is that within the next two or three months it should be possible to come to a definite conclusion. Talking of the delays, I do not want to be too critical of this Steel Plant or that Plant, but even the reports that I have are that viability calculations of the sort are not there. These calculations have to be done. The proposals that have been received include production of certain items through expansion for which it is very doubtful if there is a market. The point is that no one Steel Plant can know what is happening in the total industry, not merely SAIL but there is also TISCO, IISCO, etc. Then, there are secondary producers. Therefore, any such scheme has to take into account a number of aspects all of which have to be quantified and proper viability calculations made. It is true that the proposals were reviewed in 1981. May I also submit that the proposals have been discussed within the Government. A number of questions have been raised, talking about demand, supply, technology, raw material characteristics, etc. That is way a Task Force is being set up to go into all this thoroughly and come out with the best possible viability of all the possible alternatives so that both the Steel Plants, the SAIL and we can determine which is the best viable alternative. Investments are very large. We have had lot of schemes in the past in Durgapur and it is not for me to say about the results because the facts speak for themselves. Therefore, we have to really determine what is the scheme which will yield the results promised."

5.27 When asked as to why there was administrative delay in sanctioning the modernisation proposals knowing fully well that they were initiated by experts in the field, the witness stated :

> "Proposals of this nature made by one plant have also to be considered in relation to a number of other proposals. Durgapur, IISCO, Bokaro, Bhailai and Vizag Plants have each their own proposal. These are all individual unit level proposals. Each unit looks after its own interests. Government look at all these proposals together to find out what is the best way of producing steel at the least possible cost from each plant. Government has to make a synthesis of all the proposals and find out the best."

5.28 The Committee regret to note that the Plant has continued to incur losses since inception except for a few years. It suffered a record loss of Rs. 44.23 crores in 1982-83. The cumulative losses as on 31-3-83 amounted to Rs. 308.22 crores and represented 71% of the total investment of Rs. 434.72 crores. Some of the main deficiencies in production management and cost control which have contributed to heavy losses of the Plant have been dealt with earlier in this Report. With a capacity utilisation of only 60% and other deficiencies, the Plant faces a big challenge in making up the past losses and to earn a reasonable surplus even for its own renovation and modernisation not to speak of generating surplus for financing to Plan schemes and this calls for more imaginative and concerted efforts both on the part of the Management and the Government to improve its performance. The Committee were surprised to find that the DPRs of the Plant for neither the one million tonne stage nor for its expansion to 1.6 million tonnes contained any profitability analysis. It was only at the stage of consideration of revised estimates for expansion in 1963 that the profitability analysis was made which showed that the Plant would incur a net loss of Rs. 1 crore per annum even at 100% capacity utilisation which was assumed as 1.6 million tonnes and after fulfilling all projected technological performance norms. This should have made the company and the Government to examine in all seriousness the question of financial viability of the Plant and to take suitable remedial measures. However, considering the heavy losses suffered by the Plant, it is apparent that no serious efforts were made in this direction. The Plant continues to have unfavourable product-mix which contains one-third semis with lower margin than on the finished products. There has also been failure to counter technological obsolescence in time, affecting adversely the output and the production cost. The Plant is still continuing with the dying and energy intensive open hearth process for steel making. The energy consumption per tonne of ingot steel was the highest as compared to other steel plants viz. Rourkela, Bhilai and Bokaro. The comprehensive modernisation plan costing Rs. 1550 crores, as approved by the Board, which was submitted to Government in August, 1981 is still under their consideration. Even refurbishing schemes costing Rs. 236 crores which were considered necessary to wipe out backlog of maintenance and to improve upon the health of the equipment and without which it would hardly be possible to sustain even the existing level of production are yet to be implemented. The Committee consider that it is high time to take emergent measures to increase production and productivity of Durgapur Steel Plant by providing the additional balancing facilities and by its modernisation. They, therefore desire that the schemes which are found to be cost

effective should be taken up urgently to improve production and to minimise the heavy losses being suffered by the Plant from year to year.

MADHUSUDAN VAIRALE,
Chairman,
Committee on Public Undertakings.

NEW DELHI,
17 *April,* 1984
28 Chaitra, 1906 (Saka)

APPENDIX

Statement of Conclusions/Recommendations of the Committee on Public Undertakings Contained in the Report

Sl. No.	Reference to Para No. in the Report	Conclusions/Recommendations
1	2	3
1.	1·19 and 1.20	Durgapur Steel Plant set up in 1952 with a capacity of 1 million tonnes of ingot steel was expanded to 1·6 million tonnes by 1969-70. The production of the plant has lagged far behind the rated capacity. The capacity utilisation in terms of steel ingots ranged from 40% to 68% during 1970—1983. The Plant has failed even to maintain the production level reached in 1976-77, the capacity utilisation during the last 3 years being only 46%, 58% and 60% as against 68% achieved in 1976-77. The Committee have been informed by the Plant management that on account of raw materials and other constraints the effective capacity of the Plant was lower than 1·6 million tonnes. Assessments of capacity made by various experts ranged from 1·15 million tonnes to 1·4 million tonnes. However, neither the SAIL Corporate Office nor the Ministry have approved the derated capacity, as according to Chairman of SAIL, assuming any lower figure than originally indicated has many implications'. In the circumstances, the Committee would be justified in judging the performance of the Plant with reference to rated capacity of 1·6 million tonnes. They, however, desire that the task force which is examining this matter should fix the attainable capacity of the plant on a rational and scientific basis so that the performance of the Plant could be judged in a realistic manner.
2.	1·21	The Committee find that the capacity utilisation has not only been much lower than the rated capacity but even as compared to the production targets which never exceeded 1·25 million tonnes and which are fixed every year taking into consideration the various constraints. The loss of prodution with reference to Budget targets aggregated to 18·62 lakh tonnes of saleable steel and 2·06 lakh tonnes of pig iron during 1973-83. There was a colossal loss of contribution margin of Rs. 104·72 crores on this loss of production. But for this, the overall losses of the plant (Rs. 144·69 crores) would have been less to this extent during this period. The position becomes all the more serious when it is considered that capacity utilisation of Durgapur Steel Plant has been the lowest as compared to other steel plants of SAIL. For instance, in 1982-83 as against the overall capacity utilisation of 71% for ingot steel and 79% for saleable steel for all the plants of SAIL, the capacity utilisation for Durgapur Steel Plant was only 60% and 65% respectively. It was worse as compared to TISCO which attained 97% capacity utilisation for ingot steel and 106% for saleable steel. Although external causes like shortage of power and difficulties in movement of raw materials and their shortages, etc. have affected production, major share of loss of production has generally been on ac-

1	2	3
		count of internal causes like industrial disputes, break-downs and shut-downs in excess of planned down-time, failure to provide blending and beneficiation facilities for raw materials etc. The Action Committee appointed by the Government in 1973 had also pointed out that neglecting of maintenance, lack of discipline and proper work culture had affected the production performance of the plant. The Committee cannot but take a serious view of the poor production performance of the plant on account of factors which were mainly if not wholly within the control of management. Apparently, there has been failure to take timely remedial measures to improve the production performance. The Committee urge the need for concerted efforts both by the Ministry and the management to ensure optimal capacity utilisation of the Plant.
3.	1·48	In an integrated steel plant, the adverse performance of one unit affects the performance of other units as well. The Committee regret to note that in Durgapur Steel Plant the performance of various units has been unsatisfactory. Thus, in coke ovens unit, the production of coke was much lower than the rated capacity of 17·40 lakh tonnes per annum on account of low availability of ovens and lower pushing rate. As a result there was a net production loss of Rs. 54·68 lakh tonnes of coke during 1970-71 to 1982-83. Labour troubles and poor maintenance resulted in rapid deterioration in the condition of coke ovens which necessitated taking them down for rebuilding earlier than their normal life, affecting their availability. Inordinate delays upto 6 years in their rebuilding aggrevated the situation. The Committee need hardly point out the desirability of proper maintenance of the plant and machinery and taking up of effective measures for completion of repairs and maintenance jobs as per schedule. The Government should examine what suitable steps could be taken in future to minimise time for rebuilding batteries.
4.	1·49 & 1·50	The unsatisfactory working of the coke ovens and lower volatile content in the coal charged resulted in lower yield of gas as well. This not only affected the operations of the main units but also had the effect of under-utilisation of by-product plants. Further, on account of shortage of gas, furnaces had to changed over to oil firing. This not only resulted in additional capital expenditure of Rs. 38·07 lakhs, but also in extra expenditure amounting to Rs. 81·67 crores from 1970-71 to 1982-83 on account of use of costly fuel. Deterioration in the quality of coal received by the plant is also stated to have affected the performance of coke ovens. The average ash content of raw coal has increased to 26·5% with increased fines and sand contents as against 22·8% ash content envisaged in DPR. This has resulted in higher ash in coke produced and has deleterious effect on the operation of coke ovens, blast furnaces and rolling mills. There has also been fluctuation in the quality of coal received on account of the fact that a large number of collieries have been linked to the Plant with wide variations in quality of coal. The number of coal groups linked to the Plant is stated to have increased to around 12 as compared to two groups envisaged in the DPR. The matter deserves serious attention of Gov-

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		ernment as well as Coal India Ltd. who controls coking coal mines and also operates washeries which supply part of washed coal required by the Plant. Effective steps should be taken to ensure that the coal of required quality is available to the Steel Plant. In this connection, the question of reduction in the number of collieries linked to the plant also needs to be examined seriously.
5.	1·51	In regard to inconsistency in the quality of raw materials much could be done by the management to minimise its effect by having adequate averaging and blending facilities and quality control. In spite of the fact that the inadequacy of these facilities was highlighted by the Plant management in 1973, only a few short term measures were taken by the Company which did not yield the desired results. It is only now that the averaging facility for washery feed coal and augmentation of bedding and blending facilities in coal handling plants are proposed to be introduced under the modernisation programme. The Committee regret to note the delay in the provision of these facilities and would like to be informed of the reasons thereof. They, however, hope that the Government will ensure execution of the modernisation programme recommended by the British Steel Corporation within the minimum time possible.
6.	1·62	The problem of high ash content in coal could have been solved to some extent if the captive coal washery of the Plant had worked satisfactorily. The Committee regret to note that the capacity utilisation of the washery ranged from 36% to 76% only during 1970-71 to 1982-83. The capacity utilisation had come down from 76% in 1976-77 to 56% in 1982-83. In view of the low output of the washery, a sizeable quantity of coal obtained from other sources had to be fed to the coke ovens resulting in higher percentage of ash in coal blend and the coke produced. Higher down time for maintenance and labour problems are *inter-alia* stated to have affected capacity utilisation of the washery. Surely, these matters were not outside the control of management and could have been controlled.
7.	1·63	Not only the capacity utilisation was low but the reduction in ash content ranged between 3·19% to 4·76% during 1970-80 as against 6·3% envisaged in the DPR. It is only since 1980 that as a result of certain modifications there had been improvement in ash reduction which has now come upto about 6%. The reduction in ash content is however still lower than that in other washeries like Dugda and Bhojudih which have achieved reduction between 9% to 11%. The Committee have been informed that further modifications in the washery circuit to enable reduction in ash content to the extent of 8-9% is proposed to be introduced in the modernisation programme. The Committee are unhappy over the delays in taking measures for the improvement in performance of the washery. They hope that, keeping in view the importance of captive washery in the Steel Plant, the Government and the management will take all steps necessary for modifications and modernisation, with utmost zeal on priority basis as on washery will depend to considerable extent the efficient and successful performance of the Steel Plant, These efforts for improvement of washery are all the more necessary in the wake of deteriorating quality of coal which is likely to be available from the collieries in future.

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8.	1·64	The Committee are perturbed by another factor which affects production in steel plants. It has been stated by the representative of Durgapur Steel Plant in evidence before the Committee that, apart from the high degree of ash content, stones are also found mixed up in the coal supplied which results in frequent break-down of equipment and affects continuity in production. The Committee desire that the Government should take suitable measures so that mixing of stones, with coal is eliminated altogether and quality of coal supplied to steel plants is considerably improved.
9.	1·83	The performance of the blast furnaces was none to satisfactory. The lower availability and lower productivity of blast furnaces accounted for loss of production of hot metal to the extent of 91·04 lakh tonnes during 1970—83. The fact that the furnaces were in operation for only 73% of the hours for which these were expected to be available is a matter of concern. The lower availability of blast furnaces was mainly on account of poor quality of refractory work and design deficiencies in blast furnace No. 4, which necessitated its taking down for relining much before the normal period, and unusually long time taken in relining work. The matter requires to be looked into with a view to fixing the responsibility. The Committee would also emphasise the need for intensifying the planned as well as preventive maintenance of the plant and machinery to improve its availability.
10.	1·84	Not only was the production low but the quality of hot metal produced was also poor. The production of off-grade hot metal ranged from 20% to 40% as against the norm of 15%. This not only led to production of off-grade pig iron but also affected the working of the steel melting shop. The higher production of off-grade hot metal has been attributed mainly to deteriorating quality of raw material particularly iron ore which had high silicon content. The Committee find that the management itself has to bear mainly the responsibility for it. The plant receives bulk of its requirement of iron ore from its captive mines at Bolani. Absence of adequate ore handling equipment, beneficiation plant and improper operation of the blending plant has affected the quality and consistency of the ore available for the blast furnaces. As early as 1966, the Committee on Public Undertakings suggested expediting the setting up of beneficiation plant at these mines. It is regrettable that in spite of their recommendation, the setting up of the plant has been badly delayed. While the plant for washing of fines is expected to be commissioned in 1984, the facilities for washing of lump ore are yet to be established. Surely, the Committee could expect greater attention to implementation of the schemes which go a long way in improving the performance of the plant.
11.	1.108	The Committee find that the production of steel melting shop has suffered *inter alia* due to deficiencies in planning and execution of expansion programme. The capacity of the open hearth furnaces was not expanded as envisaged in the DPR. Provision of double oxygen lancing facility, which was decided as an alternative to increase production, was also not made except in two furnaces. The reasons for this failure should be looked into and steps taken to correct the imbalance between the capacity of the steel melting shop and other units of the plant.

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12.	1.109	Production was also affected because of lower availability of furnaces on account of lower roof life, excessive time spent on completion of relining work, and low percentage of yield due to factors like imbalance between the steel ladle capacity and furnace capacity etc. All this shows that the production management left much to be desired. The Committee emphasise the need for constant vigil on the operations of the plant and taking up of measures to ensure its optimal utilisation. Effective steps should also be taken to control excessive consumption of raw materials and of ingot moulds and bottom plates, etc.
13.	1·139	The Committee are distressed to note the poor performance of the Rolling Mills. None of the Mills had attained the rated production. By and large, the actual production was also lower than the budgeted production. In this connection, the Committee find that there were inherent design and lay-out deficiencies in certain mills. For instance, in the case of blooming mill, the British Steel Experts had concluded that the optimum utilisation which a mill of such design and lay-out could achieve was 66%. The Managing Director of Durgapur Steel Plant was frank enough to admit in his evidence before the Committee that there were certain areas which could have been planned a little better and the equipments could have been a little more sturdy. The Secretary of the Ministry also stated that the blooming mill could process only 1 million tonnes of ingot steel per annum without any further investment as against rated capacity of 1·6 million tonnes. The Committee regret to note the serious deficiencies in the plant and equipment of some of the Rolling Mills and desire that the responsibility for it be fixed.
14.	1·140	The performance of the Wheel & Axle Plant has also been most unsatisfactory. The rated capacity of this plant after expansion was fixed as 75,000 wheel-sets per annum. However, a number of Committees that had gone into it had assessed that the plant could produce only 40,000 wheel sets per annum and that too if various additional facilities were provided and remedial measures taken. The actual production has been nowhere near the rated capacity, the highest capacity utilisation being 19% in 1978-79 which has also gradually deteriorated to barely 11% in 1982-83. Various factors like slackness in inter-stage inspection, heavy rejections, deficiences in maintenance of equipment, unsatisfactory industrial relations and work practices, failure to provide balancing equipment etc. which have been responsible for lower production were not beyond the control of the Management. The low production besides entailing heavy financial loss to the company resulted in heavy drain of foreign exchange on import of wheels and axles by the Railways. The total foreign exchange released on this account during the last 2 years (1981—83) alone amounted to Rs. 68·82 crores. As early as 1971, the Committee on Public Undertakings had recommended in their First Report (5th Lok Sabha) that the Ministry should make a detailed inquiry into the working of the unit to find out the reasons for abnormally low production and remedial measures should be taken to improve production performance. Although the matter is stated to have been inquired into by two Committees and steps taken for the implementation of their recommendations, the performance of the plant instead of showing any improvement had gone from bad to worse. Apparently the half-hearted measures taken by the Management had little impact on the performance of the plant. Presently, the plant has been seriously

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		damaged and the replacement of affected equipment is estimated to cost Rs. 15 crores. The Committee desire that the responsibility for severe damages to the plant be fixed and action taken against defaulters.
15.	1·141	The Committee also find that the Railways have been permitted to set up a captive wheel and axle plant with substantial capacity. The Ministry of Railways have also indicated that most of their future demand for wheels and axles from Durgapur Steel Plant would be in special new types of wheels since they were likely to cover their requirement of standard wheels from their own plant. The plant at Durgapur was, however, not in a position to produce them and would require modifications and substantial additional investment. Added to this, is the question of the price for the supplies to be made to the Railways. In spite of the fact that the price fixed at present is higher as compared to the import price, it is not still remunerative in view of high cost of production. The Committee, therefore, recommended that the whole question of the continuance of the production of wheels and axles in Durgapur Steel Plant needs to be thoroughly examined, taking into consideration the pattern of demand and the cost effectiveness of the additional investment required for replacement or addition of equipment, etc. The Committee would like to be informed of the final policy decision taken by the Government in due course.
16.	1·151 & 1·152	The Committee find that the non-availability of adequate power from DVC had also affected the production at the Plant especially in the Rolling Mills. The loss of prodution of saleable steel during the last 10 years (1973—83) solely due to power shortage is stated to be about 9 lakh tonnes. The Plant was having a small captive power plant with a firm capacity of 15 MW. Unfortunately the capacity utilisation of this plant has also been low affecting even the limited quantity of power which could be available from this plant. There has been delay in sanctioning and setting up of additional captive power plant to meet the power requirement. Although, a proposal for the installation of the captive power plant was initiated in March, 1974, this was not approved by the Government at that stage because of certain wrong assessment in regard to overall availabiity of power in this area. It was only in September, 1978 that a power plant of 2 x 60 M. was sanctioned for Durgapur Steel Plant. The Committee are distressed to note that there has been inordinate delay in sanctioning additional captive power plant to Durgapur Steel Plant. Whatever may be the considerations for the Government taking a decision for not allowing captive power units for other industries, in view of direct effect of short supply of power on its production, Durgapur Steel Plant should have been made a special care for sanctioning captive power unit. This aspect of the matter assun ed greater importance as the load factor from DVC ranged between 52% to 68% only during 1970-71 to 1982-83 and short supply could not be compensated from other sources.
17	1·153	The Committee are also sorry to note that besides valuable time lost in sanctioning of the project there had also been delay in setting up of the plant on account of delays in the supply of equipment as well as in civil and structural work. The first unit which was expected to be commissioned in

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		December, 1982 is now expected to be ready by the end of second quarter of 1984. The cost has also gone up and the revised cost is estimated to be Rs. 82·46 crores against the original approved estimate of Rs. 54·91 crores. The Committee are unhappy over the delays in execution of works connected with installation of the plant and cost over run in its setting up. They hope that now all out effort will be made to commission the captive power plant by the revised target date and effective monitoring of progress of the works will be done to achieve this end. In the meantime steps should be taken to see that adequate power is made available to the Plant from other sources.
18.	2·14	The Committee find that the plant has continued to suffer from the problem of over-staffing and lower productivity. The present strength of Works Department at 24846 is much higher than the strength of 19614 fixed after detailed studies by the Administrative Staff College, Hyderabad in December, 1972. The Committee on Public Undertakings in their First Report (1971-72) had suggested that the Government/Company should take the opportunity offered by the expansion scheme of the steel plants and Bokaro Project to gainfully employ the surplus staff as early as practicable. In fact, the number of persons has gone up both in the case of works as well as general administration and township even as compared to the actual men in position in 1971-72, the total strength as on 31-3-1983 being 32416 as against 29285 at the end of 1971-72. The reasons advanced for increase in manpower strength like installation of balancing facilities and departmentalisation of certain jobs which were previously done by contractors are justified only to a limited extent. It is regrettable that no effective steps have been taken to reduce the manpower.
19.	2·15	The inevitable casualty of over-staffing is the productivity the organisation. The labour productivity in Durgapur Steel Plant was the lowest being only 39 tonnes of steel ingots per man-year as compared to the 44 in Rourkela, 71 in Bhilai and 72 in Bokaro, not to speak of world standards where the productivity was several times higher. This is in spite of the fact that the plant has introduced productivity linked incentive scheme and an amount of Rs. 257·31 lakhs was paid as incentive in 1982-83. The problem becomes all the more serious when it is taken into account that the Mehtab Committee in 1966 considered it possible to increase the productivity of works personnel to about 125 tonnes ingot per man year in each steel plant and the management itself fixed the target of 90 tonnes per man-year for Durgapur Steel Plant. The cost of labour per ton of steel in Durgapur Steel Plant was the highest as compared to the other steel plants and was about double of that in Bokaro Steel Plant. As stated by the Secretary of the Ministry in his evidence before the Committee, the labour productivity depended to an extent upon the type of equipment in each plant but the Committee feel that it depended to a very great extent on the work practices which left a lot of room for improvement in Durgapur Steel Plant. The Committee have been informed that the recent agreement by the management with all the trade unions provides that both the sides recognise that future prosperity and efficiency of steel industry rests heavily on the ability of the parties to work in cooperation to achieve higher productivity. The Committee welcome it and hope that sincere efforts would be made both both by the management and labour to improve the work

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		culture and to achieve higher productivity with a view to reducing the cost of production and the heavy losses being suffered by the plant.
20.	3·25	The Committee find that in spite of very low capacity utilisation, the plant was carrying large inventories which amounted to Rs. 225·67 crores at the end of the year 1982-83. There was heavy accumulation, particularly, of finished and semi finished goods which were of the order of Rs. 126·20 crores and were equivalent to more than six months sale in 1982-83. On the other hand, sizeable imports of iron and steel products had taken place during 1981-82 and 1982-83 to meet the projected demand which did not materialise and SAIL was carrying stock of imported steel valued at about Rs. 46·2 crores as on 1-4-83. The Committee regret to note that there have been deficiencies in planning of imports and domestic production. The Secretary of the Ministry was frank enough to admit that the marketing organisation of SAIL has to be more dynamic and much closer to the customers to assess correctly the changes in demand pattern and to change the marketing and production strategy accordingly. The existing co-ordination between steel production and imports also needed a lot of improvement. The Committee hope that at least in future there would be better planning of imports and domestic production of steel keeping in view not only the total confirmed demand but the pattern of consumption also.
21.	3·26	The Committee have been informed that there has now been a reduction in the existing stocks which have gone down from 2·90 lakhs tonnes on 1st April to 2·10 lakh tonnes on 1st August, 1983. This is a step in the right direction. They would emphasise the need for constant review of the stock position to reduce the stocks to the minimum to save the unnecessary locking up of funds and the heavy inventory carrying costs.
22.	3·27	Not only was the plant having huge stock of finished products but that of stores and spares also. The total value of stores and spares was equivalent to about 20 months consumption which needs to be brought down. Stores worth about Rs. 31·14 crores had not moved for more than two years. The Committee desire that effective steps be taken to dispose of surplus items of stores expeditiously.
23.	3·28 & 3·29	The physical verification of raw materials and finished stocks has revealed heavy shortages. In the case of raw materials there were abnormal shortages of the order of Rs. 2·12 crores during the last 5 years. This was in addition to the shortages of the value of Rs. 6·02 crores during the last 5 years which were considered normal by the plant management. Test check of certain wagons of raw coal disclosed shortages ranging from 8% to 11%. Admittedly there have been pilferages of materials in transit. However, as the weighment of incoming wagons was on test check basis and accountal thereof was made on the basis of weight indicated in the Railway receipt, it was not possible to ascertain the transit losses and to lodge the claims on the Railways. Not only there were shortages in raw materials, heavy net shortages to the extent of Rs. 10·21 crores were also found in the case of finished and semi-finished goods during the last 5 years. The shortages in finished stocks had also arisen

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		Inter alia on account of the fact that while despatching goods the wagons were not tare-weighed. The possibility of some of these wagons having weight lesser than the declared tare weight and consequential despatch of goods in excess of the quantity booked could not be ruled out. The Committee take a serious view of heavy shortages noticed both in the case of raw materials as well as finished and semi-finished stocks resulting in an average a loss of Rs. 2·5 crores per annum besides the normal handling losses of Rs. 1·2 crores in raw materials. They desire that the shortages be investigated.
24.	3·30	The Committee are dismayed at the sorry state of affairs in Durgapur Steel Plant in the matter of physical verification of stocks of raw materials, spares, semi-finished and finished goods. The verification is based on rough estimation and approximation. There is no fool-proof system of weighment of wagons, raw materials and finished items. The whole system leaves room for loopholes and pilferages. Various excuses for shortages are given. For example, it is stated that changing machines go off very often, resulting in break-downs, there are errors in assessment of consumption and even in stock verification, there are only test checks of wagons, tare weight of wagons is not checked, and so on. The Committee recommend that the Government give serious consideration to this problem and devise ways and means to develop fool-proof system of weighment of raw materials and finished goods so that losses resulting from inaccurate weighment and thereby wrong costing are eliminated.
25.	4·16	The Committee take a serious view of the heavy demurrage charges paid by the Plant. The total amount paid as demurrage charges during the last 5 years amounted to Rs. 14·37 crores, that is on an average about Rs. 3 crores per annum on account of detention of wagons beyond the free time allowed by the Railways. Such long detention of wagons resulting in heavy demurrages charges can by no means be considered as reasonable. A major factor attributed to this has been operational delays like break-down of the handling equipment, deficiencies in layout of the exchange yard and insufficient storage capacity. Keeping in view the heavy demurrage charges paid year after year it was expected of the management to take effective steps to remove the various operational deficiencies. The Committee would like to know why this was not done all these years. The Committee have been informed that the Department of Steel and Management of the Plant now propose to take up some schemes and projects of expansion, modernisation, and installation of certain devices in the yards with a viw to achieve quicker movement of wagons and reduce demurrages. They urge the authorities concerned and especially the Department of Steel not only to finalise these schemes and plans without delay but also see that they are implemented at the earliest.
26.	4·17	The Committee would also like to stress the need for strict watch over the preventive maintenance of the handling equipment as per schedule to minimise their break-down.
27.	4·18	Bunching of wagons and receipt of defective wagons are also stated to have contributed to delays in loading and unloading of wagons. The matter should be examined in detail with the Railways to ensure more regulated flow of wagon to and from Durgapur Steel Plant. Other suitable measures should also be evolved to minimise the demurrage charges on this account.

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28.	5·28	The Committee regret to note that the Plant has continued to incur losses since inception except for a few year . It suffered a record loss of Rs. 44·23 crores in 1982-83. The cumulative losses as on 31-3-83 amounted to Rs. 308·22 crores and represented 71% of the total investment of Rs. 434·72 crores. Some of the main deficiencies in production management and cost control which have contributed to heavy losses of the Pant have been dealt with earlier in this Report. With a capacity utilisation of only 60% and other deficiencies, the Plant faces a big challenge in making up the past losses and to earn a reasonable surplus even for its own renovation and modernisation not to speak of generating surplus for financing the Plan schemes and this calls for more imaginative and concerted efforts both on the part of the Management and the Government to improve its performance. The Committee were surprised to find that the DPRs of the Plant for neither the one million tonne stage nor for its expansion to 1·6 million tonnes contained any profitability analysis. It was only at the stage of consideration of revised estimates for expansion in 1963 that the profitability analysis was made which showed that the Plant would incur a net loss of Rs. 1 crore per annum at 100% capacity utilisation which was assumed as 1·6 million tonnes and after fulfilling all projected technological performance norms. This should have made the company and the Government to examine in all seriousness the question of financial viability of the Plant and to take suitable remedial measures. However, considering the heavy losses suffered by the Plant, it is apparent that no serious effort were made in this direction. The Plant continues to have unfavourable product-mix which contains one third semis with lower margin than on the finished products. There has also been failure to counter technological obsolescence in time, affecting adversely the output and the production cost. The Plant is still continuing with the dying and energy intensive open hearth process for steel making. The energy consumption per tonne of ingot steel was the highest as compared to other steel plants viz. Rourkela, Bhilai and Bokaro. The comprehensive modernisation plan costing Rs. 1550 crores, as approved by the Board, which was submitted to Government in August, 1981 is still under their consideration. Even refurbishing schemes costing Rs. 236 crores which were considered necessary to wipe out backlog of maintenance and to improve upon the health of the equipment and without which it would hardly be possible to sustain even the existing level of production are yet to be implemented. The Committee consider that it is high time to take emergent measures to increase production and productivit of Durgapur Steel Plant by providing the additional balancing facilities and by its modernisation. They, therefore, desire that the schemes which are found to be cost effective should be taken up urgently to improve production and to minimise the heavy losses being suffered by the Plant from year to year.

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