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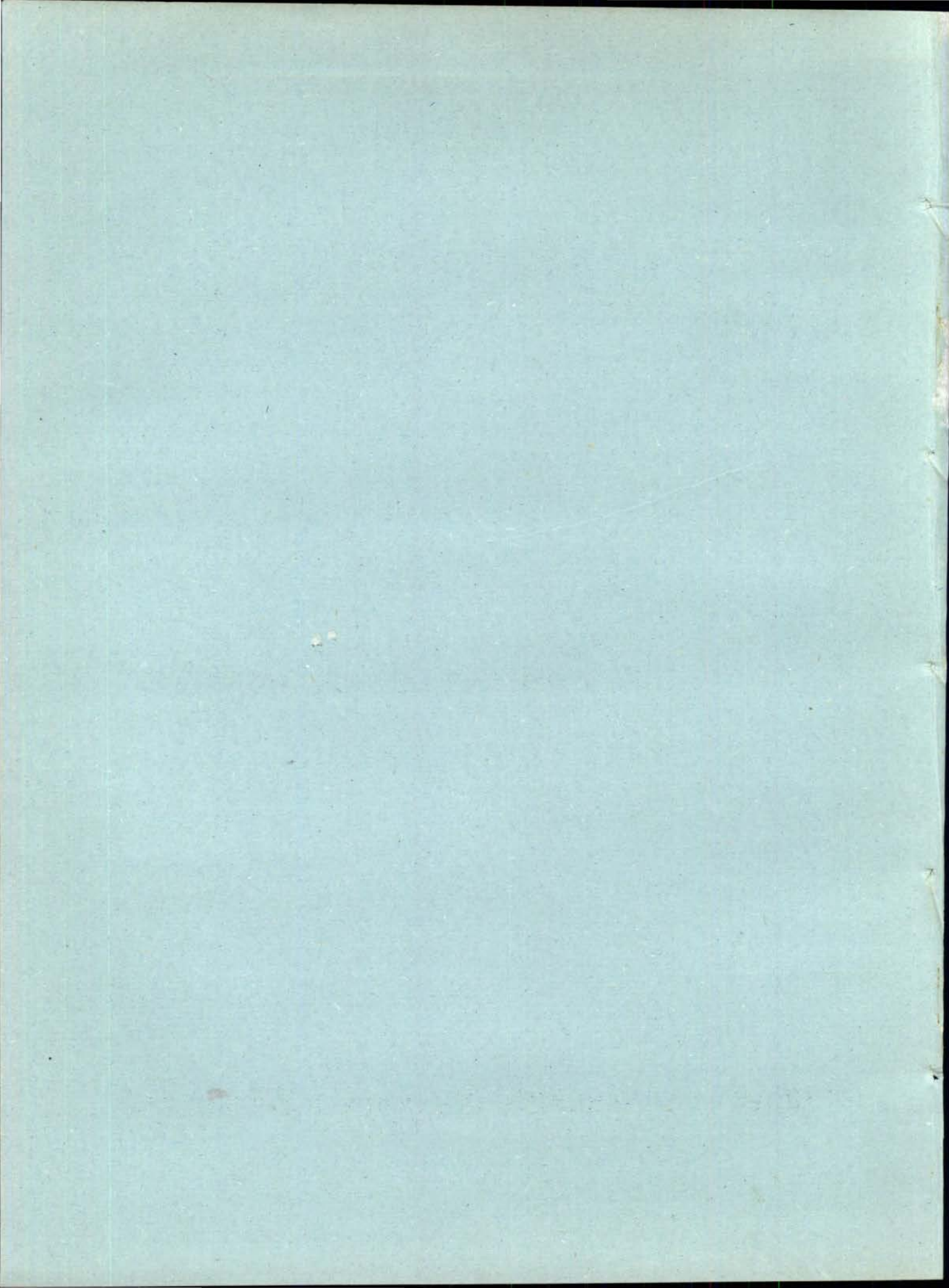
REPORT OF THE
COMPTROLLER AND AUDITOR GENERAL
OF INDIA

UNION GOVERNMENT
NO.15 (COMMERCIAL) OF 1991

CAG HEAVY ENGINEERING CORPORATION LIMITED

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- 1. Introduction
- 2. Objectives of the Study
- 3. Methodology
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The study was conducted in the year 2010. The objectives of the study were to determine the effect of the independent variable on the dependent variable. The methodology used was a quantitative approach. The results of the study are presented in the following table. The conclusion of the study is that there is a significant positive relationship between the independent variable and the dependent variable.

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PREFACE

The report on Heavy Engineering Corporation Limited was prepared by an Audit Board consisting of the following Members:-

1. Shri K. Tyagarajan Deputy Comptroller & Auditor General (Commercial)-cum-Chairman, Audit Board (Upto 30th April 1990)

2. Shri A.C. Tiwari Deputy Comptroller & Auditor General (Commercial)-cum-Chairman, Audit Board (From 1st May 1990 to 7th June 1991)

3. Shri P.K. Sarkar Deputy Comptroller & Auditor General (Commercial)-cum-Chairman Audit Board (From 8th June 1991 till date)

4. Shri Lachman Singh Member, Audit Board & ex officio Director of Commercial Audit, Ranchi from 29th February 1988 to 27th February 1990 and as Principal Director of Commercial Audit and ex-officio Member, Audit Board (28th February 1990 to 27th August 1991).

5. Shri M.P. Gupta Principal Director of Commercial Audit & ex-officio Member, Audit Board, Ranchi (28.8.1991 to 23.2.1992)
6. Smt. A. Basu Member, Audit Board & ex-officio Director of Commercial Audit-I, Calcutta from 21st September, 1987 to 27th February 1990 and as Principal Director of Commercial Audit and ex-officio Member, Audit Board from 28th February 1990 to 11th November, 1991.
7. Shri U. Bhattacharya Principal Director of Commercial Audit and ex-officio Member Audit Board-I, Calcutta from 12th November, 1991 onwards.
8. Shri B.S.V. Rao D.D.G. (Retd) D.G.T.D. Part time Member.
9. Shri S.S. Basu Adviser (Ind. Systems and Products) BHEL.

2. The report was finalised by the Audit Board after taking into account the result of discussions held with the representatives of the Ministry and the Company at its meeting held on 10th December, 1991.

3. The Comptroller & Auditor General of India wishes to place on record his appreciation of the work done by the Audit Board and in particular, the contribution made by the two part-time Members.

OVERVIEW

i) HEC was established in December 1958 primarily with a view to meeting the demand for heavy capital equipment and machinery for the then nascent steel industry.

(Para 1.1)

ii) The authorised and paid up capital of the company as on 31.3.1991 was Rs.275 crores and Rs.207.49 crores respectively.

(Para 4.1.1)

iii) The Government of India has been granting plan as well as non-plan loans to the company. The quantum of these loans as on 31.3.1991 amounted to Rs.42.08 crores and Rs.169.38 crores respectively. The Government also waived off non-plan loans and interest on loans aggregating to Rs.428.67 crores besides granting interest holiday for four years on all loans sanctioned from 1.4.1986 to 31.3.1990..

(Para 4.1.2)

iv)(a) The net worth of the company as on 31.3.1991 is (-) Rs. 107.34 crores. The accumulated loss of the company amounted to Rs.289.51 crores against the paid up capital of Rs.207.49 crores as on 31.3.1991.

(para 4.2)

b) The company is not expected to generate profits in the immediate future. In the Memorandum of Understanding between the company and the Government for 1991-92 it has been decided that the Company's performance will be considered excellent if its net loss is limited to Rs. 56 crores, very good if its net loss is limited to Rs. 63 crores, good if its net loss is limited to Rs. 66 crores, average if its net

loss is limited to Rs. 69 crores and poor if its net loss is limited to 72 crores.

During 1990-91 the performance of the Company was considered to be "Poor" when its net loss was Rs. 99.51 crores.

(Para 13.1.2 & 13.1.3)

v) Low capacity utilisation has been a chronic feature of the working of the company since inception. The overall production performance of the three plants in the last eight years ending 31st March 1991 was very low even with reference to the reassessed low level capacity of these plants. Highest capacity utilisation ever achieved in the company was about 45% in Foundry Forge Plant, 64% in Heavy Machine Building Plant and 79% in Heavy Machine Tools Plant.

(Para 5.2)

vi) The company did not even achieve its own lower targets of production during the last eight years.

(Para 5.4.1)

vii) In the production of liquid metal in Foundry Forge Plant there were losses due to burning and generation of scrap in excess of DPR norms.

(Para 5.9 and 5.10)

viii) Heavy rejection of castings and forgings in the Foundry Forge Plant have been a recurring feature affecting the productivity and profitability of the company.

(Para 6.1)

ix) Delay in execution of contracts was last reported in Audit Report (Commercial) 1970 Part VII. However, there has not been any reduction in delays

in supply of equipments to the customers including foreign customers.

(Para 7.1,7.2 & 7.3 &
Annexures 5 A & 5 B)

x) Since inception there have been excessive idle labour hours for direct workers in the three plants of the company i.e. 31.5% to 41.6% in Foundry Forge Plant, 24.04% to 28.55% in Heavy Machine Building Plant and 8.86% to 31.18% in Heavy Machine Tools Plant.

(Para 8.1)

xi) No norms for labour productivity have been fixed by the company. However, targets of production per direct worker were not achieved in any of the last eight years.

(Para 8.2)

xii) The utilisation of machines in the machine shop of Foundry Forge Plant ranged between 32 to 58 percent, in Heavy Machine Building Plant 59 to 67 percent and in Heavy Machine Tools Plant 57 to 72 percent of the available hours.

(Para 8.5)

xiii) The main reason causing high percentage of idle time of labour and machines has been frequent breakdowns of plant and machinery.

(Para 8.6)

xiv) The corporation reassessed its rated capacity to a very low level. No action has, however, been taken to reassess the manpower for the reduced capacity.

(Para 9.2.1)

xv) Maximum, Minimum and reordering levels have been prescribed only for a few items.

(Para 10.3)

xvi) The corporation has not achieved the targets of budgeted sales in any of the eight years ending 31.3.1991.

(Para 11.3.1)

xvii) Based on the actual performance, the company has adopted 60%, 62.5% and 45% utilisation criterion of machines in Heavy Machine Building Plant, Heavy Machine Tools Plant and Foundry Forge Plant respectively. However, there is no standard costing against which to measure the actuals.

(Para 12.3.1 & 12.3.2)

1. INTRODUCTION

Heavy Engineering Corporation Limited. (HEC), was incorporated on 31st December 1958 as a fully owned Government company, primarily with a view to meeting the demand for heavy capital equipments and machinery of the then nascent steel industry. The company has its Head Office at Ranchi with three production plants viz. Heavy Machine Building Plant (HMBP), Heavy Machine Tools Plant (HMTP) and Foundry Forge Plant (FFP). It also has a turnkey Project Division at Ranchi from 1984-85 with branch offices at Calcutta and Visakhapatnam and liaison offices at New Delhi and Moscow.

1.2 The working of the company was last reviewed in Part VII of the Audit Report (Commercial)-1970 mainly highlighting the following deficiencies/shortcomings:-

- low capacity utilisation
- shortfalls in production vis-a-vis production targets
- off loading of orders despite idle capacity.
- time and cost overruns
- cancellation of orders by customers
- high rejection rate
- losses year after year

1.3 The Committee on Public Undertakings (COPU) considered the above deficiencies/shortcomings and recommended remedial measures in its 18th Report (5th Lok Sabha, 1972). Though the Government accepted and promised to implement them all, there has been no improvement in the overall performance of the company. The same deficiencies/shortcomings have been noticed during the current review.

2. ORGANISATIONAL SET UP

The overall control and management of the company is vested in a Board of Directors. As on 31st March 1991 the Board consisted of a full time Chairman-cum-Managing Director, five functional directors in charge of Finance, Marketing, Personnel, HMBP and FFP and four part time directors. During the last eight years ending 31st March 1991 there were occasions when the post of the Chairman-cum-MD remained vacant from two to eight months. Similarly the posts of various functional directors also remained vacant for spells ranging from four to twenty seven months. The detailed vacancy position has been shown in Annexure I.

3.OBJECTIVES

3.1 Major objectives of the company as per its Memorandum of Association are production of machinery and equipment required for heavy industries and execution of orders for heavy equipments.

3.2 The micro objectives as approved (March 1981) by the Board of Directors are:-

- to achieve dominant position in the manufacture and supply of all steel plant equipments and spares necessary for modernisation and expansion of the existing steel plants ;
- to operate in the highly sophisticated and specialised field of castings and forging technology and to manufacture sophisticated casting and forgings ;
- to produce modern heavy machine tools with numerical control system;
- to raise and enhance profitability by sound managerial practice, including proper inventory control and developing indigenous sources for materials and components to reduce foreign exchange outflows ;
- to ensure long range planning for product diversification like excavators, walking draglines, over burden drills, sponge iron, low temperature carbonisation plants and other turnkey projects for better utilisation of its capacity ;
- to generate internal resources to finance growth of the organisation ; and
- to evolve participative system of management ensuring good working conditions and job satisfaction to all employees.

3.3 The above micro objectives were, however, not achieved as would be seen from this review.

4. CAPITAL STRUCTURE & FINANCIAL PERFORMANCE

4.1 Capital structure.

4.1.1 HEC was registered as a Central Government Company with an authorised share capital of Rs.50 crores which was raised from time to time and gradually increased to Rs.275 crores against which the company's paid up capital was Rs.207.49 crores as on 31st March 1991.

4.1.2 The Government of India, besides granting an equity for development to the tune of Rs.43.06 crores, has granted to the company plan as well as non-plan loans to the extent of Rs.42.08 crores and Rs.169.38 crores respectively from time to time during the last eight years ending 31st March 1991 keeping in view the critical financial position of the company. The Government also waived off non-plan loans amounting to Rs.259.17 crores as on 31.3.1986 against the cumulative cash loss of Rs.299.28 crores incurred by the company till 31.3.1986 and interest on loans to the extent of Rs. 169.50 crores upto 31.3.1988 besides granting interest holiday for four years on all plan and non-plan loans sanctioned from 1.4.1986 to 31.3.1990.

4.1.3. The company has also been availing deferred credit facility for import of plant and machinery and components. The amount outstanding on this account as on 31st March 1991 was Rs.59.36 crores.

4.1.4 The company has made cash credit arrangements with the State Bank of India up to a limit of Rs.150 crores against which Rs.142 crores were drawn as on 31st March,1991.

4.2 Financial Position.

The table below summarises the financial position of the company under broad headings for the last six years ending 31st March 1991.

TABLE 1

Summarised Financial Position

(Rs. in crores)

<u>Liabilities</u>	1985-86	1986-87	1987-88	1988-89	1989-90	1990-91
a)Paid up capital	172.65	177.15	179.65	187.06	198.49	207.49
b)Reserve & surplus (Capital Reserve)	-	-	2.50	2.50	2.50	2.50
c)Borrowing from :						
(i)Govt of India						
Loan	314.00	385.94	457.05	467.93	182.13	203.19
Unpaid interest	43.56	51.04	61.04	2.40	3.16	8.15
(ii)Scheduled Bank(Secured)	61.72	64.00	70.82	92.88	114.29	141.99
(iii)Scheduled Bank Others (unsecured)	2.10	3.88	1.38	0.03	0.07	0.03
(iv)Deferred credits	29.75	30.74	31.06	57.55	62.58	59.36
d.Trade dues & other current liabilities excluding prov. for gratuity	255.65	279.76	264.24	259.46	270.27	328.61
e.Provision for gratuity	18.31	24.72	27.50	31.23	35.61	43.67
Total	897.74	1017.23	1095.24	1101.04	869.10	994.99
<u>ASSETS</u>	1985-86	1986-87	1987-88	1988-89	1989-90	1990-91
(e)Gross Block	217.67	217.62	226.61	240.81	253.63	261.63
(f)Less:Depreciation	143.24	148.56	152.22	157.05	163.12	168.62
(g)Net fixed Assets	74.43	69.06	74.39	83.76	90.51	93.01
(h)Capital work-in- progress	11.20	15.98	12.42	11.16	18.60	22.08
(i)Investments	0.09	0.09	0.09	0.09	0.09	0.09
(j)Current Assets						
loans & advances	303.50	354.85	408.78	505.03	541.17	562.48
(k)Deferred Revenue Expenditure	5.48	5.78	6.42	24.99	28.73	27.82
(l)Misc. Expenditure	0.05	0.05	-	-	-	-
(m)Profit & loss Account (Acc.loss)	502.99	571.42	593.14	476.01	190.00	289.51
Total	897.74	1017.23	1095.24	1101.04	869.10	994.99
Capital Employed	122.28	144.15	218.93	329.33	361.41	326.88
Net worth	(-)335.86	(-)400.09	(-)417.40	(-)311.44	(-)17.73	(-)107.34

Notes:(1) Capital employed represent net fixed assets, plus current assets minus trade dues & other current liabilities.

(2) Net worth represents paid up capital plus reserve less intangible assets including accumulated losses.

4.3 Working Results

The working results of the company for the last eight years ending 31st March 1991 are tabulated below:-

Table 2
(Rs. in crores)

<u>Income</u>	1985-86	1986-87	1987-88	1988-89	1989-90	1990-91
1.Sales	186.20	243.76	271.16	320.30	319.98	233.92
2.Other revenue	6.76	3.49	2.84	15.05	12.77	11.66
3.Accretion(+)/ Decretion(-)to Semi-finished or finished goods.	24.43	7.76	10.88	43.63	48.64	29.88
4.Total	217.39	255.01	284.88	378.98	381.39	275.46
<u>Expenditure</u>						
5.Expenditure (other than those mentioned in lt.Nos 7 to 10 below)	232.53	267.19	261.38	362.22	395.18	348.89
6.Cash Profit(+)/Loss(-) (-)15.14	(-)15.14	(-)12.18	(+)23.50	(+)16.76	(-)13.79	(-)73.43
7.Deferred Revenue exp.written off	0.46	0.51	0.59	3.47	5.06	7.19
8.Interest payable to Govt.	43.56	51.04	61.04	2.40	3.16	8.15
9.Provision for Bad & Doubtful Debts	0.58	1.20	2.18	2.30	3.11	5.01
10.Depreciation	6.32	4.79	4.10	4.32	5.37	6.03
11.Net profit(+)/loss(-) (-)66.06	(-)66.06	(-)69.72	(-)44.41	(+)4.27	(-)30.49	(-)99.81
12.Percentage of Profit(+)/Loss(-) to sales	(-)35.48	(-)28.60	(-)16.38	(+)1.33	(-)9.53	(-)42.67
13.Percentage of Profit(+)/ Loss(-)to capital employed.	(-)54.02	(-)48.37	(-)20.28	(+)1.30	(-)8.44	(-)30.53

NOTE: Net Profit /loss is exclusive of Prior Period adjustments.

4.4 From the above table it is evident that the company is incurring losses every year from 1985-86 to 1990-91 except in 1988-89 when it earned a marginal profit of Rs.4.27 crores. The accumulated loss of the company has been increasing year after year and the same stood at Rs.289.51 crores as on 31st March 1991 against the paid up capital of Rs.207.49 crores. The accumulated loss as on 31st March 1991 would have been Rs.718.18 crores had the financial relief of Rs.428.67 crores by way of waiver of non-plan loans and interest, granted by the Government not been taken into account.

4.5 The Management attributed (October 1986) the following reasons for losses :-

- Low labour productivity.
- managerial inadequacies and deficiencies.
- inadequate and interrupted power supply.
- shortage of funds.
- system deficiencies.
- high inventories.
- unsatisfactory plant maintenance.
- unforeseen increase in cost elements especially on raw materials, stores and spares, wages and power.

4.6 Budgetary Control

The company prepares each year capital and revenue budgets, which are reviewed in October on the basis of actuals for the first six months and revised budgets are prepared. One feature of the Revised Budgets has been that the original budget is drastically cut down to match with the actuals of the first six months. Despite this the revised estimates remained unachieved as would be seen from the following table :-

Table 3

(Rs. in crores)

Year		Original	Revised	Actuals
1985-86	Earnings	274.78	246.94	217.39
	Outgoings	321.48	316.03	283.45
	Profit(+)/ Loss (-)			
1986-87	Earnings	285.67	284.56	255.01
	Outgoings	361.29	354.61	324.73
	Profit (+)/ Loss (-)	(-)46.70	(-)69.09	(-)66.06
1987-88	Earnings	333.62	259.02	284.88
	Outgoings	391.45	333.08	329.29
	Profit (+)/ Loss (-)	(-)75.62	(-)70.05	(-)69.72
1988-89	Earnings	333.02	335.02	378.98
	Outgoings	330.21	326.49	374.71
	Profit (+)/ Loss (-)	(-)57.83	(-)74.06	(-)44.41
1989-90	Earnings	388.45	394.41	381.39
	Outgoings	372.85	391.41	411.88
	Profit(+)/ Loss (-)	(-)2.81	(+)8.53	(+)4.27
1990-91	Earnings	455.69	340.22	275.46
	Outgoings	470.96	415.66	375.27
	Profit (+)/ Loss (-)	(+)15.60	(+)3.00	(-)30.49
		(-)15.27	(-)75.44	(-)99.81

5. Production performance Macro view.

5.1 The three production plants of the company produce the following items :-

- a) Foundry Forge Plant (F.F.P): MF castings, GI castings, steel castings, Forgings, Rolls, etc.
- b) Heavy Machine Building Plant (H.M.B.P.): Metallurgical Machinery and Equipments and structurals.
- c) Heavy Machine Tools Plant (HMTP): Machine tools and special accessories.

5.2. Low capacity utilisation has been a recurring feature since inception of HEC. The original installed capacity for production was brought down substantially in 1980 in a re-assessment exercise as the initial infrastructure of HEC meant for steel plants was no longer considered valid. The overall production performance of the three plants in the last eight years ending 31st March 1991 was very low even with reference to the reassessed capacity as indicated below:-

Plants	Original capacity as per DPR.	Reassessed capacity.	Average Percentage of actual production to Reassessed capacity	
FFP	1,74,540	51,215	19,273	38
HMBP	1,05,000	40,000	20,889	52
HMTP	10,000	3,000	1,397	47

The highest capacity utilisation ever achieved by Company was 45% of reassessed capacity in FFP, 64% in HMBP and 79% in HMTP.

5.3 Similarly the capacity utilisation of all the service units of the company viz producer Gas Plant, Boiler House, Acetylene Plant, Oxygen Plant, compressor House etc. as detailed in Annexure 2 was far below capacity. The Management stated that the main reason for lower capacity utilisation was the poor performance of the main consuming units.

5.4.1 The Company did not even achieve its own lower targets of production during the eight years as indicated below:-

Table 4

(Figures in MT)

Year	<u>F.F.P.</u>			<u>H.M.B.P.</u>			<u>H.M.T.P</u>		
	Targets of production	Actual production (excluding steel ingots)	Percent age of actual production to target	Targets of production	Actual production	Percent age of actual production to targets	Target of production	Actual production	Percent age of actual production to targets
1983-84	51168	17580	34	38315	25755	67	4036	1337	33
1984-85	42655	17789	42	37711	20765	55	2724	1394	51
1985-86	36756	20099	55	28900	19890	69	2436	1409	58
1986-87	33309	21481	64	26215	23554	90	2618	2357	90
1987-88	41564	18601	45	35751	20741	58	2038	1117	55
1988-89	37625	23026	61	34318	25607	75	1425	1235	87
1989-90	39755	20743	52	23453	20933	89	1618	1227	76
1990-91	41190	14857	36	21327	9867	46	1991	1099	55

5.4.2 The Management attributed (Dec. 1984, Nov. 1988) the reasons for low production to factors like frequent power interruptions, difficult and unbalanced products-mix, general strike and consequent lock-out for a period of about three months during 1987-88, inadequate supply of castings/forgings from FFP, low labour productivity, non-availability of materials and surplus manpower etc.

5.5. Upto 1984-85 a sizeable portion of actual production was against stock orders but anticipated orders were not received. The Company suffered the following losses on this account :-

- (i) Loss of Rs. 23.35 lakh on the auction of 562 MT of ingots moulds and bottom plates at different rates ranging from Rs. 1900/- to Rs. 2150/- per MT during 1985-86

(ii) Out of the rejection of 3940 MT of steel ingots, 1180 MT worth Rs. 57.49 lakh were disposed of at Rs. 32.47 lakh at different rates ranging from Rs. 2520/- to Rs. 3300/- per MT incurring a loss of Rs. 25.02 lakh from 1983-84 to 1985-86.

5.6.1. A Crankshaft project under FFP was completed in October, 1976, at a cost of Rs. 344.00 lakh to manufacture 150 Crankshafts per year to meet the overall requirement of customers; actual production was, however, lower than anticipated during 1985-86 to 1987-88 as indicated below:-

Year	Crankshafts produced (In numbers)
1985-86	100
1986-87	55
1987-88	40

5.6.2. Instead of expected profit of Rs.16.00 lakh per annum from 1986-87 from this project, the company suffered a loss of Rs. 406.06 lakh in the supply of 558 Crankshafts to DLW, Varanasi during 1975-76 to 1987-88. Management stated that achievement of 150 Crankshafts per year had not been possible due to certain technological constraints such as (i) the capacity on crankpin Turning and Crankshaft grinding operations is limited (ii) location of crankshaft facilities within the heavy machine shop where heavy cuts on Machines led to vibrations (iii). Scattered layout of crankshaft machines and equipments in 3 different bays.

5.7. The company set up a Consultancy Division in 1976 to diversify its activities on turnkey basis in the fields of metallurgical industries, process plant, sponge iron plant, low temperature carbonisation plant, cement plant, mining industries etc. Eleven such turnkey projects were undertaken by the company out of which seven were completed incurring a loss of Rs. 600.31 lakhs upto 31st March 1991.

5.8.1 The company entered into a collaboration agreement with M/s Hitachi Ltd., Japan in 1982, for transfer of technical know-how for updating the

technology in the fields of steel forgings and forged steel rolls including steel melting and modernisation of 6000 tonnes press in the FFP, so as to increase the production of steel forgings and forged steel rolls from 4377 MT valued at Rs. 10 crore in 1981-82 to 9700 MT valued at Rs. 24 crore per annum by the end of 1990. As per project report the entire scheme envisaged installation of imported and indigenous machines and equipments. It was scheduled to be completed by 1984-85 at a cost of Rs. 9.3 crore. However, Rs. 9.77 crore had been spent upto 31st March 1991. The scheme is still under construction.

5.8.2. The production of forgings and forged steel rolls reached 10,261 MT in 1988-89 and came down to 5548 MT in 1990-91, against an installed capacity of 41,463 MT.

5.9. In the production of liquid metal there were losses due to burning and generation of scrap in excess of DPR norms in the foundries of FFP. The burning losses in the G.I. foundry ranged between 4% and 8.12% against DPR norm of 5%. These losses in steel foundry varied between 7.45% to 13.16% against DPR norms of 7%. The monetary value of losses of last six years works out to Rs. 90.70 lakh for 4042 MT (for details please see Annexure 3).

5.10. Generation of scrap in the G.I. foundry had varied from 29.04% to 36.60% against DPR norms of 26%. Loss due to this excess scrap generation worked out to 4910 MT. valued at Rs. 16.10 lakhs (for details see Annexure 4). Besides excess generation of scrap there was also loss owing to rejection of cast production to the extent of 10611 MT. during 1983-84 to 1987-88.

6. Quality Control

6.1. Heavy rejection of castings and forgings produced in the FFP have been a recurring feature. In the DPR, norms for rejection in respect of shaped iron castings, ingot moulds and iron rolls only were laid down. On the recommendations of COPU (Nov. 1971) the Ministry substantially increased (July. 1972) the rejection norms for these items and fixed tentative limits of rejection percentages in respect of grey iron castings, ingot moulds, grey iron rolls, steel castings, steel rolls and forgings. In March 1984 Management furnished to Audit variable norms for rejects in respect of products manufactured in FFP and components manufactured in HMTP by substantially increasing the norms fixed by the Ministry and it also laid down norms for a few other items. The table below indicates the rejection percentage as per DPR norms, norms reported to COPU, norms reported to Audit and actual rejection percentages from 1984, when norms were intimated to Audit.

Table 5

Products	DPR Norms	Norms reported by Ministry	Norms reported to Audit	Actual Rejections (Figures in percentage)							
				July'72	March'84	85-86	86-87	87-88	88-89	89-90	90-91
<u>FFP</u>											
G.I. Castings	6.41	10.00	10 to 17.5	25.00	9.00	15.00	11.70	13.60	9.55		
Ingot moulds	0.12	5.00	8	7.00	14.00	13.00	6.90	4.97	3.46		
G.I. rolls	5.92	20.00	20 to 34	27.00	30.00	9.00	-	4.20	5.54		
Steel Castings	-	5.00	5 to 7	7.00	3.00	4.00	3.90	5.89	5.80		
Steel Rolls	-	10.00	18 to 20	5.00	81.00	-	-	-	-		
Steel Ingots	-	-	8 to 11	6.00	5.00	4.00	2.70	2.33	3.13		
Forgings & Forged Rolls	-	9.00	7.5 to 9	6.00	5.00	6.00	6.80	5.76	7.49		
<u>HMTP</u>											
Components	-	-	3 to 5	9.48	6.74	7.00	4.72	3.64	3.73		

6.2 The above table shows that the actual rejections have been showing a downward trend and there is need to

update the norms effectively. Value of excess rejections excluding rejection of steel ingots over norms reported to COPU (July. 1972) during last eight years ending 31st March 1991 amounted to Rs. 5.29 crores.

6.3 To ensure quality of products, each plant has its own quality control department besides one quality control unit at corporate level. Cent per cent inspection is carried out at every stage right from input to finished product. In spite of this, heavy rejections by outside customers and sister plants continued to occur.

6.4 Management intimated (March 1989) that they had taken following actions to bring rejections of castings and ingots within the norms fixed by COPU.

- To reduce defects like blow-holes, sand drop, sand fusion etc. in castings, HEC has started use of no bake sand, application of zircon and magnetic paints, use of zircon facing sand for heavy castings and adopted other technical measures.
- To reduce chances of cracking in ingots by vacuum treatment of liquid steel gradually, by secondary refining in VAD furnace for special steel and by other technical measures.

Notwithstanding the above measures the problem of higher rejection continued.

6.5. In the Audit Board Meeting with the Ministry on 10th December.1991 the management stated that the internal higher rejection was an indication of stringent inspection to ensure supply of goods of acceptable quality.

7. DELAY IN EXECUTION OF CONTRACTS

7.1 Delay in the execution of contracts was one of the major deficiencies of the company commented upon in the Audit Report (commercial) 1970, Part VII

7.2 During the year 1983-84 to 1990-91, the extent of delay in execution of indigenous contracts of value above Rs. 10 lakhs went upto twelve years in respect of HMBP, upto seven years in respect of HMTP and upto three years in FFP.

7.3 The delay occurred not only in indigenous contract but also in export contracts. The delay in this respect ranged from less than one year to four years vide details given in Annexures 5 A & 5 B.

7.4 A few typical cases of delay in execution of contracts are given below :-

7.5. Bokaro Steel Plant:- 4 million tonne Expansion Stage-II contract-I

7.5.1 Against the supply order of equipment weighing 39430 MT to be completed by March '76, equipment weighing only 33610 MT were supplied within the stipulated delivery schedule. The order was completed in November, 1987.

7.5.2 The customer deducted Rs. 266.86 lakhs towards liquidated damages for delay in supply of equipments. The customer did not agree to reimburse the increased statutory levy of Rs. 47.81 lakhs incurred beyond the scheduled delivery date.

7.5.3 No payment was made towards HEC's escalation claim of Rs. 350 lakhs as these were beyond contractual delivery dates.

7.5.4 The company incurred a loss of Rs. 1.71 crores even after Bokaro Steel Plant agreed to pay Rs. 0.89 crores in March, 1991 for excess equipment.

7.6. BHILAI STEEL PLANT: 4 million tonne Expansion.

7.6.1 The company supplied in time only 51071 tonnes against 63051 MT of equipment to be supplied by 31st

March 1981. The supplies were completed in June, 1988. Results of this delay were:

- Rs. 76.22 lakhs were paid as liquidated damages (upto March 1987).
- Total manufacturing cost of these equipments upto 31st March 1988 worked out to Rs 189.41 crores against which the company realised Rs. 172.42 crores resulting in a loss of Rs. 16.99 crores.

7.6.2 Loss of Rs. 87.45 lakhs on the supply of crushing equipment to Bokaro Steel Plant.

7.6.3 In July 1978 the company received an order from Bokaro Steel Limited (now Bokaro Steel Plant) for the supply of crushing equipment (466.700 MT) valued at Rs. 122.00 lakhs, subject to escalation clause, with delivery by May 1979 later revised to March 1981. The company started supplying equipment only from June 1980. The cumulative supply upto March 1984 was 444 MT.

7.6.4 The total manufacturing cost of the above equipment was Rs. 257.35 lakhs against the price of Rs. 169.90 lakhs including escalation during the extended period of delivery. This resulted in a loss of Rs. 87.45 lakhs in addition to liquidated damages of Rs. 3.90 lakhs paid to the customer for delays.

7.7 The table below indicates the unexecuted work orders:

Table 6
(Rs in crores)

Year	Unexecuted orders at the end of the year
1985-86	509.80
1986-87	444.28
1987-88	330.05
1988-89	374.66
1989-90	392.18
1990-91	658.30

7.8 Out of the 349 work orders executed during 1990-91 only 74 were completed by the scheduled delivery date;

134 were delayed by a period upto 6 months, 48 were delayed by a period upto 1 year and 93 orders were delayed by more than 1 year. Management stated (December 1991) during discussion on the review that sometimes unrealistic delivery schedules were accepted taking into account the unrealistic project schedules of customers. It may however, be noted that the prices were agreed upon as if the schedules were realistic.

7.9 The value of work orders cancelled due to delay in execution of the orders during the period 1983-84 to 1990-91 was Rs.896.76 lakhs.(The details of such work orders are given in Annexure 6).

7.10 The Management has attributed the following reasons for delay in execution:

- Delay in receipt of inputs from FFP, a sister unit of the plant and also outside sources
- Rejection of castings and forgings after poor machining necessitating fresh procurement
- Unbalanced loading of different load centres
- Shortage of energy
- Customer's own delays
- Shortage of funds
- Low labour productivity
- Underutilisation of plant and machinery

8.Utilisation of Men and Machinery

8.1 Since inception there have been excessive idle labour hours for direct workers in the three plants of the company. Direct workers are those who work directly on jobs, like welding, assembling. (Workers operating machines are included in machining costs). Idle hours varied from 31.5% to 41.6% in FFP, 24.04% to 28.55% in HMBP and 8.86% to 31.18% in HMTP as shown below :-

Table 7

(Figures in lakhs)

Year	Total available hours			Idle labour hours			Percentage of Idle hours to available hours		
	FFP	HMBP	HMTP	FFP	HMBP	HMTP	FFP	HMBP	HMTP
1983-84	20.63	29.88	15.64	7.3	38.01	2.38	35.53	26.81	15.22
1984-85	13.46	27.61	14.34	5.5	47.74	1.92	41.16	28.03	13.39
1985-86	12.68	35.73	14.78	5.2	89.82	2.01	41.64	27.48	13.60
1986-87	12.98	35.81	14.47	5.3	49.58	1.43	41.14	26.75	9.88
1987-88	9.96	25.25	11.60	3.1	46.07	1.03	31.53	24.04	8.88
1988-89	14.00	35.01	14.28	4.9	08.80	4.01	35.00	25.14	28.08
1989-90	12.73	34.08	13.93	4.4	28.88	4.09	34.72	26.06	29.36
1990-91	13.62	34.22	14.24	4.9	69.77	4.44	36.42	28.55	31.18

8.2 No norms for labour productivity have been fixed by the company. However, targets of production per direct worker have been fixed by the company every year for each discipline. Such targets and actual production in the last eight years ending 31st March 1991 are given below:-

Table 8

(In MT)

Year	Average target of production per worker		Average Actual production per worker		Percentage of Actual production to target	
	FFP	HMBP	FFP	HMBP	FFP	HMBP
1983-84	45.35	10.30	25.28	8.70	55.74	84.47
1984-85	39.90	8.40	27.15	5.80	68.05	69.05
1985-86	51.72	12.70	40.18	7.90	77.68	62.20
1986-87	52.06	11.50	42.20	10.04	81.06	87.30
1987-88	52.00	10.40	34.57	8.80	66.48	84.61
1988-89	47.95	12.40	46.71	8.52	97.41	68.71
1989-90	52.23	9.75	40.21	6.86	76.99	70.36
1990-91	51.09	13.10	32.25	6.26	63.12	47.79

8.3 Various incentive schemes have been in operation for improving labour productivity. Yearwise payments under these schemes during the period from 1983-84 to 1990-91 have been as follow :-

Year	Amount (Rs. in lakhs)
1983-84	112.71
1984-85	107.21
1985-86	103.87
1986-87	107.82
1987-88	94.99
1988-89	135.68
1989-90	109.69
1990-91	90.72

8.4. Utilisation of furnaces/machines in the G.I. foundry and steel foundry of FFP have been about 14% and 21% respectively. In the forge shop average utilisation of presses ranged from 4% to 38% as indicated below :-

Table 9

Percentage Utilisation of presses

Press	83-84	84-85	85-86	86-87	87-88	88-89	89-90	90-91
6000T	24	21	25	34	31	32	32	26
2650T	16	12	Capital Repair	5	17	29	21	13
1650T	12	17	33	31	38	12	4	10
1000T	13	12	30	33	38	16	12	6
Average	16	16	29	24	29	21	16	13

8.5 Utilisation of machines in the machine shop of FFP ranged between 32 to 58 percent, in HMBP 59 to 67 percent and in HMTP 57 to 72 percent of available hours as indicated below:-

Table 10

(Figures in lakh of hours)

Year	Available machine hours			Utilised machine hours			Percentage of utilisation		
	FFP	HMBP	HMTP	FFP	HMBP	HMTP	FFP	HMBP	HMTP
1983-84	4.70	16.97	11.51	1.53	10.90	6.62	32.55	64.23	57.52
1984-85	4.29	15.80	10.72	1.77	10.12	6.49	41.26	64.05	60.54
1985-86	5.15	18.70	10.82	2.11	11.12	7.17	40.97	59.46	66.27
1986-87	5.24	18.08	10.82	2.04	10.84	7.81	38.93	59.96	72.18
1987-88	4.04	14.56	8.75	2.06	9.12	6.20	51.00	62.64	70.86
1988-89	5.09	17.84	10.68	2.91	11.01	7.54	57.17	61.72	70.60
1989-90	4.96	16.00	10.46	2.90	9.81	7.28	58.47	61.31	69.60
1990-91	5.47	19.95	10.83	3.15	13.38	7.52	57.59	67.07	69.44

8.6. Poor Plant Maintenance

The main reason causing high percentage of idle time of labour and machines has been breakdown of plant and machinery as may be seen from the following :-

Table 11

Y e a r	Percentage of idle time due to breakdown					
	<u>FFP</u>		<u>HMBP</u>		<u>HMTP</u>	
	Labour	Machine	Labour	Machine	labour	Machine
1983-84	22	N.A.	26	33	30	14
1984-85	26	N.A.	28	38	26	12
1985-86	32	N.A.	27	31	31	17
1986-87	34	N.A.	25	30	27	13
1987-88	32	N.A.	25	32	32	13
1988-89	19	N.A.	24	29	33	15
1989-90	20	N.A.	24	25	33	15
1990-91	20	N.A.	26	34	29	12

Note:- For details please see Annexures 7 A & 7 B.

8.7 Some machines procured at a considerable cost have remained idle since their procurement/installation. A few examples are:-

8.7.1 Seven numbers of spraying chambers costing Rs. 59.83 lakhs procured in mid sixties and installed in HMBP were subsequently declared surplus and remained idle.

8.7.2 H. Brooching Machine No. 1126, upright Drilling Machine No. 1135, 1136 and 1150 copying lathe (2 Nos.) turret lathe (3 Nos.), auto lathe, facing centering, thread drilling machines and cantilever mainlining machine valuing Rs. 7.74 lakh remained idle since their installation.

9. MANPOWER ANALYSIS

9.1.1 The actual manpower of the three plants vis-a-vis the manpower envisaged in the DPR has been as follows:

Table 12

Manpower	FFP	HMBP	HMTF	Total
As per DPR	7926	5889	1840	15655
Actuals as on				
31-3-84	8198	7269	1691	17158
31-3-85	8069	7130	1677	16876
31-3-86	7973	7012	1662	16647
31-3-87	7897	6930	1649	16476
31-3-88	7740	7116	1635	16491
31-3-89	7526	6977	1612	16115
31-3-90	7472	6744	1628	15844
31-3-91	7297	6655	1626	15578

9.1.2 The above figures do not include the following manpower:

As on	Township & Medical	Head quarters	Project Division	Total
31-3-84	1746	2193	-	3939
31-3-91	1497	1592	157	3246

9.2.1 The corporation reassessed its rated capacity in 1980 and reduced it substantially. No action has however been taken to reassess the appropriate manpower for the reduced capacity. The Management stated (July 1988) that due to disturbed industrial relation the manpower requirement could not be worked out with reference to capacity utilised but recruitment has been stopped for the last three years except for critical areas.

9.2.2 With a view to reduce manpower, a voluntary retirement scheme was introduced in 1978. It was again operated in August 1988, with Government approval. The Corporation has requested the Government for providing non-plan budgetary support on soft terms to finance the scheme initially for 350 number of employees.

9.2.3 Ministry in its reply to the Review has indicated the following steps taken by the corporation to reduce surplus/redundant manpower :-

"(a) Induction of employees has been practically stopped. Restrictions have been imposed on creation of posts except in cases of utmost need in key result areas. Vacancies occurring on account of death, retirement, resignation, termination, etc are also not filled up except in critical areas. There has been reduction of 2063 employees in the total strength of HEC from 31.12.1980 our strength as on 31.12.1980 was 21433 against which as on 31.12.1988 , it is 19370. There has been a total reduction of Strength of 9.63 % in the strength during the above period.

(b) In the past there had been no systematic or scientific assessment of manpower. In recent years we have gone into this and are contemplating analysis of the manpower of HEC with a view to remove the imbalances in the organisation and reduction in manpower with the aim of optimum utilisation of human resources. This is keeping in view the need for introducing new products, changing technologies, modernisation, diversification etc. in order to train/retain/redeploy them for better utilisation".

9.2.4 The value of production in real terms has not increased as indicated below :-

Table 13

Year	RBI Wholesale index for Heavy Machine & Tools	Total Production (Rs. in crores)	Base Production 1983-84 at constant = 100	Production price (Rs in crores)
1983-84	108.98	157.90	100.00	157.90
1984-85	114.05	195.08	104.65	186.41
1985-86	125.46	210.65	115.12	182.98
1986-87	132.34	251.56	121.44	207.14
1987-88	132.30	280.82	121.40	231.32
1988-89	150.80	359.51	138.37	259.82
1989-90	166.20	368.47	152.51	241.61
1990-91	180.20	263.80	165.35	159.54

10. Material Management and Inventory Control.

10.1 The Purchase Manual of the Corporation requires calling of open tenders in case of non-proprietary items of the value of Rs. 1 lakh and above. A test check of purchase orders of the value of Rs. 2 lakhs and above placed during 1983-84 to 1989-90 has revealed that calling of open tenders was dispensed with in 576 out of 2114 cases. The Management stated (January 1987) that calling of limited tenders have been found most convenient for procuring items of proven quality from reputed and established manufacturers.

10.2.1 Material availability ranged from 19 months' consumption to 23.5 months' consumption. Yet there have been cases of production loss and idle labour and idle machinery for want of material input. This may partly account for less than planned production. The table below shows the comparative figures of materials available and materials consumed during last eight years ending 31st March 1991.

Table 14

(Rs. in crores)

	83-84	84-85	85-86	86-87	87-88	88-89	89-90	90-91
Materials available (opening balance plus receipt)	146.92	127.33	140.95	159.38	157.87	198.21	233.98	209.52
Consumption	85.52	64.82	83.83	94.20	91.26	112.40	149.94	133.26
Ratio	1.72:1	1.96:1	1.68:1	1.69:1	1.72:1	1.76:1	1.56:1	1.57:1

10.2.2 Stock of raw material and stores and spares including those in transit ranged from 19 months' consumption to 23.5 months' during 1985-86 to 1990-91.

10.2.3 The finished stock ranged from 47 days sales to 123 days sales during 1985-86 to 1990-91.

10.2.4 The table below indicates the position of inventory holdings as well as percentage of inventory to sales for last eight years ending 31st March, 1991 :-

Table 15

	(Rs. in crores)							
	83-84	84-85	85-86	86-87	87-88	88-89	89-90	90-91
A. Total Sales	140	191	186	244	271	320	320	234
B.1.Raw Material	49	50	47	55	57	76	73	68
2.Stores & spares	12	12	10	10	9	10	11	9
3.Materials & stores-in-transit	39	20	19	33	42	25	18	57
4.Loose tools & drawing instruments	7	8	8	8	8	8	10	11
Total.B.(1+2+3+4)	107	90	84	106	116	119	112	145
Percentage of B to sales	76	47	45	44	43	37	35	62
C.Semi Finished products	101	107	130	145	145	159	202	236
Percentage of C. to sales	72	56	70	59	54	50	63	101
D.Finished products.	32	30	31	25	34	60	65	61
Percentage of D to sales	23	16	17	10	12	19	20	26
E.Total (B+C+D)	240	227	245	276	295	338	379	442
Percentage of E to sales	171	119	132	113	109	106	118	188

Note: i) The inventory includes the value of work-in-progress in respect of projects undertaken on turnkey basis.

(ii) Sales include jobs done for internal use and interplant transfers.

10.3 Maximum, minimum and reordering level have been prescribed only for few items as on 31-3-87 is detailed below:-

Plant	Number of total items	Number of levels fixed
HMBP	23000	4000
FFP	31464	2475
HMTP	--	Regular consumable items only.

10.4 The following deficiencies have been noticed in inventory control system:-

(a) No shop level records are maintained for materials lying on shop floor. Value of materials lying at shop floor as on 31-3-91 amounted to Rs.920.38 lakhs

(b) A considerable portion of inventories was lying in-transit or under inspection. Value of such inventory as on 31-3-91 was Rs. 56.83 crores out of total inventory of Rs. 307.25 crores.

10.5 No norms for shortage/excesses of coal has been fixed by Management. During last eight years ending 31st March 1991, excess balances of coal valuing Rs. 381.92 lakhs and shortage of Rs.10.21 lakhs was adjusted in accounts.

10.6. Physical Verification

While shortages and excesses detected as a result of physical verification are adjusted against the bin card balance, no adjustment is carried out in the stores priced ledgers except in respect of coal, finished and semi finished products. The value of shortages and excesses in respect of raw materials, stores and spares etc. are put under suspense heads titled as "stock adjustment A/C (excess)" and stock adjustment A/C (shortages)" pending investigation. The balances appearing under these two heads for the last eight years ending 31st March 1991 were as follows:-

Table 16

(Rs. in crores)

As on	Balance under Stock Adjustment A/c (shortage)	stock adjust ment A/c (Excesses)
31-3-84	6.27	5.29
31-3-85	2.77	2.12
31-3-86	5.55	8.62
31-3-87	6.31	14.24
31-3-88	2.97	10.30
31-3-89	5.41	4.09
31-3-90	7.12	8.35
31-3-91	8.58	4.12

11. SALES MANAGEMENT

11.1 For sales management and pricing there are separate marketing divisions at plant as well as at corporate level. Since November 1983, a post of Director (Marketing) is in operation.

11.2 The marketing strategy formulated by the company in March 1984 stressed the need for updating of technology in certain areas and included (a) development of new items of machine tools (b) penetration in the coal sector in bigger way, (c) development and marketing of equipments and spares to non-soviet designed steel plants, (d) location of export market in West Asian and African countries, (e) increased after sales services and (f) intensification of market research activities with the formation of 'Business Development Groups' which would keep close liaison with giant public sector undertakings and organisations including atomic energy, ship building, railways, Planning Commission and other Government agencies.

11.3 Sales performance

11.3.1 The table below highlights actuals against budgeted sales for the last eight years ending 31st March, 1991 :-

Table 17

(Rs. in crores)

Year	FFP		HMBP		HMTP		HDQRS.		Total	
	Budget	Actual	Budget	Actual	Budget	Actual	Budget	Actual	Budget	Actual
1983-84	19	10	152	89	11	4	-	-	182	103
1984-85	17	12	165	113	12	6	16	23	210	154
1985-86	17	15	167	121	14	10	26	-	224	146
1986-87	19	15	171	172	18	7	27	-	235	194
1987-88	29	12	213	167	21	12	74	29	337	220
1988-89	33	28	216	210	28	23	77	-	354	261
1989-90	47	34	238	198	33	27	83	1	401	260
1990-91	46	31	243	112	66	32	98	7	453	182

Notes: Hqrs. Sales includes sale of Project Division.

11.3.2 The company has never been able to achieve the target of budgeted sales during the eight years.

11.3.3 Export Performance.

The table below indicates export orders received, actual exports and balance of unexecuted orders for the period 1983-84 to 1987-88.

Table 18

(Rs. in crores)

Y e a r	Export orders received	Actual Export	Balance orders
1983-84	-	12.09	32.89
1984-85	3.45	12.64	23.70
1985-86	11.95	9.50	26.15
1986-87	4.74	8.82	22.07
1987-88	1.30	5.47	17.90

11.4. Customers Composition

11.4.1 Company's customers are mostly Government Departments and Government undertakings as may be seen from the following table:

Table 19

(Rs. in crores)

Y e a r	Govt. Deptt./ public sector undertakings	Private Parties	Export	Total
1983-84	87	4	12	103
1984-85	139	3	12	154
1985-86	127	9	10	146
1986-87	182	3	9	194
1987-88	205	5	10	220

11.4.2 In spite of the fact that a large number of its customers belong to Government, the company has made large provision for bad and doubtful debts. Heavy amounts have been lying outstanding for long periods as may be seen from the following table.:-

Table 20

(Rs. in crores)

Year	Sales	Book Debts as on 31st March	Debts written off	Debt considered doubtful	Debt collection period (in months)
1983-84	103	56	-	9	6.52
1984-85	154	61	-	8	4.75
1985-86	146	52	2	10	4.27
1986-87	194	74	1	15	4.58
1987-88	220	121	1	18	6.60
1988-89	262	129	-	19	5.91
1989-90	260	151	-	13	6.97
1990-91	182	111	-	15	7.32

12 COSTING SYSTEM AND INTERNAL AUDIT:

12.1 As most of the products are job works; the company follows the system of job costing.

12.2 The existing costing system has the following components of cost:

- 1 Material cost (material directly used on jobs)
- 2 Direct Labour - workers directly employed on jobs like welding etc.
- 3 Conversion/machining cost (Cost of machining and wages of workers who operate machines)
- 4 Shop overheads.
- 5 General Overheads

12.3.1 The company has adopted the following utilisation criterion of machines:

HMBP	60.00%
HMTTP	62.50%
FFP	45.00%

12.3.2 The above criterion is based on actual performance. There is no standard costing against which to measure the actuals. The fact that targets are much higher than actuals shows that HEC is aware of low productivity. An exercise done by HMBP shows that 5 percent improvement in machine utilisation would reduce loss by Rs. 4.58 Crores in one year in this plant.

12.4 INTERNAL AUDIT

12.4.1 The Internal Audit section has been auditing 50% of selected units every year during the period from 1986-87 to 1988-89.

12.4.2 The salient features of its report were not brought to the notice of the Board of Directors during the period from 1983-84 to 1990-91.

12.4.3 The Statutory Auditors under Manufacturing and Other Companies (Auditor's Report) Order 1988 in terms of section 227 (4A) of the Companies Act, 1956 on the accounts of the company for the year 1990-91 has stated "The Internal Control Procedure is not commensurate with the size of corporation and nature of its business, with regard to purchase of stores, raw materials including components, plant and machinery, equipments and other assets and for the sale of goods".

13. FUTURE PROSPECTS

13.1.1 Government of India and HEC have been signing Memorandum of Understanding (MOU) from the year 1988-89. The system generally implies a policy of least interference in the working of the company by the Government. However, the special situation of HEC leads to frequent inter-action between Government and the Company for maintaining performance of major contracts. Government tries to make available input, supply order and finance, etc.

13.1.2 Government and the Company have both recognised the fact that it would not be possible to make the Company profitable in the immediate future. In the Memorandum of Understanding entered between the Company and the Government for 1991-92 the following performance indicators have been agreed upon.

PROPOSED CRITERION OF PERFORMANCE EVALUATION 1991-92.

Sl.No.	CRITERION	UNIT	WT	CRITERION VALUE				
				Excellent	Very good	Good	average	Poor
1.	STATIC OPERATIONAL EFFICINECY							
1.	Production	Rs/Crs	15	400.00	375.00	350.00	325.00	300.00
2.	Sales	Rs./Crs	15	275.00	260.00	245.00	230.00	215.00
3.	Net loss	Rs./Crs	30	56.00	63.00	66.00	69.00	72.00
4.	Inventory (No. of days of Prodn.)	Days	10	240	250	260	270	280
5.	Sundry Debtors (No. of days of sales)	Days	5	106	112	118	123	134
6.	Value added	Rs.	5	97500	93000	88000	84000	75000
11.	Order Booking	Rs./Crs.	10	452.00	430.00	408.00	386.00	364.00
III.	OTHER INDICATORS		10					

A consultant will be appointed by the Deptt. In consultation with DPE for which payment will be made by the PSE. The consultant will evaluate the performance of the enterprise on a five point scale taking into account various criteria which would cover customer satisfaction in respect of HEC.

13.1.3 During 1990-91 the performance of the Company was assessed as "Poor" when its net loss was Rs.99.51 crores.

13.2 During the review of HEC's performance the following salient features emerged :

13.2.1 It is HEC's view that the very low level of production as compared to installed capacity, even after taking into consideration re-assessed capacity, could be improved by additional investment and rectification of some other factors. These factors are surplus man-power resulting in extra over-heads which has to be cut down. The second factor was the poor work culture and unsatisfactory industrial relations which have to be improved for better result.

13.2.2 In Government's view it was essential to bring down over-heads and that until HEC turns around, losses will continue. Efforts will have to be concentrated on a mix of policies to reduce these losses. HEC's performance should not be judged only in terms of tonnage of production or in terms of bagging orders. Government has been carrying out detailed financial analysis; inter-industrial comparison within the private sector and public sector companies. This study has revealed that there is need for reducing over-heads on long term basis, better inventory control and reducing financial cost.

13.2.3 The Ministry agreed that additional investment alone is not the solution. Improved productivity, and timely performance of jobs are the keys to a better future.

14. OTHER TOPICS OF INTEREST

14.1 Township

Company's township has 11,601 quarters. Out of these, 179 quarters are under unauthorised occupation as on 31-3-1991. In addition, there are 5543 cases of unauthorised construction on the Company's land as per the survey conducted by the Management in March 1989. The Management stated that after verification of particulars of encroachment, action by lodging FIRs with police and filing cases under Public Premises Eviction Act, were in progress.

14.2 Loss of Rs. 148.58 lakhs

The Company took up for the first time the construction of Parichha Coal Handling Plant for Uttar Pradesh State Electricity Board (UPSEB) on turn-key basis at a contractual value of Rs. 902.63 lakhs. It agreed

that no adjustment in price shall be applicable for any variation between quantities estimated by HEC and the actual quantities if there was no change in the scope of work. During the course of execution of civil works the Company had to execute huge quantities over and above the quantities it estimated, involving extra expenditure of Rs. 148.58 lakhs. The claim of the Company was rejected by UPSEB on 30-12-1986 in view of the condition agreed to by the Company. Unrealistic estimates resulted in loss of Rs. 148.58 lakhs. Management stated (July 1988) that in order to get a good hold in the important coal sector the Company had no other option except to agree to condition stipulated in the meeting held at Lucknow on 6th and 7th March 1980.

P.K. Sarker

(P.K. SARKAR)
DEPUTY COMPTROLLER AND AUDITOR GENERAL
(COMMERCIAL)-CUM-CHAIRMAN, AUDIT BOARD

NEW DELHI
The

18 JUN 1992

COUNTERSIGNED

C.G. Somiah

(C.G. SOMIAH)
COMPTROLLER AND AUDITOR GENERAL OF INDIA

NEW DELHI
The

18 JUN 1992

Sl. No.	Particulars	Amount
1	Director (General)	11.08.1987
2	Director (General)	01.12.1984
3	Director (General)	01.02.1987
4	Director (General)	01.02.1987
5	Director (General)	08.04.1984
6	Director (General)	08.04.1984
7	Director (General)	08.04.1984
8	Director (General)	08.04.1984
9	Director (General)	08.04.1984
10	Director (General)	08.04.1984
11	Director (General)	08.04.1984
12	Director (General)	08.04.1984
13	Director (General)	08.04.1984
14	Director (General)	08.04.1984
15	Director (General)	08.04.1984
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27	Director (General)	08.04.1984
28	Director (General)	08.04.1984
29	Director (General)	08.04.1984
30	Director (General)	08.04.1984
31	Director (General)	08.04.1984
32	Director (General)	08.04.1984
33	Director (General)	08.04.1984
34	Director (General)	08.04.1984
35	Director (General)	08.04.1984
36	Director (General)	08.04.1984
37	Director (General)	08.04.1984
38	Director (General)	08.04.1984
39	Director (General)	08.04.1984
40	Director (General)	08.04.1984
41	Director (General)	08.04.1984
42	Director (General)	08.04.1984
43	Director (General)	08.04.1984
44	Director (General)	08.04.1984
45	Director (General)	08.04.1984
46	Director (General)	08.04.1984
47	Director (General)	08.04.1984
48	Director (General)	08.04.1984
49	Director (General)	08.04.1984
50	Director (General)	08.04.1984

ANNEXURE-1

(Referred to in Paragraph 2)

VACANCY POSITION OF FULL TIME DIRECTORS

Sl. No.	Posts	Period	vacancy in months
1.	Chairman-cum-Managing Director	(i) 23.11.1982 to 26.07.1983	8 months
		(ii) 10.08.1985 to 30.09.1985	2 months
		(iii) 27.09.1988 to 15.02.1989	5 months
2.	Director (Finance)	01.04.1986 to 31.08.1987	17 months
3.	Director (Personnel)	01.12.1984 to 01.03.1987	27 months
4.	Director (HMBP)	(i) 16.12.1983 to 08.04.1984	4 months
		(ii) 08.04.1986 to 05.05.1988	25 months
5.	Director (FFP)	28.05.1983 to 27.11.1983	6 months

ANNEXURE-2

Statement showing the capacity utilisation of various service units.

(Referred to in paragraph 5.3)

Sl.No.	Name of Unit	Unit capacity	Rated capacity	Actual production					percentage of utilisation				
				1983-84	84-85	85-86	86-87	87-88	1983-84	84-85	85-86	86-87	87-88
1.	Producer gas Plant	1000M ³	518400	254000	243954	280595	246762	176470	49.00	47.06	54.13	47.60	34.04
2.	Boiler House	MT	172800	90618	106421	135761	127943	49680	52.44	61.59	78.57	74.04	28.75
3.	Acetylene Plant	NM ³	648000	56817	50811	54244	50809	41798	8.77	7.84	8.37	7.84	6.45
4.	Oxygen Plant	NM ³	3456000	1659335	1907981	2020978	2603018	2067077	48.01	55.21	58.47	75.32	59.81
5.	Compressor House	NM ³ ONM ³	1000 331200	153779	160495	163152	160625	118447	46.43	48.46	49.26	48.50	35.76

ANNEXURE-3.

(Referred to in paragraph 5.9)

BURNING LOSS AND ITS PERCENTAGE TO MATERIAL INPUT

(Figures in M.T.)

Year	Basic Material Input		Output as per D.P.R.		Actual output		Actual Burning loss		Excess Burning loss over D.P.R. norms		Value of Excess Burning loss (Rs. in lakhs)		Percentage of Actual Burning to Material input	
	G.I. foundry	steel	G.I. foundry	steel	G.I. foundry	steel	G.I. foundry	steel	G.I. foundry	steel	G.I. foundry	steel	G.I. foundry	steel
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1985-86	10538	23676	9985	21900	9754	21871	784	1805	231	29	1.38	0.68	7.44	7.62
1986-87	10087	26772	9510	24764	9328	24778	759	1994	182	(+)14	1.37	(+)0.40	7.52	7.45
1987-88	8267	23685	7833	21909	7596	21882	671	1803	237	27	2.53	0.69	8.12	7.61
1988-89	9537	32696	9060	30407	8960	30161	577	2535	100	246	1.07	6.29	6.05	7.75
1989-90	5470	32287	5197	30027	5169	28038	301	4249	28	1989	0.30	50.83	5.50	13.16
1990-91	4876	24257	4632	22559	4681	21523	195	2734	(+)49	1036	(+)0.52	26.48	4.0	11.27
									729	3313	6.13	84.57		
									4042		90.70			

Note:Rate of 1987-88 have been taken for calculating the value of loss for subsequent years also.

ANNEXURE-4

(Referred to Paragraph 5.10)

EXCESS GENERATION OF SCRAP AND ITS PERCENTAGE TO MATERIAL INPUT

(Figures in MT)

Year	Material input	Output as per D.P.R. norms	Actual output	Actual generation of scrap	Excess generation of scrap	Value of excess generation (Rs. in lakhs)	Percentage of actual generation of scrap to material input
1	2	3	4	5	6	7	
1983-84	9412	6965	5967	3445	998	3.27	36.60
1984-85	9347	6917	6074	3273	843	2.77	35.02
1985-86	10274	7603	7035	3239	568	1.85	31.53
1986-87	10401	7697	6933	3468	764	2.51	33.34
1987-88	8275	6124	5418	2857	705	2.31	34.53
1988-89	10104	7477	7170	2934	307	1.01	29.04
1989-90	6428	4757	4331	2097	426	1.40	32.62
1990-91	5588	4135	3836	1752	299	0.98	31.35
					4910	16.10	

ANNEXURE 5A
(Referred to in paragraph 7.3)

**STATEMENT SHOWING DELAY IN EXECUTION OF EXPORT ORDERS TO
USSR**

Sl. No	Contract No & date	Description of equipments	Delivery schedule as per contract	Supplies completed in	Period of delay
1	2	3	4	5	6
1.	19/03/15501/223 dt. 14.6.80	Coke oven items, crushers & misc. equipments	Dec'82	June'87	4½ years
2.	19/03/15501/223. dt. 14/6/80	Coke oven & misc item Forged rolls	1984 1985	Dec'88 July'88	4 years
3.	Addendum-1 dt. 23.10.80	Roll Mill Houl- age winches etc	1984/ 1986	July'87	1 year
4.	Addendum-3 dt. 22.09.81	Houlage winches and crushers	1986	March'87	1 year
5.	Addendum-4 dt.22.09.81	Coke oven items	1985	July'87	2 years
6.	Addendum-5 dt. 12.12.81	do-	1985	Dec'86	1 year
7.	Addendum-6 dt. 12.12.81	Cone crushers & haulage winches	1987	Dec'88	1 year
8.	Addendum-7 dt. 12.12.81	Mill head custody	1984	March'85	1 year
9.	Addendum-8 dt. 12.12.81	Forged rolls	1984/ 1985	Jan'88	3 years
10.	4502040300 dt. 28.4.84	Haulage winches rod mill, mill head casting	1985	April'86	1 year
11.	Addendum-3 14.10.85	Haulage winches	1986	March'87	1 year
12.	Addendum-4 dt. 14.10.85	-do-	June'87	23 nos. Dec'88	1½ years
13.	Addendum-5 dt. 14.10.85	(i)Coke oven items (ii)Forged rolls	1986 (ii)Dec'87	(i)Nov'89 1 year	3 years
14.	Addendum-6 dt. 3.8.86	Coke oven items	1987	Nov'89	2 years
15.	Addendum-7 dt. 03.8.86	Forged rolls	1987	Dec'88	1 year
16.	Addendum-8 dt. 3.8.86	Haulage winches	1987	Nov'89	2 years

ANNEXURE-5 B

(Referred to in paragraph 7.3)

STATEMENT SHOWING DELAY IN EXECUTION OF INDIGENOUS ORDERS

Unit	YEAR	No. of work orders delayed by:							
		Total No. of work orders of work completed in time	No. of work orders delayed	upto six months	six months to 1 year	1 to 2 years	2 to 3 years	over 3 years	
HMBP									
	1987-88	N.A.	N.A.	165	-	108	26	9	22
	1988-89	N.A.	N.A.	170	-	143	19	3	5
	1989-90	N.A.	N.A.	70	-	34	27	3	6
	1990-91	N.A.	N.A.	40	-	31	4	5	-
FFP									
	1990-91	78	2	76	42	19	-	15	-
HMTF									
	1983-84 to								
	1987-88	59	33	26	-	19	5	2	-
	1988-89	19	3	16	13	-	1	-	2
	1989-90	21	3	18	13	1	2	-	2
	1990-91	26	4	22	19	-	2	-	1

ANNEXURE-6**(Referred to in paragraph 7.9.)****COST BOOKED ON CANCELLED WORK ORDERS****(Rupees in lakhs)**

Year	No. of work orders cancelled	Material cost	Direct Labour	Conversion cost	Shop overhead	General overhead	Total
1983-84	57	32.25	0.53	0.62	1.65	4.26	39.31
1984-85	18	0.37	0.04	-	0.01	0.02	0.44
1985-86	6	2.52	0.15	0.18	0.72	1.58	5.15
1986-87	76	406.90	6.75	11.83	42.82	97.71	566.01
1987-88	146	18.88	0.48	0.45	1.90	4.95	26.66
1988-89	82	58.35	2.23	2.99	12.09	23.46	99.12
1989-90	60	29.15	2.40	1.23	11.98	15.71	60.47
1990-91	43	71.88	1.77	2.66	13.74	9.55	99.60
Total	488	620.30	14.35	19.96	84.91	157.24	896.76

ANNEXURE-7A

(Referred to in Paragraph-8.6)

IDLE MACHINE HOURS OF HEC DUE TO BREAKDOWN OF MACHINES

(Figures in lakhs)

Year	Total Idle Hours		Idle hours due to Breakdown of Machine.		Percentage of Idle hours due to breakdown to total Idle Hours	
	<u>HMBP</u>	<u>HMTP</u>	<u>HMBP</u>	<u>HMTP</u>	<u>HMBP</u>	<u>HMTP</u>
1983-84	6.07	4.89	2.01	0.71	34	14
1984-85	5.68	4.23	2.14	0.50	38	12
1985-86	7.58	3.65	2.39	0.63	31	17
1986-87	7.24	3.01	2.18	0.39	30	13
1987-88	5.44	2.55	1.73	0.33	32	13
1988-89	6.83	3.14	1.96	0.47	29	15
1989-90	6.19	3.17	1.58	0.48	25	15
1990-91	6.57	3.31	2.23	0.41	34	12

Note: Information is not available for FFP.

ANNEXURE 7B

(Referred to in paragraph 8.6)

IDLE LABOUR HOURS OF HEC DUE TO BREAKDOWN OF MACHINES

(Figures in lakhs)

Year	Total Idle Hours			Idle labour hours due to Breakdown of Machine.			Percentage of Idle labour hours due to breakdown to total Idle Hours		
	FFP	HMBP	HMTP	FFP	HMBP	HMTP	FFP	HMBP	HMTP
1983-84	7.33	8.01	2.38	1.60	2.07	0.71	22	26	30
1984-85	5.54	7.75	1.92	1.46	2.19	0.50	26	28	26
1985-86	5.16	9.81	2.01	1.67	2.70	0.63	32	27	31
1986-87	5.55	9.56	1.43	1.88	2.37	0.39	34	25	27
1987-88	3.14	6.49	1.03	1.00	1.62	0.33	32	25	32
1988-89	4.90	8.80	1.44	0.96	2.14	0.47	19	24	33
1989-90	4.42	8.88	1.44	0.90	2.10	0.48	20	24	33
1990-91	4.96	9.77	1.43	0.98	2.58	0.41	20	26	29

ERRATA

Page No.	Para No.	Line No. of the Para/Item No.etc.	For	Read
vii)	iii)	3rd line	as on	during the 8 years prior to
viii)	v)	3rd line from below	45 %	52 %
ix)	x)	5th line	8.86% to 31.18 %	8.86% to 15.22%
4.	4.1.2	13th line	31.3.88	31.3.91
5.	4.2	Table 1: Liabilities Item No. c) Borrowings from (i) Govt. of India		
		Loan 1985-86	314.00	317.53
		1990-91	203.19	202.80
		Unpaid Interest		
		1985-86	43.56	40.03
		1990-91	8.15	8.54
6.	4.3	2nd line	eight	six
6.	4.3	Table 2-item No.8-Interest payable to Government:-		
		Cl.No.2-1985-86	43.56	40.03
		Cl.No.7-1990-91	8.15	8.54
6.	4.3	Table No.2-item No.5- Expenditure:-		
		Cl.No.2-1985-86	232.53	236.06
		Cl.No.7-1990-91	348.89	348.50
9.	5.1(a)	1st Line	M.F.	N.F.
9.	5.2	Table-Row No.1		
		Cl.No.2	1,74,540	1,34,540
9.	5.2	Table -Row No.1		
		Cl.No.3	51,215	44,580
9.	5.2	Table -Row No.1		
		Cl.No.5	38	43
9.	5.2	2nd Line from the below:	45%	52%
10.	5.4.1	Table 4 Cl. Nos.2 & 4	Cl.No.2 Cl.No.4	Cl.No.2 Cl.No.4
		1983-84	51,168 34	26,348 67
		1984-85	42,655 42	23,730 75
		1985-86	36,756 55	23,698 85
		1986-87	33,309 64	21,890 98
		1987-88	41,564 45	23,209 80
		1988-89	37,625 61	20,360 113
		1989-90	39,755 52	21,450 97
		1990-91	41,190 36	23,080 64

10.	5.4.1	Table 4 Cl. No.8-Target of production (HMTP) 1988-89 1990-91	1425 1991	1560 2190
10.	5.4.1	Table 4 Cl. No.9-Actual production (HMTP) 1990-91	1099	1006
10.	5.4.1	Table 4 Cl. No.10-Perce- ntage of actual to target (HMTP) 1988-89 1990-91	87 55	79 46
15.	7.5.4	Line No.1	1.71	0.28
18.	8.1	Line No.7	8.86 % to 31.18%	8.88% to 15.22 %
18.	8.1	Table No.7 Cl.Nos.5. & 6	-	1st digit in Cl. No.6 may be read with last digit in Cl.No.5 in the respective rows.For example 7.3 may be read as 7.33 in Cl. No.5 and 38.01 may be read as 8.01 in Cl.No.6.
18.	8.1	Table No.7 Cl.Nos. 7 & 10.	Cl.No.7 Cl.No.10	Cl.No.7 Cl.No.10
		1988-89	4.01	28.08
		1989-90	4.09	29.36
		1990-91	4.44	31.18
			1.44	10.08
			1.44	10.34
			1.43	10.04
20.	8.4	Table No.9 Average Line No.6.		
		1986-87	24	26
		1987-88	29	31
		1988-89	21	22
		1989-90	16	17
		1990-91	13	14
21.	8.7.2	Line No.5	mainlining	milling
27.	10.3	1st Line 2nd Line	Level is	Levels as
34.	13.1.1	7th line	maintaining	monitoring
34.	13.1.2	1st Line	recognised	recognised
42.	Annexure 5.A	Item No.8 Cl.No.3	custody	casting
42.	Annexure 5.A	Item No.12 Cl.No.5	23 Nos.	28 Nos.
42.	Annexure 5.A	Item No.13 Cl.No.4		
			a)Word 'Dec.87' may be read under Col.No.5	
			b)Word 'one year'under Cl.No.5 may be read under Cl.No.6	
45.	Annexure 7.A	Cl.No.6 1983-84	34	33