REPORT OF THE COMPTROLLER & AUDITOR GENERAL OF
INDIA : UNION GOVT (COMMERCIAL) PART X 1982

REPORT

OF THE

COMPTROLLER AND AUDITOR GENERAL OF INDIA

UNION GOVERNMENT (COMMERCIAL)

1982

PART X

MINING AND ALLIED MACHINERY CORPORATION LIMITED

23
8/13

ERRATA

Page	*Line*	*For*	*Read*
9	4th line from bottom	on	in
10	14th line from top	uoto	upto
15	15th line from top	tor	for
18	8th line from top	th	the
25	21st line from top	ranged	range
26	2nd line from bottom	bought out	bought-out
27	statement (S.No. 4 column 5)	2551.70	551.70
43	1st line from top	Drofit	Profit
44	13th line from top	limited	Limited
44	22nd line from top	qaulity	quality
46	16th line from top	Drices	prices
54	13th line from top	Iuspection	Inspection
57	7th line from top	equipments	equipment
57	2nd line and third from bottom	remove ,, ,,	
61	Statement (S.No. 13 column 11)	62.66	62.86
65	After 6th line from top add words		"Actual Strength"
70	Table (item 2)	33-45%	35-45%
78	Table (Debt equity ratio—1977-78)	0.71 : 1	0.70 : 1
79	2nd line from below	exiting	existing
88	last line	298.36	298.06
90	Table (last column—6th line from below)	Rs. 403	Rs. 403.46
93	22nd line from top	it	at
95	Table 1980-81	Store	Stores
114	8th line from top	cculd	could
114	2nd line from bottom	(April 1983) to	(April 1983) were due to
123	3rd line from top	Exports	Export
130	Column 1 [S. No. 7(b)]	Suports	Supports
148	S.No. 3 Column 2	Steel costing	Steel casting

10 C&AG/83

REPORT

OF THE

COMPTROLLER AND AUDITOR GENERAL OF INDIA

UNION GOVERNMENT (COMMERCIAL)

1982

PART X

MINING AND ALLIED MACHINERY CORPORATION LIMITED

TABLE OF CONTENTS

PREFATORY REMARKS

A reference is invited to paragraph 5 of the Prefatory Remarks in Part-I of the Report of the Comptroller and Auditor General of India—Union Government (Commercial), 1982 wherein it was mentioned that the appraisal report of Mining and Allied Machinery Corporation Limited selected by the Audit Board for comprehensive appraisal was under finalisation. tion.

2. This part contains results of the appraisal undertaken by the Audit Board of the working of the Mining and Allied Machinery Corporation Limited. In this case the Audit Board consisted of the following members :—

(1) Shri P. P. Gangadharan—Chairman, Audit Board & Ex-officio, Additional Deputy Comptroller and Auditor General (Commercial) from 1st March 1980.

(2) Shri P. P. Dhir—Chairman, Audit Board and Ex-official, Additional Deputy Comptroller and Auditor General (Commercial) from 1st February 1982 to 9th June, 1982.

(3) Shri R. C. Suri—Chairman, Audit Board and Ex-officio, Additional Deputy Comptroller and Auditor General (Commercial) with effect from 10th June 1982.

(4) Shri V. Doraiswamy—Member Audit Board and Ex-officio Director of Commercial Audit (Coal), Calcutta upto 29th May 1982.

(5) Shri N. Krishnan Kutty, Member, Audit Board and Ex-officio, Director of Commercial Audit (Coal), Calcutta from 18th June 1982.

(6) Shri A. P. Sinha, Member, Audit Board and Ex-officio, Director of Commercial Audit, Calcutta*.

(7) Shri J. G. Kumaramangalam, Formerly Managing Director, Bharat Process and Mechanical Engineers Limited—Part-time Member.

(8) Shri K. L. Sehgal, Formerly Adviser (Production), Bureau of Public Enterprises—Part-time Member**.

3. After consideration of the Report by the Audit Board at its meeting held on 16th and 17th November 1981, the Report was issued to the Ministry of Industry (Department of Heavy Industry) on 31st August 1982 for acceptance of the facts and comments, if any. Replies of the Ministry were received in January 1983.

4. The meeting of the Audit Board with the representatives of the Ministry was held on 29th January 1983.

5. This Report was finalised by the Audit Board after taking into account :

(a) the replies of the Ministry furnished in January 1983.

(b) the results of discussions held on 29th January 1983 with the representatives of the Ministry and the Company; and

(c) the additional information furnished by the Ministry in April 1983.

6. The Comptroller and Auditor General of India wishes to place on record his appreciation of work done by the Audit Board and acknowldeges with thanks the contribution, in particular, of the members who are not officers of the Indian Audit and Accounts Department.

---

*He did not attend the meeting of the Audit Board with the representatives of the Ministry held on 29-1-1983.

**He was appointed Part-time member of the Audit Board on 16th June 1982.

1. Introduction

1.01 The Mining and Allied Machinery Corporation Limited, Durgapur (hereinafter referred to as the Company) was formed on 1st April 1965 to take over the Coal Mining Machinery Plant from the Heavy Engineering Corporation Limited, Ranchi.

The activities of the Company were last reviewed in Section II of the Audit Report (Commercial), 1969 of the Comptroller Auditor General of India. The working of the Company based, *inter alia,* on the material contained in this Auditor Report was examined by the Committee on Public Undertakings *vide* its 65th report (Fourth Lok Sabha—April 1970). In view of the continuous losses incurred by the Company, the Committee in paragraph 11.13 of this Report, had concluded as follows :—

> "..................................Committee have come to the conclusion that it would be wise if this undertaking is wound up to avoid further drain on the public exchequer. The Company has already exhausted the paid up Capital and is in the process of consuming the loans and credits taken by it."

The above recommendation was considered by Government and the Committee was informed (November 1971) by Government that it would not be prudent to wind up the Company, *inter alia,* on the following considerations :

— Winding up of the Company and consequent unemployment of about 6500 persons employed by it, will have serious repercussions on the employment situation and industrial climate of Durgapur and West Bengal.

— The machinery and equipment installed in the Company were very good and if it could be properly used, there was no reason why the company should continue to incur losses.

— The Company was producing sophisticated equipment and had recently taken up production of a number of new items which would have had to be imported at considerable cost from foreign countries. Winding up of the Company would, therefore, result in a serious set back to these important projects.

— It had been decided to re-organise the capital structure and attention was being paid to strengthen the management of the Company. There was a perceptible improvement in production and performance of the Company in the last 12 months and the trend was likely to be maintained and accentuated in future.

In its Action Taken Report (24th Report of 5th Lok Sabha 1972-73), the Committee took note of the Government decision not to wind up the Company but stressed that Government should appoint an Expert Committee to examine in detail the diversification scheme and the entire future course of development of the project on a sound basis so that past mistakes of running the project on adhocism and guess estimates were avoided. It was further recommended by the Committee that Government should carefully examine the observations/recommendations made by the Fuel Policy Committee in regard to the manufacture of mining equipment and the machinery in the country with a view to drawing up a realistic production programme. The Ministry of Industry (Department of Heavy Industry) stated (January 1983) that the following decision was taken by Government in 1973-74 on the aforesaid recommendation :—

> "In view of the nationalisation of coal industry recently, the Company has ambitious programme for manufacture of mining equipment during next 5 years, and they have sufficient orders for mining equipment for next 5 years to be carried out. The programme of further diversification has been abandoned by the Company. In view of this, it is not considered

necessary for any Expert Committee to examine in details any further diversification scheme."

1.02 The present Report covers a detailed analysis of the working of the Company during the last six years ending 1981-82 in particular and a general outline for the earlier period.

2. Objectives of the Undertaking

The main objectives of the Company as per its Memorandum of Association are :—

(i) To carry on in India and elsewhere the business of manufacturing (a) machinery and equipment for mining of coal, such as, coal cutters, loaders, conveyors, haulages, locomotives, winders, main axial fans, booster fans, pumps, ball mills, sand pumps, automatic cage, etc. including spare parts thereof whether for open cast or underground working; and other allied items including coal handling and coal washing plants as well as general engineering machinery and structurals (b) rough steel castings, ferrous and non-ferrous castings and forgings and stampings.

(ii) To act as consulting engineers and to carry on the business of machining, mechanical, metallurgical, mining, chemical, electrical and civil engineering including in particular the work of setting, erecting, installing, operating, maintaining and repairing all types of plant, machinery and equipment.

Consequent on the acceptance of the recommendations made by the Administrative Reforms Commission, the Ministry of Finance, Bureau of Public Enterprises in their office Memorandum dated 3rd November, 1970 requested the Ministry to initiate action to lay down the objectives and obligations, both financial and economic, of the individual public sector enterprises under their administrative control. The objectives and obligations of the Company in terms of the above office Memorandum have not been laid down so far (March 1983). The

Ministry stated (January 1983) that the Company had framed a "statement of purposes" in January 1973. The "Statement of purposes", however, does not cover the objectives and obligations in terms of the office Memorandum referred to above.

Pursuant to recommendation made by the Committee on Public Undertakings in their 38th Report (Sixth Lok Sabha 1978-79), the Bureau of Public Enterprises requested the Ministry of Industry etc. to advise the public enterprises under their control to spell out their micro objectives consistent with the broad objectives spelt out in the Industrial Policy Statement of December 1977 to facilitate realistic and meaningful evaluation by Parliamentary Committee and Government. The Company formulated its micro-objectives and submitted to the Bureau of Public Enterprises in June 1979 for enabling them to apprise the Committee on Public Undertakings of the progress made in this regard. The details of the micro-objectives and action taken for their fulfilment, as intimated by the Management in February 1982, are detailed in Annexure I. In this connection, it may be mentioned that the Company has not fixed any time frame for fulfilment of these objectives.

3. **Capital Structure and working results**

3.01 *Capital Structure*

(a) The Company was formed with an authorised capital of Rs. 20 crores which was raised to Rs. 43.80 crores with effect from 1st April, 1975 by converting the outstanding loan of Rs. 23.80 crores taken from the Government of India into equity shares. In March 1982, the authorised share capital was increased to Rs. 53 crores. The paid-up capital of the Company as at 31st March 1982 was Rs. 44.85 crores.

(b) In addition to equity, Government granted loans to the Company to meet the requirements of capital expenditure and working capital. The details of loans received from Government from time to time and the balances outstanding at the end of each year for the eight years ending 31st March 1982 were as follows :—

(Rs. in lakhs)

Year	Opening balance	Loan obtained during the year	Total loan	Interest accrued	Interest accrued but not due	Balance out-standing
1	2	3	4	5	6	7
Up to						
31-3-75	4428.61	—	4428.61	389.73	39.04	4857.38
1975-76	2048.61@	30.00	2078.61	459.36	84.93	2622.90
1976-77	2078.61	20.00	2098.61	606.64	85.23	2790.48
1977-78	2098.61	114.72	2213.33	756.42	88.25	3058.00
1978-79	2213.33	1300.82	3514.15	917.67	150.94	4582.76
1979-80	3514.15	599.74	4113.89	1250.17	187.63	5551.69
1980-81	4113.89	779.52	4893.41	1662.65*	229.69	6785.75
1981-82	4893.41	1191.12	6084.53	1662.65*	233.16	7980.34

*This does not include the penal interest payable by the Company on account of its failure to repay instalments of loan on due dates. The accounts of the Company showed contingent liability of Rs. 728.64 lakhs on this account as on 31st March, 1982.

@The reduction is due to conversion of loan of Rs. 2380.00 lakhs into equity during the year.

(c) The Company incurred heavy cash losses (excluding depreciation) during five years ending 1981-82 as shown below :—

(Rs. in lakhs)

1977-78	2356.73
1978-79	870.00
1979-80	797.69
1980-81	1463.90
1981-82	1160.60

Due to heavy cash losses during the aforesaid years the Company diverted considerable amounts from loans received for capital expenditure towards revenue expenditure as indicated below :—

(Rs. in lakhs)

	Loans received for Capital expenditure	Actual capital expenditure	Diversion from loan for capital expenditure to revenue
1977-78	114.72	69.17	45.55
1978-79	No diversion from capital to revenue		
1979-80	99.74	51.26	48.48
1980-81	84.98	55.33	29.65
1981-82	No diversion from capital to revenue.		

(d) The Company also availed of cash credit facilities from the State Bank of India and United Bank of India upto a limit of Rs. 2050 lakhs on hypothecation of stock-in-trade, stores, book debts and other assets. The balances outstanding in Cash Credit Accounts including interest due but not paid at the end of each year for the last five years ended 1981-82 were as follows :—

(Rs. in lakhs)

As on 31-3-1978	1938.33
As on 31-3-79	1857.66
As on 31-3-80	2090.33
As on 31-3-81	1936.07
As on 31-3-82	1928.24

3.02 *Working Results*

The Company earned profit only from 1972-73 and this trend continued upto 1976-77. From 1977-78 onwards the Company again suffered losses. The Profit (+) or loss (—) as per the accounts of the Company for each year during the ten years ending 1980-81 were as under :—

(Rs. in lakhs)

Year	Profit or loss for the year	Prior period adjustments	Profit/loss after prior period adjustments
1972-73	(+) 00.01	(+) 28.80	(+) 28.81
1973-74	(+) 25.26	(+) 9.12	(+) 34.38
1974-75	(+) 44.95	(—) 60.97	(—) 16.02
1975-76	(+) 50.39	(—) 10.54	(+) 39.85
1976-77	(+) 75.45	(—) 40.31	(+) 35.14
1977-78	(—)2265.10	(—) 225.48	(—)2490.58
1978-79	(—) 993.63	(—) 12.27	(—)1005.90
1979-80	(—) 953.77	(+) 35.92	(—) 917.85
1980-81	(—)1549.86	(—) 44.64	(—)1594.50
1981-82	(—)1287.52	(—) 3.11	(—)1290.63

The working results of the Company for different years as shown in the Accounts have to be viewed in the light of the following facts :—

1. Whereas the accounts for 1975-76 and 1976-77 disclosed profits of Rs. 50.39 lakhs and Rs. 75.45 lakhs respectively, the Accounts for 1977-78 disclosed a loss of Rs. 2265.10 lakhs.

The heavy loss shown in the accounts for 1977-78 was partly due to the following adjustments aggregating Rs. 954.86 lakhs made in the accounts for 1977-78 by the Company of its own and in pursuance of the recommendations of a firm of Chartered Accountants appointed by the Bankers for verification of inventories and receivables to ascertain their fair value by way of security.

(Rs. in lakhs)

(*i*) Decretion in value of raw materials, work-in-progress finished product, loose tools and non-standard equipment due to non-existence, change in methods of valuation/calculation and adjustment made for valuation at correct rate	583.34
(*ii*) Reduction in sales due to supply of materials free of cost to the customers and difference in the value of finished products as these fetched lower value than the value shown in the closing stock.	140.00
(*iii*) Provision for obsolete, unusable and non-moving inventories and receivables considered doubtful of recovery .	231.52
	954.86

(Paragraph 12.02 also refers)

2. No provision has been made for penal interest amounting to Rs. 728.64 lakhs treated as a contingent liability as on 31st March, 1982.

3. Loans amounting to Rs. 2627 lakhs given to make good cash losses upto 31st March, 1972 were made interest free upto 31st March, 1975.

4. Loans amounting to Rs. 2101 lakhs given to make good cash losses upto 31st March, 1975 were converted into equity, thereby affording relief in interest amounting to Rs. 938.94 lakhs during the years 1975-76 to 1981-82.

5. A loan of Rs. 279 lakhs for capital expenditure on township was converted to equity from 1st April, 1975.

6. The package of financial reliefs granted by Government of India in January 1983 which have been given effect in the financial accounts for the year 1981-82 (vide paragraph 3.03 below).

The cumulative loss as on 31st March, 1982 amounted to Rs. 108.16 crores and thus after wiping off the entire paid up capital of Rs. 44.85 crores and the loan of Rs. 60.85 crores deficit of Rs. 2.46 crores still remained uncovered.

The Manaement attributed (December 1981) the losses for 1978-79 to 1980-81 to the folowing reasons : —

- — Under utilisation of production capacity.
- — Lower productivity of labour.
- — Increased cost due to delay in execution of orders/ projects.
- —Paucity of working capital.

Regarding loss during 1981-82, the Management stated (July 1983) as under :

> "The main reasons for loss were due to the execution of old orders, which did not fully cover overhead costs rise in price of inputs not fully compensated by escalation clauses."

3.03 *Financial Reliefs to the Company*

In view of the recurring losses suffered by the Company, the Company made a number of proposals from time to time to the Government of India for grant of financial relief and assistance to reorganise the capital structure of the Company. The proposals made by the Company included, *inter alia,* reduction of paid-up capital, treatment of all Government loans as grants, assistance in reduction of bank overdraft, assistance to make good cash loss, etc. Government had also constituted an expert Committee on Public Enterprises on Engineering Sector in August 1980 to examine the working of the important public enterprises and to identify steps necessary to improve performance of such enterprises.

While submitting the projected operational results for the years 1980-81 to 1984-85, the Company requested Government in March 1982 for the grant of the following reliefs :

1. Interest holiday on outstanding loans as on 31st March, 1981 till 31st March, 1985.

2. Grant of non-plan loans of Rs. 22.66 crores to finance cash losses upto and inclusive of 1981-82 with interest holiday till 31st March, 1985.

3. Non-plan loans of Rs. 14.98 crores to meet Working Capital requirements from 1981-82 to 1983-84 with interest holiday upto 31st March, 1985.

4. Conversion of outstanding interest of Rs. 21.90 crores (including penal interest) as on 31st March, 1981 to non-plan loans with interest holiday upto 31st March, 1985.

5. Moratorium on all the above loans upto 31st March, 1985.

Keeping in view the recommendations made by the Expert Committee in June 1981 and the proposals made by the Company in March 1982, Government granted (January 1983) the following financial reliefs to the Company :—

(i) An interest holiday on outstanding Government loan as on 31st March, 1981 amounting to Rs. 48.93 crores for a period of 4 years from 1st April, 1981 to 31st March, 1985.

(ii) Conversion of arrears of interest of Rs. 16.62 crores accrued upto 31st March, 1981 and penal interest of Rs. 5.28 crores upto 31st March, 1981 (totalling Rs. 21.90 crores) into non-plan loan on which also there would be an interest holiday till 31st March, 1985.

(iii) An interest holiday till 31st March, 1985 on non-plan loans amounting to Rs. 11.30 crores and Rs. 7.20 crores granted to the Company during the years 1981-82 and 1982-83 (upto August 1982) respectively to meet cash losses and working capital requirements of the Company.

(iv) Moratorium on repayment of instalments of loans mentioned above upto 31st March, 1985.

4. Foreign Collaborations

4.01 The Company was originally set up for manufacture of a few selected items of mining equipment to cater to the needs of the country for achieving the coal production targets. The capacity of the Company was grossly under utilised since inception as it could not secure adequate orders of equipment which would suit its production profile envisaged in the Detailed Project Report. As a part of diversification plan, the Company wanted to explore new areas of production and entered into several collaboration agreements with foreign firms for obtaining technical know-how. Details of foreign collaborations and the amounts paid for import of components, royalty etc. as a result of collaborations are given in Annexure II.

Even after entering into collaboration agreements for technical know-how the Company's portion of work undertaken in respect of the projects under execution ranged between 3.30 per cent and 26.40 per cent of the total value of these contracts. The Ministry stated (January 1983) that MAMC Limited being a mechanical Company, the percentage should appropriately be worked out excluding cost of civil, electrical and erection components from the value of the contracts. Even if the cost of civil, electrical and erection components is excluded, the percentage of Company's portion of manufacture was not adequate, as is shown in the table below :

Name of the Project	Contract value	Company's portion of manufacture	Percentage of Column 3 to 2	Percentage excluding cost of civil, electrical, erection and commissioning portion
(1)	(2)	(3)	(4)	(5)
1. Moonidih Washery . .	1478.83	355.78	24.05	42
2. Meghahatuburu Iron Ore Project. . . .	616.74	137.84	22.34	66
3. Kolaghat Coal Handling. .	722.84	190.84	26.40	48
4. Korba Coal Handling .	1144.36	192.00	16.77	39
5. Wanakbari Coal Handling	654.22	164.48	25.14	54
6. Rajpura Dariba . .	465.38	15.38	3.30	5
7. Ramgarh Washery . .	1484.07	191.25	12.88	25

4.02 *Deputation of Polish experts*

The Company entered into an agreement with M/s. Kopex of Poland from 1st May, 1974 for deputation of four Polish experts to India for technical assistance in setting up a Design and Engineering Organisation and achieving the following objectives :—

- Techno-economic preliminary reports and project reports.
- Detailed designs or parts thereof.
- Workshop drawings in different branches including mechanical, electrical and civil engineering.
- Co-ordination of the designing procedure.
- Training of Indian specialists in the field of documentation of coal preparation plants.

Under the agreement, initially Polish experts were to be deputed for a total of 156 man-months during 3 years ending 1977 for which a remuneration of Rs. 13.62 lakhs was fixed.

As the Company could not build up its own nucleus of design engineers for training during the currency of original agreements, another agreement for deputation of second batch of Polish experts from July 1977 for further 156 man-months was entered (February 1977) with M/s. Kopex of Poland at a total cost of Rs. 13.62 lakhs. The currency of extended contract is still continuing (March 1983).

The Ministry of Industry (Department of Heavy Industry) stated (April 1983) as follows :—

> "Orders for the Moonidih and Dugda Washeries were received in March 1976 and June 1976 respectively. With the receipt of these orders more advanced assimilation of know how commenced .... Since the deputation of experts was expiring early 1977 it was possible to complete only 30 per cent of the design work for this project within the available time............ Unless a Company builds a few washeries using a combination of various equipment i.e. cyclone jig, froth floatation and heavy media bath, it cannot acquire sufficient know how to stand on its own. During the three year period ending 1977, only three major washeries were ordered by Coal India. Engineering of the two washeries i.e. Moonidih and Dugda were done by MAMC. One of these washeries uses cyclone process while the other uses jig washing. Thus the deputation of further experts was inescapable and another agreement for deputation of further 156 man-months was entered with Kopex of Poland.............".

4.03 *Deputation of Soviet Experts*

The Company had been taking the assistance of Soviet experts from year to year with a view to developing design and technology for the new product pattern under manufacture in the Company to suit Indian mining conditions and the requirements of the customers.

In a meeting held in October 1971 between the Secretary, Ministry of Steel and the Chief Executives of various Government Undertakings, it was emphasized that the stay of foreign experts in India as Advisers should be restricted to the minimum and the Indian personnel should take full advantage of the presence of foreign experts with a view to extracting the technical know-how in the shortest possible time.

The statement below would, however, indicate that the number of Soviet experts remained almost the same throughout the period from 1974-75 to 1981-82 and the foreign experts were employed on maintenance work also :—

Year	Number of personnel	Man months utilised on		Amount of Salaries and Allowances	
		Maintenance	General Products	Total	For Maintenance
					(Rs. in lakhs)
1974-75 . .	19	50	117	7.67	2.01
1975-76 . .	23	48	131	7.59	1.66
1976-77 . .	19	37	116	6.32	0.96
1977-78 . .	16	22	95	5.99	1.24
1978-79 . .	13	35	77	4.56	1.14
1979-80 . .	17	24	88	7.14	1.18
1980-81 . .	19	28	89	8.06	1.43
1981-82 . .	18	48	129	7.45	3.15

In regard to the man-months utilised for maintenance, the Ministry stated (January 1983) as follows :—

> "In the field of maintenance, there has been an increase in 1978-79 to 1980-81. This increase is due to the following :
>
> (i) Capital overhauling of machines has been undertaken from 1978-79 onward;
>
> (ii) The machine tools have become substantially old requiring higher maintenance; and
>
> (iii) Due to anticipated receipt of USSR orders, caliberation of accuracy of some of the machines."

5. **Production Capacity and Planning**

5.01 *Plant Capacity* :

The Company was set up with an installed capacity for production of 45,000 tonnes per annum of variety of underground mining machinery and spares. The composition of product mix was based on coal raising targets for the 4th and 5th Five year Plans. The plan targets did not materialise and owing to lack of adequate orders for the equipment suited to its production profile, the Company had to diversify its production.

In order to undertake a technical and economic examination to determine the main line of diversification an Expert Committee was appointed by the Management in March 1969. The

Committee in their Report submitted in March 1970 recommended a build up of production capacity as under :

Description	Years			
	1970-71	1971-72	1972-73	1973-74
				(In tonnes)
Mining	1,660	2,996	3,293	3,490
Ports	3,870	7,410	9,150	4,675
Bokaro Steel Plant (1st phase) .	4,130	1,300	—	—
Bokaro Steel Plant (2nd Phase)	—	—	—	3,040
Sub contract	400	1,225	1,950	2,550
Miscellaneous equipment .	360	420	1,480	2,120
Exports	—	300	400	1,300
Miscellaneous and spares .	600	1,000	1,000	1,000
TOTAL	11,020	14,651	17,273	18,175

The above production profile included the following products as recommended by the said Committee to be taken up by the Company under its diversification programme :

Items	Likely annual demand
	(in tonnes)
(*i*) Equipment for bulk handling of raw materials for ports, power stations etc. viz. stacker, reclaimer, ship loader, heavy duty conveyor, barge loader, spreader etc. . .	6,300
(*ii*) Casting and forging for Railways	500
(*iii*) Coal washing plant and ore beneficiation plant . .	500
(*iv*) Sand plants for mines and ash handling plants for power stations and chemical industries.	350
(*v*) Heavy duty Gear box (Upto 500 HP) and Fluid coupling .	150
(*vi*) Front end loader and medium duty Gear box for export to USSR.	1,300
(*vii*) Spares for ropeways	200
	9,300

The Report of the Expert Committee on the diversification of products of MAMC was approved by Board of Directors in July 1970.

During the year 1972-73, the Management felt it necessary that a realistic assessment should be made for the achievable production capacity on the basis of machinery installed, man-power available and the product-mix including limiting factors of certain key machines, which were considered grossly overloaded at that time. The Management accordingly assessed the achievable installed capacity during the years 1972-73 and 1973-74 as 17,273 and 21,000 tonnes respectively. The capacity for the subsequent years has been marginally adjusted due to addition of new machines and changes in the number of employees.

During discussions in the Audit Board meeting, the representatives of the Ministry stated that the product-mix of the Company has changed considerably. In reply to a query raised by the Audit Board as to whether any study was made to fix the revised capacity in view of the fact that the Company had started manufacturing comparatively heavier items of machinery, the Ministry stated (April 1983) as follows :

> "The capacity of 21,000 MT during 1973-74 was fixed by the Management based on likely receipt of repetitive mining equipment......... Even at that time the manufacture of certain types of heavier equipment such as stacker, stacker-cum-reclaimer, ship-loader, heavy duty conveyor were considered by the Expert Committee while determining the production capacity of 17,273 MT in the year 1972-73. The only heavier equipment included subsequently in the product range pertains to some items required for long wall mining (such as powered roof support)......
>
> It will, therefore, become necessary to undertake periodical exercises on assessment of the installed capacity until such time the Company is able to settle to a definite product-mix.

> A fresh exercise is being undertaken on the existing product profile".

In reply to another query of the Audit Board whether the imbalances on the machine load centres as a result of the change in the product-mix have been identified, the Ministry stated (April 1983) as follows :

> "As a result of change in product-mix there are imbalances in th machine load centres. As for the year 1983-84, the imbalances have been identified based on the production programme for the year under reference".

5.02 *Product Range*

The products now being manufactured by the Company are divided into the following broad groups ;

- Mining equipment.
- Bulk material handling machines.
- Conveyors with associated structures and allied equipment.
- Coal preparation plants.

5.03 In this connection, the following facts deserve mention :

- No specific approval of Government for derating the installed capacity has been obtained by the Company, so far (March 1983).
- Bureau of Public Enterprises, in its Annual Reports, has been computing the capacity utilization of the Company with reference to 45,000 tonnes mentioned in DPR, as derating of installed capacity has not been approved by Government. If the capacity of 45,000 tonnes is taken as installed capacity, the utilisation ranged between 21 and 42 per cent during the last five years.

— The Company has also not been able to settle the achieveable installed capacity on a firm basis on the ground that its product-mix is not definite.

5.04 *Utilisation of achievable installed capacity*

The table below indicates achievable capacity as fixed by the Management, actual plant production and percentage of utilisation during the years 1972-73 to 1981-82.

Year	Achievable installed capacity (tonnes)	Actual production (tonnes)	Percentage utilisation
1972-73	17,273	12,879	74.56
1973-74	21,000	12,333	58.73
1974-75	21,550	13,323	61.82
1975-76	21,550	13,253	61.50
1976-77	22,075	16,390	74.25
1977-78	22,307	7,389	33.12
1978-79	22,340	8,524	38.15
1979-80	22,376	9,361	41.85
1980-81	22,550	8,730	38.71
1981-82	22,662	7,842	34.60

It would be seen from the above that actual plant production was far below even the achievable installed capacity fixed by the Management.

Regarding shortfall in actual production, the Ministry stated (January 1983) as follows :—

> "The shortfall of actual production over the plan production was due to constraint of power, deferment and cancellation of orders and cash shortage".

5.05 At the instance of the Management, the National Industrial Development Corporation Limited (N.I.D.C.) had carried out a study in July 1975 of the requirements of Company's products in 5th Five Year Plan period *vis-a-vis* its installed capacity. Details of the various major products of the Company required in 5th Five Year Plan, average annual requirements, achievable installed capacity and the actual production including bought-outs and ancillary production during the years 1976-77 to 1981-82 are given below :

(Figures in tonnes)

Name of product	5th five Year Plan requirements	Average Annual requirements	Achievable installed Capacity as fixed by the Company	Actual Production					
				1976-77	1977-78	1978-79	1979-80	1980-81	1981-82
1. Coal Mining Equipment (without conveyor and structurals) . .	99502	19900	5000	3857	2207	2931	3454	1878	1860
2. Port Equipment (without conveyor and structurals) .	7000	1400	2500	2439	418	69	151	216	531
3. Steel Plant Equipment (without conveyor and structurals) .	6830	1366	300 (76-77) (onwards)	129	148	157	402	211	316

4. Conveyor, Scraper Chain conveyor (Mining & non-mining) . .	1,30,057	26,011	8,025 (76-77 onwards) 7890 (78-79 onwards)	7,802	3,169	4,771	2,957	3,875	4,072
5. Coal Preparation Plant Equipment	52,600	10,520	82 (1977-78); 250 (1978-79); 286 (1979-80); 460 (1980-81); 572 (1981-82);	NIL	196	225	276	1458	2905
6. Spares. . . .	—	1,600	1,050 (1976-77); 1200 (1977-78 onwards)	1917	1303	1148	976	889	1195

It will be seen that the Company had not been able to produce even upto its achieveable installed capacity in respect of equipment mentioned at Sl. Nos. 1, 2 and 4.

5.06 *Additional and Balancing facilities*

In June 1974, the Company engaged the NIDC at a fee of Rs. 2 lakhs to prepare a Corporate Plan for achieving balanced and optimum equipment utilisation *vis-a-vis* the projected production programme and to work out the Project Report for the same. The report of the NIDC titled 'Balancing Facilities for MAMC' envisaged a programme of production of 22,135 tonnes in 1975-76 to be increased gradually to 41,742 tonnes in 1980-81 (including production of small scale industries)—with an aggregate capital expenditure of Rs. 607 lakhs.

Although the report of the NIDC was received in July 1975, a final decision thereon was taken only in August 1977 when a six-year Corporate Plan for the years 1977-78 to 1982-83 at an estimated capital expenditure of Rs. 341.80 lakhs was approved by the Board of Directors of the Company. The estimate of capital expenditure was subsequently (May to November 1978) revised to Rs. 323.65 lakhs. As against this the actual expenditure upto end of 1981-82 was Rs. 222.92 lakhs.

About delay in taking a final decision on the Report which was submitted by NIDC in July 1975, the Ministry stated (January 1983) as follows :—

> "The Corporate Plan, on receipt was studied by the Company, and put up for consideration of the Board in its meeting held in October 1975. Board desired that the report be discussed with the Ministry, and after taking into consideration the advice given by them it could be reconsidered...... The matter was discussed with Ministry in 1976. A change in demand pattern was foreseen during discussion with the Ministry, and as such it could not be finanlised. Following deferment and suspension of orders which commenced from 1976-77, a decision was taken to have a relook at the report and deal each scheme separately instead of all schemes in a comprehensive manner. In terms of the above decision, individual schemes were recast and submitted for Board's approval in August, 1977".

During the year 1978, the Company prepared a revised Corporate Plan for the period from 1978-79 to 1982-83 which was approved by the Board of Directors in their meeting held on 27th November 1978. The production as envisaged in the revised Corporate Plan and the actual production (including production of small scale industries) during the five years ending

1982-83 are compared in the following table :—

(Rs. in lakhs)

Year	Production forecast				Total	
	Mining		Non-mining			
	Tonnes	Rs.	Tonnes	Rs.	Tonnes	Rupees
1978-79	4,169.15	1,136.73	8,697.45	2,366.40	12,867	3,503
1979-80	4,870.48	1,326.00	15,088.52	2,943.00	19,959	4,269
1980-81	5,592.48	1,733.35	15,051.52	3,149.65	20,644	4,883
1981-82	7,033.90	2,178.27	16,113.10	3,370.73	23,147	5,549
1982-83	7,040.90	2,192.69	18,520.10	4,221.31	25,561	6,414

	Actual production		Shortfall		Percentage of shortfall	
	Tonnes	Rs.	Tonnes	Rs.	Tonnes	Value
1978-79	10,992	2,524.44	1,874.6	978.69	14	27
1979-80	12,333	3,146.34	7,626.0	1,122.66	38	26
1980-81	11,920	3,156.23	8,724.0	1,726.77	42	35
1981-82	18,797	3,880.83	4,350.0	1,668.17	19	30
1982-83	Not available					

In regard to reasons for shortfall of actual production as compared to production forecast made in the revised Corporate Plan the Management stated (February 1982) as under :—

> "The production forecast envisaged in the Corporate Plan which was prepared during the year 1978 was based on the following :
>
> (a) Assessment of the requirement of equipment for the coal companies which was drawn up from the three years projections of Coal India Limited (CIL) for the VI five years plan.
>
> (b) Assessement of the requirement of equipment for bulk handling industry which was drawn up by the working group appointed by the Ministry of Heavy Industry.
>
> The programme envisaged in the Corporate Plan did not materialise in subsequent years as the Company did not get the orders as envisaged particularly the orders of repetitive type of mining machineries for which the Company is designed. The Company was therefore, compelled to continue manufacture of diversified ranged of products tailor made, which had an adverse effect on capacity utilisation resulting in loss of production".

Based on the draft recommendations of the Expert Committee on Public Enterprises (ECOPE) appointed by the Government of India (August 1980) to examine the working of some of the Government Enterprises, the Company sent (September 1981) a viability plan for 1982-83 along with the proposals for financial reliefs to the Government of India for achieving the break-even point in 1982-83 at the production level of Rs. 54.53 crores.

On receipt of final recommendations of the said Expert Committee, the Company submitted on 15th March 1982 projected operating results for the years 1981-82 to 1984-85 to Government taking into consideration the proposals submitted by the Company for grant of financial reliefs. The projections envisaged production of Rs. 58.43 crores, Rs. 70.70 crores and Rs. 93.00 crores during the years 1982-83, 1983-84 and 1984-85 respectively. According to these projections, the Company is expected to break even at a production of Rs. 70.70 crores during 1983-84. As mentioned in paragraph 3.03 the decision to grant financial reliefs was communicated by Government in January 1983.

While conveying the decision for the grant of financial reliefs, the Ministry intimated the Company in January 1983 as under :—

> "With financial reliefs now being granted, the Management should ensure that the targets of production and operating results set for the years 1982-83, 1983-84 and 1984-85 in their letter dated the 15th March 1982 should not only be achieved but preferably be exceeded. The Management would be held responsible for any failure to achieve these targets. The Company should also make good in 1982-83, 1983-84 and 1984-85 the shortfall in production in 1981-82 from that prejected by it to ECOPE".

The projections for the year 1982-83 at a production level of Rs. 58.43 crores showed a loss of Rs. 1.46 crores. As against this, production for the year was Rs. 52.40 crores approximately and the loss anticipated is Rs. 9.96 crores.

6. Production Performance

6.01 *Product-wise performance*

As mentioned in paragraph 5.01, production capacity of the plant has been fixed by the Management on a year to year basis. Targets of production in respect of each group of products are, however, fixed in terms of total production of the group including production of ancillary/small scale industries units and bought out components. The table below compares the product-wise installed capacity of the plant, product group-wise targets of production including production of ancillary/small scale industries units etc., and actual production there against during the period from 1977-78 to 1981-82.

(Figures in tonnes)

Sl. No.	Name of Product	PRODUCTION PERFORMANCE																		
		1977-78				1978-79				1979-80				1980-81				1981-82		
		Installed capacity of plant production	Target		Actuals	Installed capacity of plant production	Target		Actuals	Installed capacity of plant production	Target		Actuals	Installed capacity of plant production	Target		Actuals	Installed capacity of plant production	Target	Actuals
			Original	Revised			Original	Revised			Original	Revised			Original	Revised				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
			(December 76)	(March 78)			(April 78)	(March 79)			(March 79)	(December 79)			(December 79)	(June 80)				
1.	Conveyor, Scraper Chain Conveyor (Mining and Non-Mining)	8025.00	10132.40	6592.90	3169.80	7890.00	4234.743	4735.00	4771.00	7890.00	4609.81	3600.00	2957.00	7890.00	6752.20	7643.78	3875.00	7890	7775	4072
2.	Mining Equipment without Conveyor etc. including Apron Feeder . . .	5000.00	4055.09	4133.40	2207.00	5000.00	2805.350	3029.00	2931.00	5000.00	2097.14	2989.33	3454.00	5000.00	2025.58	2150.58	1878.00	5000	1302	1860
3.	Port Equipment without Conveyor and Structural .	2500.00	—	—	418.00	2500.00	—	—	69.00	2500.00	—	—	151.00	2500.00	2846.74	570.00	216.00	2500	120	531
4.	Steel Plant Equipment without Conveyor . . .	300.00	511.00	2551.70	148.00	300.00	952.520	307.58	157.00	300.00	1690.19	180.00	402.00	300.00	—	716.36	211.00	300	135	316
5.	Miscellaneous Equipment and Structural . . .	2200.00	1200.00	2025.00	300.00	2200.00	2318.110	1045.00	977.00	2200.00	5609.53	2861.86	1770.00	2200.00	5087.99	3370.82	1206.00	2200	8163	5523
6.	Spares and Miscellaneous Orders	1200.00	1535.82	2599.53	1303.00	1200.00	699.793	1330.00	1148.00	1200.00	755.00	800.81	976.00	1200.00	725.00	1687.09	889.00	1200	1450	1195
7.	Miscellaneous Castings, Forgings, Ingots, Briquetes etc.	3000.00	3300.00	1628.61	1733.00	3000.00	—	446.89	714.00	3000.00	—	1699.00	2347.00	3000.00	—	—	2187.00	3000	500	2395
8.	Coal Preparation Plant Equipment	82.00	3000.00	1328.07	196.00	250.00	1856.082	423.53	225.00	286.00	1038.02	450.00	276.00	460.00	918.65	910.65	1458.00	572	450	2905
	TOTAL. . . .	22307.00	23734.31	18859.21	9474.00	22340.00	12866.598	11317.00	10992.00	22376.00	15799.69	12581.00	12333.00	22550.00	18356.16	17049.28	11920.00	22662	19895	18797

The following points of interest emerge from the above table :—

(i) Targets of production inclusive of production by outside agencies have invariably been fixed lower than the installed capacity of the plant itself in respect of production groups at Sl. Nos. 1, 2, 3 and 7 for the years 1978-79 to 1981-82.

(ii) Actual production has generally been lower than the targets so fixed for the years 1978-79 to 1981-82 in respect of product group at Sl. No. 1 (except 1978-79), 2(except 1979-80 and 1981-82), 3 (except 1981-82), 4 (except 1979-80 and 1981-82), 6 (except 1979-80) and 8 (except 1980-81 and 1981-82).

As regards fixation of targets much below the achievable installed capacity, the Ministry stated (January 1983) as follows :—

> "Targets have been fixed every year taking into consideration available capacity, firm orders available, lead time for manufacture and committed delivery to customers".

6.02 The break-up of targets and actuals into own production, bought-out items and ancillaries for the last five years ending 31-3-1982 are shown below :—

	1977-78		1978-79		1979-80		1980-81		1981-82	
	Tonnes	Rs. in crores	Tonnes	Rs. in crores	Tonnes	Rs. in crores	Tonnes	Rs. in crores	Tonnes	Rs. in crores
A. *Plant*										
Target (Original)	17209	26.73	NA	NA	10296	21.82	NA	20.64	10648	22.92
Actual	7389	2.64	8524	16.42	9361	19.34	8730	18.72	7842	20.62
B. *Ancillaries*										
Target (Original)	4000	5.01	NA	NA	1436	2.29	NA	3.40	2884	3.00
Actual	580	0.44	1225	1.22	2096	2.18	1186	0.96	2421	2.33
C. *Bought-out*										
Erection & Service (Original)	2525	7.65	NA	NA	4068	13.09	NA	15.96	6363	15.58
Actual	1505	6.38	1243	7.60	876	9.94	2004	11.88	8534	15.86
D. *Total*										
Target (Original)	23734	39.39	12866	36.23	15800	37.20	18356	40.00	19895	41.50
Actual	9474	9.46	10992	25.24	12333	31.46	11920	31.56	18797	38.81

It would be seen from the above table that even though the targets for own production fixed by the Company for the years 1978-79 to 1981-82 were much below the target for 1977-78 yet the actual production during the years 1978-79 to 1981-82 was considerably lower than the targets.

As regards fixing the plant targets much below the targets fixed for earlier years, the Ministry stated (January 1983) that the targets had been fixed taking into consideration the orders available in hand for the three years 1978-79, 1979-80 and 1980-81.

The above contention is not tenable as the orders planned by the Corporation were much less than the orders available for manufacture as would be seen from the following table :

	1978-79	1979-80	1980-81
		(Figures in tonnes)	
(*i*) Orders available for manufacture .	24,320	25,982	32,878
(*ii*) Orders manufactured but not despatched	2,538	1,796	2,894
(*iii*) Balance of Orders available for manufacture	21,782	24,186	29,984
(*iv*) Orders actually planned . .	12,866	15,800	18,356
(*v*) Orders not planned . . .	8,916	8,386	11,628

6.03 The short-fall in production as compared to targets have been attributed by the Management from time to time to the following reasons :—

1976-77

(a) Shortage of funds arising out of delay in payment by the customers.

(b) Deferment and cancellation of orders of certain categories of equipment by customers.

1977-78

(a) The targets were fixed based on anticipated orders and lifting of deferments by CIL, cancellation/deferment of orders (worth Rs. 24.36 crores) by Bhilai Steel Plant and Coal Companies.

(b) Lack/imbalance of orders appropriate to the optimum production efficiency of the Plant.

(c) Imbalance in shop loading due to shortage of matching orders resulting in under-utilisation of capacity and lack of incentives on earnings in certain sections leading to slowdowns and adverse chain effects on other sections.

(d) Low level of productivity due to :

- (i) Lack of discipline and accountability.
- (ii) System deficiency in production planning and progress,

(e) Poor liquidity, which was aggravated by low productivity.

(f) Highly disturbed industrial relations aggravated by weak Management.

1978-79

(a) Imbalance of load.

(b) Continued deferment of orders.

(c) Restricted power supply.

(d) Erratic availability of steel.

(e) Strained industrial relations.

1979-80

(a) Continued deferment of orders.

(b) Erratic availability of steel and other raw materials.

(c) Restricted power supply.

(d) Transport bottlenecks.

1980-81

(a) Inadequate production input due to cash constraint.

(b) Non-availability of matching steel sections.

(c) Erratic power supply in and around Durgapur and Calcutta areas which seriously affected production in ancillary industries.

1981-82

Major shortfall in the area of export items due to:

(i) Delay in receipt of complete components from a foreign firm.

(ii) Delay in opening letters of credit by a foreign buyer for the sub-assemblies of scraper chain conveyor.

The Management further stated (February 1981) as follows :—

> "The manufacturing facilities installed in MAMC are of general nature and can be used for manufacture of a wide range of equipment in any of the product group by and large for which orders are available. Thus the target against any product group may be more or less than the achievable installed capacity against that group shown in the statement but because of the adaptability of the machines for manufacture of different products, the overall target will be related to the achievable installed capacity in totality provided orders are available".

6.04 Shop-wise Performance

6.04.1 *Installed Capacity vis-a-vis actuals*

There was heavy under-utilisation of the installed capacity in the case of all the shops as may be seen from the following table :—

Shops	Installed Capacity	ACTUAL PRODUCTION											
		1976-77		1977-78		1978-79		1979-80		1980-81		1981-82	
		Tonnes	Percentage of installed capacity	Tonnes	Per centage of installed capacity	Tonnes	Per centage of installed capacity	Tonnes	Per centage of installed capacity	Tonnes	Per centage of installed capacity	Tonnes	Per centage of installed capacity
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Structural Shop .	8000	5486.00	68.57	2225.67	27.82	3221.20	40.26	3124.26	39.05	3728.79	46.61	3704.18	46.30
Forge Shop .	4000	2579.17	64.47	1742.88	43.57	1870.356	46.75	2094.03	52.35	1899.35	47.48	1951.47	48.79
Iron Foundry .	10800	1919.41	17.77	1330.08	12.32	1295.05	11.99	1394.22	12.91	1307.08	12.12	1440.36	13.34
Steel Foundry .	9000	4276.97	47.52	2353.616	26.15	1432.19	15.90	2980.09	33.11	2677.90	29.75	2314.78	25.71
Machine Shop-I .	8891	1824.66	20.52	1144.00	12.87	1329.40	14.85	1284.05	14.44	1256.21	14.13	992.08	11.16
Machine Shop-II .	11571	3111.24	26.89	1494.63	12.92	1717.00	14.83	1579.38	13.65	1957.42	16.92	1691.46	14.62
Machine Shop-III.	17661	2168.79	12.28	1583.53	8.97	1562.50	8.49	1693.31	9.59	1595.49	9.03	1625.13	9.20

In regard to reasons for shortfall in production in Iron and Steel Foundry as compared to installed capacity the Management stated (February 1981) as follows :—

> "The installed capacity mentioned in case of Iron Foundry and Steel Foundry relates to the DPR capacity. The DPR capacity in both the Foundries cannot be utilised fully mainly due to diversification of product-mix. In the original production profile the Plant is to manufacture a few types of equipments of repetitive nature out of which about 22,000 tonnes constitute only Belt and Scraper Chain Conveyor. The load of the Iron and Steel Foundries, therefore, as per DPR constituted mainly from the production of equipment of repetitive nature. Due to lack of adequate demand of repetitive nature of coal mining machinery as per original DPR specially for the Belt and Scraper Chain Conveyor, the capacity of the Steel and Iron Foundries could not be fully utilised with the right type of orders for which the Foundries were installed. We have already instituted all out drive to foster traditional and non-traditional clientele for obtaining orders for foundries and we have made a dent in this direction".

The Ministry further stated (January 1983) as follows :—

> "The efforts made during the 3 years period ending 1980-81 is highlighted by the fact that during this

> period the Company submitted quotations valued at approximate Rs. 9.82 crores in respect of castings and forgings...........As against a total quotation submitted for Rs. 9.82 crores, Company received orders for Rs. 77.68 lakhs only. The non-receipt of orders was mainly due to our prices being substantially higher than the prices at which the order were offered to us".

As regards shortfall in production in other shops, the Management stated (March 1982) as under :—

> "In view of the diversified nature of product-mix, the annual production target as well as actual are evaluated as a whole, therefore, reasons for shortfall of production for individual shops are not available".

6.04.2 *Actual production of different shops vis-a-vis Annual production Plan*

While the Company had fixed product group-wise annual production targets for the Company as a whole, the break-up of these production targets between different shops of the plant had not been fixed. In the absence of these details it is not possible to correlate the shop-wise actual production with the overall targeted production of the Company. However, the shop-wise annual production plan as fixed by the Company and actual production thereagainst in respect of the following shops and foundries during the last six years ending 1981-82 are summarised bolew:—

(Figures in tonnes)

	1976-77		1977-78		1978-79		1979-80		1980-81		1981-82	
	Target	Actual	Target	Actual	Target	Actual	Target	Actual	Target	Actual	Target	Actual
1	2	3	4	5	6	7	8	9	10	11	12	13
1. Structural Shop	6425.33	5486.09	3802.71	2225.67	4120.95	3221.20	3907.52	3124.26	5248.10	3728.79	4665.65	3704.18
2. Forge Shop	3146.31	2579.18	2707.57	1742.88	2132.81	1870.351	2634.98	2094.03	2692.97	1899.35	2738.32	1951.47
3. Iron Foundry	2076.87	1919.408	1995.67	1330.08	2311.01	1295.05	1962.01	1394.22	1980.35	1307.08	1888.58	1440.36
4. Steel Foundry	4805.14	4276.97	3401.75	2353.616	1838.91	1432.19	3779.14	2980.09	4238.71	2677.90	3326.12	2314.78
5. Machine Shop-I	1893.29	1824.66	1889.70	1144.00	1515.04	1320.40	1754.60	1284.05	1823.62	1256.21	1246.83	992.08
6. Machine Shop-II	2925.3	3111.24	3018.50	1494.63	2683.02	1717.00	2460.80	1579.38	2780.57	1957.42	2366.16	1691.46
7. Machine Shop-III	2461.18	2168.79	2505.26	1583.53	2120.68	1562.50	2439.43	1693.31	2790.21	1595.49	2302.98	1625.13

It will be seen from the above table that the actual production fell far short of targets of each shop (excepting Machine Shop II for 1976-77) in every year.

The Management stated (February 1981) as follows :—

> "Product group-wise annual production targets are fixed for the Company as a whole. Planning for each shop is done in a detailed and meticulous manner and the targets are fixed with reference to individual items of manufacture".

The Management's reply is not tenable as prior to 1981-82 the production targets were used to be fixed without taking into account the systematic loading (capacity) of each shop.

6.05 *Off-loading to small scale industries*

In pursuance of Government policy and directions to the Central Government Undertakings to assist in the growth of the small scale industries the Company started an ancillary development programme in 1971. The details of the number of units registered from year to year, the target of production through small scale industries as fixed by the Management and the actuals thereagainst during seven years ending 1981-82 are given below :—

Year	No. of Registered Units	Estimated Target		Actual	
		Tonnes	Value (Rs. in lakhs)	Tonnes	Value (Rs. in lakhs)
1	2	3	4	5	6
1975-76. . .	150	5244	380.00	4577	440.00
1976-77. . .	162	5371	481.00	3655	380.00
1977-78. . .	163	4000	501.00	580	44.00
1978-79. . .	167	1807	269.87	1225	122.00
1979-80. . .	168	1436	229.00	2096	218.00
1980-81. . .	170	2933	290.00	1186	95.52
1981-82. . .	173	2884	300.00	2421	232.63

It would be seen from the above table that even in the years 1975-76 to 1981-82 when the targets of Company's own plant production were not achieved, jobs were got executed through small scale industries. It could not be ascertained in audit why these jobs could not be undertaken by the Company itself with a view to spreading its overheads over a larger volume of production thereby reducing its loss.

During discussions in the Audit Board meeting, the representatives of the Ministry stated that purchases made from ancillaries and small scale units included the value of orders off-loaded by the Company because of its own inability to manufacture these items in time. The Audit Board desired to know the value of such orders off-loaded to ancillaries and small scale units. The Ministry, in this connection, stated (April 1983) as follows :—

> "As for procurement of materials from Ancillary or small scale Industries, this source is resorted to for various reasons. These include :
>
> (a) meeting delivery schedule of components and equipments.
>
> (b) items which are normally beyond the scope of MAMC's production facilities are procured from Ancillary sources.
>
> (c) certain simple items are partly off-loaded on Ancillary sources in order to promote these in terms of Government policy.
>
> As the Ancillary Department does not maintain a break up of off-loaded items indicating specific reasons for off-loading it is not possible to assess accurately the quantity and value of work off-loaded for meeting delivery schedule. However, an exercise

to scan all the off-loading proposals relating to production during the year 1981-82 was undertaken and the following approximate position could be assessed :

Year		Figures in tonnes	Rs. in lakhs
1981-82			
	(*a*) Total quantity of Ancillary production	2419	232.63
	(*b*) Quantity procured from Ancillary sources to meet delivery schedule .	1816	215.31
	(*c*) Quantity procured from Ancillary sources because some items were beyond MAMC's scope . . .	513	11.00
	(*d*) Quantity of simple items partly farmed out to assist Ancillary Department .	90	6.32

(Figures for the years 1979–80 and 1980–81 are not readily available)".

It was observed (January 1980) that 542.308 tonnes of materials valued at Rs. 8.47 lakhs were lying with ancillaries for periods ranging between three and eight years and a net amount of Rs. 6.76 lakhs was recoverable from the ancillaries after adjusting security deposits etc.

The Management stated (February 1981), *inter alia* as follows :—

> "In regard to the materials (542.308 tonnes) lying with ancillary for the period ranging between 3—8 years steps have been initiated by us, including filing of the cases with the Court for reconciliation/recovery of the materials.
>
> Regarding physical verification of the material lying with the ancillaries it may be clarified that so far as stock of materials in progress and finished products are concerned regular verification is conducted and the necessary confirmation/certificates are also obtained from the Units. Since for the raw-materials it is

not possible to distinguish these from the stock of other customers and their own stock, correct verification is difficult, and, therefore, the same had not been conducted. However, confirmation of the balances are obtained from the major Units, and physical verification to the extent possible is being introduced".

In this connection, the following features are worth mentioning :—

(i) One of the reasons given by the Ministry for procurement of materials from ancillary and small scale industries is to meet delivery schedule of components and equipment. A test check conducted in audit, however, revealed that in a large number of cases the ancillary/small scale units could not complete the jobs within the contractual delivery periods. In some of the cases delays ranged between 2 to 36 months and the jobs were completed after the delivery dates stipulated in the sale orders of the main products. The Ministry also intimated (January 1983) the following analysis of execution of orders placed during 1978 on ancillary|small scale units :

Status of orders	Value (Rs. in lakh)	Percentage fulfilment
1. Orders executed within delivery date . . .	4.12	5.94
2. Orders executed within delay of six months . .	20.62	29.70
3. Orders executed within delay of 6 to 12 months .	3.36	4.84
4. Orders executed beyond delay of 12 months . .	35.57	51.25
5. Orders not executed	4.68	6.74
6. Orders cancelled.	1.06	1.53

It will appear from the above analysis that the object of meeting delivery schedules by off-loading of jobs to ancillary/small scale industries was generally not achieved.

(ii) Out of raw materials worth Rs. 41.24 lakhs lying with ancillary Units as on 31st March 1982, confirmation was available only for Rs. 31.23 lakhs.

(iii) The Statutory Auditors in their Reports under Section 619(3) of the Companies Act, 1956 for the years 1977-78, 1978-79, 1979-80 and 1980-81 pointed out several defects/irregularities in the working of the ancillary Industries Development Department of the Company. Some of the defects/irregularities pointed out by the Auditors are mentioned in Annexure III.

6.06 *Service-cum-Assembly Centre, Nagpur*

The Company decided in June 1974 to set up a service-*cum*-assembly centre at Nagpur for carrying out the following activities :—

(i) Assembly of mining equipment to cater for nearby customers and to carry out light fabrications jobs.

(ii) Repair and servicing of mining equipment.

(iii) To maintain adequate inventory of spares for prompt customer service.

The facility of an assembly unit already existing at Nagpur. In March 1981, Assembly Centre and Service Centre were separated and the former unit was renamed as the "The MAMC Regional Workshop, Nagpur". Whereas the functioning of the service centre was considered a utility service to the customers, the Regional Workshop was expected to have an annual turnover of Rs. 32.25 lakhs with a net profit of Rs. 5.70 lakhs against an investment of Rs. 22.09 lakhs. However, the workshop incurred losses except nominal profit during 1979-80 as indicated below :—

(Rs. in lakhs)

Year	1977-78	1978-79	1979-80	1980-81	1981-82
Actual turnover .	6.25	6.29	26.19	21.88	21.84
Profit (+)/Loss (—)	(—)5.26	(—)5.39	(+)0.15	(—)6.72	(—)6.50

The Management stated (February 1981) that the Regional Workshop, Nagpur could not be fully loaded and the annual turnover was below the projections made as the incoming fresh orders of mining machines shrank drastically during the years 1977-78 to 1979-80.

The Ministry stated (January 1983) that Nagpur Regional Workshop was likely to break even in 1982-83.

7. Order position

7.01 *Extent of orders placed on the Company*

After nationalisation of Coal Industry, Coal India Limited (CIL) has been the biggest buyer for the equipment manufactured by the Company. The table below shows the total orders placed by C.I.L. and the quantum of orders placed on the Company in respect of conventional mining equipment manufactured by other manufacturers also :—

(Rs. in lakhs)

Year	Total orders placed by Coal India Limited	Orders placed on the Company	Orders placed on others
1979-80	2047	317	1730
1980-81	2720	620	2100
1981-82	3240	530	2710

The Ministry stated (January 1983) as follows :—

> "Following large projections of mining equipment by Coal India to the Industry, a number of small manufacturers came up for producing conventional mining equipment. This coupled with the withdrawal of price preference by the Government in 1977 resulted in a large quantum of orders getting diverted to other manufacturers".

7.02 During discussions in the Audit Board meeting with the representatives of the Ministry, it was pointed out that Jessop and Company Limited have been licensed to manufacture 'Powered Roof Supports' which has led to under-loading the Plant of the MAMC. Similarly, H.E.C. limited have been licensed to manufacture equipment for 'Coal Washeries and Winders' which has resulted in over lapping of the capacities of both these Companies. In this connection, the Audit Board desired to know the reasons for overlapping the licensed capacities. The Ministry stated (April 1983) as follows :

> "It is accepted policy of Government to set up more than one source of supply for any product in order to give choice to the user sector. It also helps in the improvement of qaulity of the product due to *inter se* competition. It is on account of this factor that it was decided to allow both Jessop and MAMC to manufacture Self Advancing powered Roof Supports. This may to some extent affect the order book position of MAMC but it would be in the overall interest of the Industry as such. Similarly, HEC have also been allowed diversification in the field of the coal washeries. They posses necessary expertise and are at present executing an order for Kedla Washery".

7.03 During discussions in the Audit Board meeting with the representatives of the Ministry, it was also observed that certain equipment, machines etc. which are within the product range of the Company have been allowed to be imported. In this regard, the Ministry stated (April 1983) as under :—

> "The items which are within the production profile of the Company and in which the Company is interested to supply these items are cleared by D.G.T.D. for import after consulting the Department of Heavy Industry".

7.04 *Lost tenders*

The Company has also lost several tenders as the same were not accepted by buyers. Some of the tenders lost from 1st January 1981 onwards alongwith the prices quoted by the Company and those quoted by other manufacturers as analysed by the Ministry (April 1983), are mentioned in Annexure-IV.

The main reasons for losing the tenders were attributed by the Ministry (April 1983) to the following :—

- Delivery period did not suit the requirement of the customers.
- Offers having been found technically unacceptable.
- Majority of tenders were lost by the Company due to higher cost of production and higher element of overheads.

In reply to an Audit Board query regarding measures taken to load the Company with orders, to make these competitive in regard to price and to improve the delivery schedule, the Ministry stated (April 1983) as follows :

> "To make MAMC's offers competitive following specific actions have been taken :
>
> (a) Entering into back to back contracts for outside bought-out and services.

(b) Resorting to off-loading of low and medium technology items.

(c) Modifying design and processes to make them economic".

7.05 In view of the poor performance of the Company culminating in huge loss during 1977-78, a High Level Committee was appointed by the Government of India in August 1978 for making an indepth study of the working of the Company. The Committee in its Report, submitted to Government in December 1978, *inter alia* recommended.

- It would be mutually beneficial if in the normal course 1/3rd of the long term requirement of nationalised coal industry was earmarked for the Company.
- The above orders should be placed on the Company at competitive prices as obtained from free competition.
- Company could compete for the balance 2/3rd with public and private sector companies.

The Ministry stated (January 1983) that all efforts made by the Company to commit Coal India Limited to place long term orders have not yielded any result.

7.06 In reply to a query of the Audit Board whether there were any constraints in obtaining adequate orders from Coal India Limited and its subsidiaries as well as other public sector undertakings, the Ministry identified (April 1983) the following constraints in getting adequate orders for mining equipment and turnkey projects :

Mining Equipment

(a) Items with high imported content or with inadequate indigenous capacity are purchased by subsidiaries of Coal India Limited through their holding Company. Time allowed to manufacture against tender for delivery of such equipment is generally inadequate. To meet the delivery requirement, the Company has to resort to higher import content. Such import content invariably leads to higher prices and longer delivery periods. The customers, therefore, tend to prefer import of total equipment.

(b) In respect of equipment which are not centralised by the holding Company, the demands get fragmented between various subsidiaries. This fragmentation is further accentuated by purchase of such equipment in piece-meal. Against such piece-meal purchases, the Company could not match prices and delivery period as quoted by the small-scale manufacturers.

(c) Bunching of purchases by the companies invariably leads to a lesser share on an average and also to periods of underloading.

Coal Beneficiation Plants

One of the major reasons for not obtaining adequate orders is insistence by the CIL for the highly sophisticated electronic jig in the washing circuit. Such electronically controlled jigs are basically manufactured by only one West German manufacturer, who has a subsidiary Company in India.

Insistence of an equipment which is the proprietary item of a Company in preference to washing through well established cyclone and other processes (which according to MAMC will be more reliable and efficient circuit) becomes a major factor in MAMC in not getting a higher share of the market.

These constraints have been brought to the notice of Department of Çoal and Coal India Limited by the Company.

Turnkey Projects

(a) Higher costs on account of:

- Higher costs of hot shops.
- Higher element of overheads.
- Failure to load the plant on an optimum basis.
- Large number of unutilised machines due to change in product profile.

(b) Increased cost of input raw materials/stores due to delay in making timely payment to suppliers.

(c) Longer delivery period which has resulted in higher provisions on account of escalations.

In reply to another query raised by the Audit Board about the efforts made to remove these constraints, the Ministry stated (April 1983) as under :—

"To obviate these contraints the question of obtaining mining equipment orders on rolling basis has been taken up with Coal India.

Depending on the type of equipment MAMC requires 18—24 months lead time for fulfilment of orders from the date of receipt of the order. It is for this reason that MAMC has been requesting for orders on a two year rolling basis.

Further, MAMC is committed to a programme of indigenisation of longwall face equipment and road headers, and unless orders are placed sufficiently in advance, providing MAMC with the necessary lead time, the indigenisation programme cannot be fulfilled and larger imports will become inevitable."

7.07 *Pending orders vis-a-vis execution*

The table below indicates the position of outstanding sale orders on hand at the commencement of each year, orders received during the year, orders executed during the year and orders on hand at the end of six years ending 1981-82 :

Period	Opening Balance	Orders received during the year	Orders executed during the year	Orders in hand at the end of the year
	(Figures above the line in tonnes and below the line in lakhs of rupees).			
1976-77 . . .	39904.54	11792.25	18376.11	33320.08
	7,497.94	1,762.80	2,594.95	6,665.79
1977-78 . . .	33320.08	214.92	9214.57	24320.43
	6,665.79	485.24	1,738.82	5,412.21
1978-79 . . .	24320.43	11037.24	9375.53	25982.14
	5,412.21	3,381.26	2,254.03	6,539.44
1979-80 . . .	25982.14	16346.38	9450.00	32878.52
	6,539.44	3,855.44	2,530.39	7,864.49
1980-81 . . .	32878.52	13096.82	9495.09	36480.25
	7,864.49	3,972.90	2,631.93	9,205.46
1981-82 . . .	36480.25	22701.07	16834.40	42347.22
	9,205.46	8,405.58	3,281.48	14,329.56

Although the Company had substantial orders on hand for the period mentioned above, the actual execution of orders excepting for the year 1976-77 and 1981-82 never exceeded 10,000 tonnes per year during the period from 1977-78 to 1980-81.

7.08 The table below indicates the year-wise break-up of outstanding orders at the end of 31st March, 1982 :

	Mining		Non-Mining	
	Weight (Tonnes)	Value (Rs. in lakhs)	Weight (Tonnes)	Value (Rs. in lakhs)
Prior to 1975-76 .	411.75	168.63	141.36	38.05
1976-77 . . .	—	—	562.12	65.62
1977-78 . . .	—	—	178.99	39.96
1978-79 . . .	114.33	36.99	5406.35	1,589.21
1979-80 . . .	315.97	126.40	4803.59	1,075.45
1980-81 . . .	9408.15	2,675.38	1808.84	357.67
1981-82 . . .	10745.63	5,261.14	8450.14	2,895.06
	20995.83	8,268.54	21351.39	6,061.02

It will be seen from the above table that the outstanding orders as on 31st March, 1982 pertain to period prior to 1975-76 and onwards.

7.09 *Cancellation and Deferment of Orders*

The various coal Companies deferred or cancelled large quantities of orders valuing Rs. 16.67 crores of mining equipment during the 3rd/4th quarter of 1976-77 as sufficient stocks were stated to be available with them. A similar cancellation amounting to Rs. 7.69 crores was made by Bhilai Steel Plant in August 1977. The deferment of orders resulted in blocking of funds. The position of funds blocked as on 31-3-1977 was as follows :—

	(Rs. in lakhs)
Finished product and Work-in-progress	681.28
Raw Materials	115.41
	796.69
Less : Advance received	455.80
Net	340.89

The orders cancelled/deferred included orders worth Rs. 206.77 lakhs cancelled by Coal India Ltd. on the ground of non-requirement and orders worth Rs. 839.59 lakhs deferred even before the expiry of dates of delivery. In both these cases the Company could have technically refused to accept the cancellation or deferment or could have claimed compensation for cancellation/deferment. However, since orders worth Rs. 515.09 lakhs had not been complied with by the Company despite taking advances from Coal India Limited the Company had to acquiesce in the deferment and cancellation of orders by Coal India Limited. Interest amounting to Rs. 34.43 lakhs on advances deducted by Coal India Limited for delay in supply of equipment has been written-off in the accounts of the Company for the year 1979-80.

7.10 *Delay in execution of Orders*

As mentioned in paragraph 6.01 the targets of production have invariably been fixed much below the achievable installed capacity. Although the actual production was also lower than the targets, there have been abnormal delays in the actual execution of the various sales orders. A few cases in which abnormal delays in execution of the various sale orders were noticed in audit are given in Annexures 'V-A' and 'V-B'.

The following points in this connection deserve mention :

(a) In two cases, action to manufacture the product was started after the expiry of the delivery dates (item Nos. 1 and 5 of Annexure V-A).

(b) In respect of all the 15 items in Annexure V-A, delivery is still incomplete.

(c) The manufacture of two Appron Feeders (item No. 1 of Annexure V-A) has since been off-loaded to a third party.

(d) Delays in execution of all the 13 cases--Annexure 'V-B'—ranged between 15 to 97 months.

(e) A total amount of Rs. 102.52 lakhs has been withheld by the customers as liquidated damages upto 31st March 1982 for delays in delivery.

Reasons for delay in execution of of sale orders mentioned in Annexure 'V-A' were attributed by the Ministry (January 1983) to the following :—

— Delay in release of drawings, specifications and placement of orders for electricals.

— The manufacture of mechanicals had to suit to receipt of bought-outs.

— Due to cash shortage there was scarcity of input raw materials.

The reasons for which the delivery schedule could not be adhered to in respect of cases mentioned in Annexure 'V-B' as stated (February 1981) by the Management were as under :—

> "Almost entire range of equipment was being taken up for manufacture for the first time. Therefore, in all the cases the designs were to be developed, technological process established, jigs, tools and patterns

manufactured and raw materials to the required specifications and bought-out obtained. This necessarily took a longer time in the first instance. . . . . . It will, therefore, be appreciated that the delay in supplies of the equipment mentioned in the para is mainly due to the reasons inherent in the development of the machines for the first time and not due to lack of production planning".

7.11 The Expert Committee on Public Enterprises (ECOPE) appointed by Government in 1980 to examine the working of some of the important public enterprises in their report submitted to Government in June 1981 observed as under :—

— Items produced by the Company have not enjoyed the reputation with regard to their reliability, quality and price.

— The delays ranging from 3 to 4 years in implementing the orders have taken away the confidence of the customers.

— Comprehensive quality control scheme with stage inspection should be introduced forthwith.

In reply to a query raised by the Audit Board in regard to the system of quality control, the Ministry stated (April 1983) as under :

"A full fledged Quality Control organisation exists in M.A.M.C. The Quality Control is exercised as follows :

(a) Inspection of incoming raw materials and stores based on manufacturers certificate or testing of each consignment depending upon its importance and other circumstances.

(b) Inspection of jigs and fixtures.

(c) Inspection of all graded iron and steel castings through test bars in Company's own laboratory, testing of sand, coarse sand and moulding inspection round the shift, inspection of castings before being sent to Fettling Shop.

(d) Inspection of forgings and segregation of forging through colour codes.

(e) Checking of blanks.

(f) Carrying out stage inspection.

(g) Assembly inspection.

(h) Final testing and issue of inspection certificate.

(i) Inspection of sub-contractors' premises before off-loading/purchasing to assess their technical capability".

7.12 It will be seen from the foregoing paragraphs that while the capacity of the Company has been grossly under utilised, the coal industry has not been placing adequate orders on the Company for one reason or the other and at the same time the Company has not been able to execute orders on hand in time.

8. **Pricing Policy**

8.01 The Board of Directors of the Company laid down from time to time guidelines for submitting quotations to the customers. In September 1970, the Board decided that with a view to minimising losses and absorbing over-heads, the Company could submit tenders covering only the direct cost and some portion of fixed over-heads. In February 1971, the Board further decided that the quotations to customers should be competitive and not higher than the ruling market prices. In

December 1973, the Board appointed a Pricing Committee which *inter alia*, recommended as follows :—

(a) The prices quoted should be fixed taking into consideration :

— Cost of manufacture.

— Prices of similar equipment supplied by other manufacturers.

— Capacity of the market to pay.

(b) A reliable cost data should be developed to enable realistic cost estimates.

(c) The extent of indirect overheads to be loaded would depend upon the capacity of the market to bear, and on all matter of judgement considering various factors.

The above recommendations were approved by the Board in June 1974. Quotations including those for turn-key projects were submitted in terms of above guidelines.

Owing to the constraints of lack of orders for conventional mining equipment and the need to diversify the clientele and products, orders were generally booked at ruling market prices. The Company incurred losses in the execution of a number of such orders partly because of booking orders at the ruling market prices and partly because of defective estimates of costs. Illustrative cases, where the Company incurred loss in totality are given in Annexure-VI. Considering the heavy cost and time over-run in the implementation of orders, the Audit Board in the meeting with the representatives of the Ministry observed inadequacy of the project monitoring and control system of the Company. The Audit Board desired to know the measures the Company had taken to strengthen this area. The Ministry stated (April 1983) that system of the project monitoring had been strengthened and measures for cost over-run have been formulated as mentioned in Annexure-VII.

8.02 In reply to a query raised by the Audit Board, the Management listed out (December 1981) the following weaknesses in the procedure for submission of quotations for turn-key projects existing at that time :

- There was no single technical co-ordinating agency and sometimes total scope of work as per tenders was not covered between various design wings.
- In the absence of initial layout, the Company generally followed the basic layout given in the notice inviting tender.
- Cost of civil works was evaluated only on the basis of notional rate.
- Design parameters like soil properties, load etc. assumed in arriving at an estimated cost were not clearly stipulated.
- Tender drawings were reproductions from notice inviting tenders and no pre-engineering was done by the Company.
- During post-tender negotiations, financial implications resulting from clarifications/confirmations were not assessed properly.
- The factor of likely increase in cost of bought-out items was not taken into consideration.

8.03 In order to overcome the above weaknesses the Company formed in August 1978 a System Engineering Division. In August 1979 the Company formulated pricing policy for submission of quotations to the customers and for undertaking export. The pricing policy applicable from 1st September 1979 fixed the priorities as under :

- to secure orders which would help the Company in bidding competitive rates in the market.
- to give priority to those equipments in the order of available margin ; and
- thereafter to the equipments, the manufacture of which will cover entire cost and if not, at least to those which will cover the variable cost and maximum amount of fixed overheads.

This pricing policy was suspended in November 1980. Of the orders received during the period from 1st September 1979 to November 1980, the Company analysed the orders valuing Rs. 10 lakhs and above under the said three categories and the following position emerged :—

	Value (Rs. in lakhs)	No. of orders
(*i*) Covering full cost with a margin . .	1058.67	10
(*ii*) Covering full cost but without margin .	25.11	2
(*iii*) Covering variable cost and part of fixed overheads only	2299.41	21
	3383.19	33

The Ministry stated (April 1983) as under :—

> "In view of the changed market following a sizeable export order, the policy made in 1979 has been suspended and is under review. Efforts are being made from November 1980 onward to secure orders covering full costs plus margin".

> "The present pricing policy of covering full cost is no doubt a deterrant in obtaining orders but with higher

> levels of sophistication in production and concentration on repetitive items the constraint is expected to be removed".

9. Machine Utilisation

9.01 The Company did not maintain log books in respect of each machine to indicate the actual utilisation of machines against the available hours and the extent of idle time of machines alongwith the reasons therefor. In the absence of such records it was not possible to locate the areas of avoidable idle time of machines. The Ministry stated (January 1983) as follows :—

> "Instructions have since been issued to maintain records of idle time in respect of key productive machines. These records will be maintained by the shops in the form of log books. After maintenance of log books in respect of key machines is established, the question of extending such records to all the centres will be considered".

The available hours on two shift basis for all the machines and actual hours of utilisation thereof, as furnished by the Management, for the five years ending 1981-82 are shown below :—

(Figures 000 hours)

Year	Available Machine hours	Hours used	Idle hours	Percentage of idle hours to available hours	Break-up of idle hours	
					Down time	Other causes
1977-78	1956	1063	893	45.65	66	827
1978-79	1956	1100	856	43.76	82	774
1979-80	1956	1160	796	40.70	117	679
1980-81	2016	1295	721	35.76	100	621
1981-82	2016	1227	789	39.15	130	659

It will be seen from the above table that the extent of idle hours of machines during the five years ended 1981-82 ranged between 35.76 and 45.65 per cent of available hours. The break-up of idle hours falling under 'other causes' was not available with the Management.

The high percentage of idle hours was attributed by Management (December 1981) to the following reasons :—

(i) Out of total machine idle hours, down time on account of plant preventive maintenance and breakdown constitute 10 to 15 per cent.

(ii) Change in product-mix has rendered some machines under loaded or idle for want of load.

In regard to abnormal increase in down time in 1979-80, the Management stated (October 1982) as follows :

> "The machine and equipment are in use for more than 16 years and quite a number of machines being in continuous operation require capital overhauling/major repairing".

The particulars of machines which are under loaded and which have no load are indicated in Annexure VIII.

9.02 *Idle Machines and Equipment*

A number of machines and equipment have been lying idle since the dates of their purchase/erection.

The table below indicates the number of machines and equipment remaining idle, their year of purchase/erection, value and reasons for non-utilisation :—

Sl. No.	Item	Year of purchase/ erection	Value (Rs. in lakhs)	Reasons for non-utilisation
1.	24 machines imported from USSR.	1964–65 to 1969–70	25.55	Due to diversification of production profile these machines were not required for production.
2.	Furnace . .	1975–76	1.62	Due to large scale cancellations and deferment of orders by CIL, this was not installed.
3.	Coal Plough parts and 38 Pushers.	1967–68	8.16	Coal plough imported from USSR not found suitable in cutting hard Indian coal. Pushers sold to PPCL who returned 34 Pushers in February, 1982.
4.	2 Ural Coal cutting machines.	1975–76	4.85	Imported from USSR for sale to CMAL (now CIL) and BCCL but not taken by them.
5.	704 Rectangular Friction props.	1970–71	2.29	Manufactured and sold to PPCL. Found unsuitable for use in mines by them.
			42.47	

In respect of utilisation of the above machines and equipment, the Ministry stated (January 1983) as follows :—

24 machines.—There is no possibility of utilising these machines immediately. A Committee has been appointed to assess possibility of their utilisation and to suggest further action in case these cannot be used.

Furnace.—This has since been installed in the Fettling Shop and is proposed to be used for heat treatment.

Coal Plough and Pushers.—Utilisation of 34 pushers is under consideration and the matter regarding balance 4 pushers is under pursuance with PPCL.

2 Ural Cutting Machines.—An offer to buy back has been received from USSR which is under pursuance.

9.03 *Group wise utilisation of machines*

The High Level Committee appointed by Government in August 1978 for making an indepth study into the working of the Company, made an assessment of utilisation of individual groups of machines and percentage utilisation of available man hours to credit hours for the year, 1975-76 to 1977-78. Groupwise machine utilisation and percentages of available man hours for 1977-78, as computed by the High Level Committee and similar information for subsequent years ending 31st March 1982, as furnished by the Management are given below :

Sl. No.	Machine Group	Installed capacity in hours per year (3 shift basis)	Percentage of Utilisation of plant capacity					Available man-hours per year	Percentage utilisation of available men-hours to credit hours				
			1977-78	1978-79	1979-80	1980-81	1981-82		1977-78	1978-79	1979-80	1980-81	1981-82
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.	Lathe (a)	4,55,625	35	39.00	30.80	45.38	70.88	2,99,250	53.29	58.6	46	66.9	69.4
2.	Lathe (b)	42,525	15	34.00	33.02	31.37	55.70	31,500	19.95	63.0	60	55.5	63.7
3.	V. Boring (a)	1,15,425	37	31.00	31.00	36.00	67.61	90,000	48.00	56.8	56.76	66.36	63.2
4.	V. Boring (b)	12,150	37.6	49.00	50.44	53.12	47.30	9,000	50.84	26.24	26.54	27.89	46.3
5.	H. Boring	1,45,800	32.6	25.00	30.00	36.42	56.61	96,750	49.22	41.90	50.12	60.68	57.0
6.	Shaping	36,450	52.32	56.00	31.00	31.75	72.32	29,250	66.2	90.7	97.72	98.67	70.3
7.	Slotting	30,375	28.2	26.37	25.00	28.00	66.84	22,500	38.1	39.56	39.07	39.97	73.4
8.	Planning (a)	54,675	27.75	26.00	27.00	31.00	43.39	31,500	48.1	45.00	47.16	48.11	44.0
9.	Planning (b)	6,075	33	43.25	41.00	45.00	56.98	4,500	44.65	58.40	57.60	62.04	56.6
10.	Plano Mill	30,375	32.4	25.00	31.74	35.44	52.17	18,000	54.77	54.38	64.19	71.15	71.5
11.	Milling	1,76,175	7.7	14.00	11.66	13.00	27.78	96,750	14.00	61.05	52.02	57.79	65.7
12.	Drilling	1,51,875	22.52	65.80	64.50	66.00	30.00	78,750	43.43	60.79	60.15	62.02	44.6
13.	Gear Cutting	1,70,100	26.3	25.00	23.77	25.63	37.12	76,500	58.53	62.66	59.38	63.29	49.5
14.	Cyl. Grinding (a)	42,525	40.36	26.00	18.47	29.48	54.80	22,500	76.28	76.68	52.71	84.24	69.2
15.	Cyl. Grinding (b)	6,075	32.92	12.00	15.00	35.27	74.44	4,500	44.44	14.87	16.45	43.97	86.8
16.	Int. Grinding	24,300	2.6	10.14	12.00	13.00	14.12	4,500	16.57	20.55	21.66	19.39	104.0
17.	Surface Grinding	18,225	—	—	—	—	—	2,250	—	—	—	—	—
18.	D. Turret	1,27,575	41.87	24.00	29.25	40.00	66.82	87,750	60.87	49.47	60.00	81.72	78.9
19.	H. Turret	97,200	20.89	17.00	20.90	20.26	27.47	40,500	50.04	41.70	49.00	46.53	49.4
20.	Six Spindler	24,300	33.3	24.33	32.80	32.90	60.66	18,000	44.96	56.47	75.37	75.52	70.5
21.	Hyd. Lathe	30,375	9	13.54	14.00	15.00	11.30	6,750	40.40	22.60	23.39	23.50	29.5
22.	Pipe Cutting	6,076	40.19	39.63	42.73	50.79	81.45	4,500	54.26	54.06	59.03	67.37	73.2
23.	Facing and Centering	12,150	17.9	12.00	14.00	15.00	26.11	4,500	48.37	19.36	19.70	20.60	50.4
	TOTAL		28.46	27.74	27.36	31.73	47.91	10,80,000	46.60	48.88	49.73	56.51	63.05

(1) Credit hours and installed capacity on 3 shifts.

(2) Credit hours and attendance hours.

(3) 'Credit hours' are the standard equivalent man-hours of the direct workman.

(4) Installed capacity has been arrived at in the following manner:

No. of machine X Duty hours per shift X No. of shifts (3) X No. of working days in year.

(5) (a) stands for light/small capacity machine

(b) stands for higher capacity machine.

In this connection the following points are of interest :—

(i) The overall utilisation of all the groups of machines has been 28, 28, 27, 32 and 48 per cent of installed capacity during the years 1977-78, 1978-79, 1979-80, 1980-81 and 1981-82 respectively.

(ii) While the percentage utilisation of Surface Grinding machines was nil, the percentage utilisation of Internal Grinding, Hyd. Lathe had ranged between 2.6 to 15 during the years 1977-78 to 1981-82.

(iii) As against the overall percentage utilisation of groups of machines of 28, 28, 27, 32 and 48, the relevant percentage utilisation of available man hours was 47, 49, 50, 57 and 63 during the years 1977-78, 1978-79, 1979-80, 1980-81 and 1981-82 respectively.

The Management stated (December 1981) as follows :—

> "Due, however, to the change in product-mix the loading of machines in the plant is not uniform. Some machines are over loaded and have to be operated in three shifts while some other have adequate load for two shifts and some only for single shift. There are also machines which are under-loaded and some which have no load."

9.04 *Steel & Iron Foundry*

The Management have not fixed any norms for melting loss, rejections and percentage of good castings to input in the two foundries. The table below indicates the overall performance of the two foundaries during last seven years ending 31st March 1982.

(Figure in per cent)

Sl. No.	Particulars	1975-76	1976-77	1977-78	1978-79	1979-80	1980-81	1981-82
A.	**STEEL CASTING**							
(*i*)	Shop returns to total charges . .	50.4	50.1	52.1	47.5	48	48.2	50.00
(*ii*)	Rejection to gross production . .	1.8	1.1	1.0	1.0	0.72	0.40	0.62
(*iii*)	Melting loss	8.4	9.9	10.7	8.9	8.2	9.00	9.2
(*iv*)	Good casting produced to total material Input	41.2	38.9	37.2	43.6	43.8	42.8	40.7
B.	**IRON CASTING (FERROUS)**							
(*i*)	Shop returns to total charges . .	31.6	29.6	34.0	29.8	27.8	26.72	27.99
(*ii*)	Rejection to gross production . .	—	—	—	1.5	—	—	—
(*iii*)	Melting loss	6	6	6	6	6	6	5.94
(*iv*)	Good casting produced to total material input	62.4	64.9	60	64.2	66.2	67.3	66.00

10. Manpower Analysis

10.01 *Personnel Strength*

The table below indicates the staff requirement for the 45,000 tonnes plant as envisaged in the Detailed Project Report and the actual strength there-against at the end of the years 1976-77 to 1981-82 :

Sl. No. Category of Staff	Staff as per DPR for 45,000 tonnes stage	As on 31-3-77	As on 31-3-78	As on 31-3-79	As on 31-3-80	As on 31-3-81	As on 31-3-82
1. Workers .	3411	4196	4147	4072	4187	4260	4275
2. Engineers and Technicians .	415	966	1164	1230	1264	1291	1305
3. Office staff, clerks, etc. inside plant	242	137	90	101	92	91	92
4. Service personnel & guards .	176	717	631	601	511	519	531
5. Others (officials & staff of office) .	—	1124	1178	1135	1211	1213	1215
6. Total .	4244	7140	7210	7139	7265	7374	7418

The Management stated (February 1981) that staff requirement as envisaged in the D.P.R. did not cover all the spheres of the plant activities and subsequently M/s. VNIIPTUGLEMASH a Soviet Institute were appointed for working out additional requirement of manpower.

M/s. VNIIPTUGLEMASH in their report submitted in 1964 recommended additional manpower of 1,263 covering the following activities :

(a) Organisation of engineering provision of production ;

(b) Organisation of interplant (between shops and within each shop), production planning, operative accounting and control of production.

> The Ministry stated (January 1983) that the strength of certain departments not covered in the DPR as well as in the study conducted by M/s. Vniiptuglemash was 958 in addition to a a strength of 330 in respect of products covered by diversification.

Although actual production was much below the level of 45,000 tonnes mentioned in the DPR in all the years, actual strength of staff has always been in excess of that recommended in DPR for a capacity of 45,000 tonnes per annum. In this connection,the Ministry stated (January 1983) as under:

> "It is true there are certain areas where actual strength is more than that was projected in DPR, for the reasons that the Soviets had perhaps not been able to visualise the conditions operating in India."

Even after taking into account the extra strength of 1263 suggested by M/s. Vniiptuglemash and strength of 958 and 330 in respect of departments not covered in the DPR and by Soviet consultants, there was an excess strength of 623 as on 31st March 1982.

The High Level Committee appointed by Government in August 1978 recommended (December 1978) to redeploy existing personnel to meet the requirements at project site in order to remove the imbalance in the ratio (1.3 : 6) of Officers/Supervisors to workmen. The ratio of Officers/Supervisors to workmen as on 31st March 1982, however, stood at 1 : 3.2 In this connection, the Ministry, in their reply of January 1983 stated as under:

> "Though, the Company have deputed personnel to site, it did not alter the ratio. It has been decided, as a company policy to strengthen its Engineering Department by inducting more engineers. In course of time, therefore, the number of engineers is likely to go up thus reducing the ratio further."

10.02 *Productivity*

(i) The value of production per workman and per employee and the value added per workman and per employee during the last six years were as follows :—

(Rs. in lakhs)

	1976-77	1977-78	1978-79	1979-80	1980-81	1981-82
(*a*) *Value of production*						
(*i*) Per Workman .	0.839	0.400	0.620	0.751	0.741	0.908
(*ii*) Per employee .	0.493	0.230	0.354	0.433	0.428	0.523
(*b*) *Value Added*						
(*i*) Per Workman .	0.387	0.087	0.231	0.299	0.207	0.209
(*ii*) Per employee .	0.227	0.050	0.132	0.172	0.120	0.121

NOTE : The decrease in value of production during 1977-78 was due to adjustments made in the accounts for that year as mentioned in paragraph 12.02.

It will be seen from the above table that the value of production and the value added per employee and per workman which were the highest in 1976-77, registered a declining trend thereafter except 1981-82 in respect of value of production.

(ii) The average earnings per employee and the value added per employee together with the percentage of value added to average earnings per employee during the last six years were as follows :—

(Rs. in lakhs)

	1976-77	1977-78	1978-79	1979-80	1980-81	1981-82
(*i*) Average earning per employee .	0.107	0.116	0.116	0.130	0.143	0.157
(*ii*) Value added per employee . .	0.227	0.050	0.132	0.172	0.120	0.121
(*iii*) Percentage of value added to average earning per employee .	212	43	114	132	84	77

It will be seen from the above that the value added per employee as a percentage of average earnings per employee declined from 212 in 1976-77 to 77 in 1981-82.

10.03 *Output per Worker*

The table below indicates output per worker as per targets fixed for each year and actuals there against during five years ended 1981-82.

(Figures in tonnes)

	1977-78		1978-79		1979-80		1980-81		1981-82	
	Targets	Actuals	Targets	Actuals	Targets	Actuals	Targets	Actuals	Targets	Actuals
Iron Foundry	9.19	6.13	11.16	6.26	8.49	6.04	8.88	5.86	8.39	6.40
Steel Foundry	14.11	9.77	8.21	6.39	15.88	12.52	18.27	11.54	14.46	10.06
Forge Shop .	15.65	10.07	12.54	11.00	15.50	12.32	15.93	11.24	16.50	11.75
Fettling Shop .	21.49	13.46	21.76	12.93	22.49	15.61	22.48	24.55	20.15	12.17
Structural Shop .	9.07	5.31	9.90	7.74	9.48	7.58	12.58	8.94	10.85	8.61
Machine Shop-I	4.14	2.51	3.56	3.11	3.96	2.90	4.03	2.78	2.81	2.23
Machine Shop-II	9.09	4.50	8.77	5.61	8.15	5.23	8.91	6.27	7.73	5.53
Machine Shop-III	7.59	4.80	6.52	4.81	7.50	5.21	8.94	5.11	7.40	5.23

It would be seen from the above table that the output per worker was much below the targets. In terms of value (wages paid not backed by output), the shortfall in output of labour amounted to Rs. 56.25 lakhs, Rs. 37.92 lakhs, Rs. 42.61 lakhs, Rs. 58.85 lakhs and Rs. 49.14 lakhs in 1977-78, 1978-79, 1979-80, 1980-81 and 1981-82 respectively despite the Company having spent considerable money towards payment of incentives and overtime for all these shops. The payment of incentive and overtime for all these shops taken together during the period from 1977-78 to 1981-82 is indicated below :—

(Rs. in lakhs)

	1977-78	1978-79	1979-80	1980-81	1981-82
Incentive . .	17.91	16.28	18.37	28.20	27.41
Overtime . .	6.88	3.81	4.35	5.49	5.85

As regards gradual decrease in physical output per worker in the shop, the Ministry stated (January 1983) as follows :

> "The drop in the physical out-turn is because of more diversified nature of items".

10.04 *Incentive Scheme*

In June 1974, the Company introduced a modified incentive scheme in place of the existing incentive scheme. The salient features of the modified incentive scheme were :

(a) The scheme was applicable to all Industrial workmen covered by the Factories Act and other workmen covered by the existing incentive scheme. The modified scheme covered about 88 per cent of the total work force.

(b) The rates of incentive payment for different categories and classifications of workmen were fixed for productivity levels ranging from 35 per cent to 80 per cent.

(c) The productivity index in respect of those workmen whose output could be measured in terms of standard man-hours per unit of production was arrived at by dividing the total output measured in terms of standard time by the total attendance hours. The productivity index of other categories of workmen was computed as a percentage of the productivity index of the direct measured workmen.

A study of the working of the modified incentive scheme was carried out by the Management in May 1978. A report on the implications of the scheme put up to the Board of Directors reads, *inter alia,* as follows :—

"(a) A man who does not do even an iota of work keeps getting his normal wages without any penalty. He also keeps getting his promotion in his chronological turn.

(b) A man works more than 1 hour 52 minutes per day at leisurely pace gets entitled to productivity bonus. The bonus earnings corresponding to duration of activity per day are as follows :

Productivity Index	Corresponding duration activity per day	Incentive bonus per month (Rs.)	
		Skilled	Semi-skilled/ unskilled
Upto 35% . . .	Upto 1 hour-52 min.	Nil	Nil
33—45% . . . (average 40%)	2 hours-8 min.	29.25	17.25
45—70% . . . (average 57%)	3 hours-4 min.	101.00	60.00
70—80% . . . (average 75%)	4 hours-0 min.	144.75	91.25
Above 80% . . .	Above 4 hours-16 min.	151.00	95.00

It will be obvious from the above that :

(a) the scheme has a positive disincentive against working more than 4 hours 16 minutes per day ;

(b) on the whole it tends to place a premium on idleness. . . . .".

(b) The Management revised the scheme with effect from 1st March 1980 providing for payment of incentive bonus upto 100 per cent productivity index and also raising the minimum limit of productivity index entitling the workers to incentive bonus to 44 per cent from the existing 35 per cent.

The table below indicates the incentive payments and productivity indices under the incentive scheme during the five years ending 31st March 1982 :

Year	Incentive bonus paid (Rs. in lakhs)	Productivity index for incentive payment
1977-78	35.38	52
1978-79	34.54	51
1979-80	40.23	56
1980-81	50.98	63
1981-82	49.30	61

It will be seen that after revision of the scheme providing for incentive payment for productivity levels ranging from 44 to 100 per cent with effect from 1st March 1980 productivity index entitling payment of incentive bonus increased marginally from 56 in 1979-80 to 63 and 61 in 1980-81 and 1981-82 respectively.

(b) The Company paid an incentive advance of Rs. 325 for each unskilled and semi-skilled worker and equivalent grade and Rs. 425 per employee belonging to grades higher than the above upto and including the scale of Rs. 1100—1600 in September 1976 totalling Rs. 29.70 lakhs on the condition that the advance would be set off against payments due to revision of the incentive scheme which was then under consideration.

The Ministry stated (January 1983) that cancellation and deferment of orders in 1976 and 1977 led to a sudden drop in production during 1977-78 and so the scheme could not be revised.

In response to a demand from the labour side to waive the advance paid to them, Management in terms of Clause 30 of the Tripartite Settlement referred the matter to an Arbitrator who gave his award in September 1980. It was held by the Arbitrator that the advance should be written off since the incentive scheme on the basis of which the advance could be adjusted did not materialise.

The Management made a proposal to the Board of Directors in their meeting held on 19th February 1981 as follows :

> "That approval is hereby accorded to write-off of the incentive advance amounting to Rs. 29.70 lakhs paid to the employees in September 1976 and a sum of Rs. 62,025 deducted from retired/resigned employees on this account may be refunded to them".

The Board of Directors decided that the Department of Heavy Industry be requested to refer the matter to the Law Ministry for an opinion.

In pursuance of the directives of the Board of Directors, Management referred the matter to the Ministry of Industry, Department of Heavy Industry, Government of India in March 1981 for their opinion.

The Ministry of Industry, Department of Heavy Industry in their letter dated 3-6-1981 after consulting the Ministry of Law observed *inter alia* as follows :

> "This Department is in agreement with the advice given by the Law Ministry and is of the view that the Award would have to be accepted. Government would, however, take this opportunity to reitrate that the payment of such incentive advances should be avoided in future".

The amount has since been written off in the accounts of the Company for the year 1980-81.

11. Costing System

11.01 The Company follows process costing in steel, cast iron and non-ferrous foundries to find out cost of castings per tonne produced in these shops.

11.02 With a view to introducing a job costing system in other shops, the Company obtained the services of a firm of Chartered Accountants from January 1973 to July 1973. The Consultants after a study pointed out the following bottlenecks in the operation of a job costing system in these shops :

- Absence of division of sale orders into appropriate work orders.
- Absence of job-wise direct material booking.
- Absence of job-wise direct labour booking.
- Absence of job-wise direct labour hour records for allocation of shop overheads and the other works overhead.

The Management issued various circulars during the period from July 1973 to February 1975 giving detailed instructions for filling up basic documents. These efforts did not, however, help in developing the job costing for want of proper documentation in the primary records.

11.03 In January 1976, the Company appointed Shri M. V. Kamath, a private consultant for developing a logical system of accounting methods, cost accounting and management information system in the Company. The Consultant, *inter alia*, pointed out (March 1976) the following difficulties encountered in implementation of a proper cost accounting system :—

— Incomplete primary documentation on job card, material requisition etc.

— Delay in receipt of primary documentation in the cost accounting section.

— Documentation sometimes not sent at all.

The consultant suggested a system of compiling of cost by component. The suggested system, however, proved to be of no use in the absence of complete data in different primary records *viz.* job cards, time sheets, material requisition slip, etc. and also because of non-supply of basic cost data.

The Management decided in March 1981 to compile costs for jobs manufactured in the Company with effect from 1st April 1981 on the following lines :—

(a) Cost of standard products items will be compiled by components ('P' order), assembly ('G' order) and finally by sale order, stock order, spare order as the case may be.

(b) Cost of non-standard items, which are not included in (a) above, will be compiled by the relevant order such as sale order, internal work order, spare order etc. and not by 'P' and 'G' orders.

11.04 The costing system, however, had the following shortcomings due to incomplete documentation :

(i) Actual cost of the various jobs executed by the Company against different sale/stock orders during each year could not determined.

(ii) Finished product and WIP could not be valued at the year end based on cost or market price whichever was lower.

(iii) Job-wise/sale order-wise profitability analysis and the contribution of each product towards profit or loss of the Company was not possible.

(iv) Quotations submitted by the Commercial Department for all jobs were based on estimates and not on actual cost of similar jobs.

(v) Due to incomplete documentation, reconciliation between cost and financial accounts had not been possible.

(vi) Reasons for variations in different elements of cost of jobs of identical nature executed by the Company during a particular year were not known.

(vii) Total idle hours both for men and machines other than idle hours due to breakdown and preventive maintenance were not ascertainable.

(viii) Extent of under/over consumption of materials, under/over booking of labour and overheads in any particular job could not be identified and rectified in time.

The Ministry stated (January 1983) that "the deficiencies pointed out are the outcome of not being able to implement the complete costing system".

In reply to a query raised by the Audit Board about the improvements proposed to be introduced in the costing system, the Ministry stated (April 1983) as under:

> "In order to render the systems more effective and objective oriented a review was made (1982-83) when following shortcomings were observed:
>
> 1. Incomplete documentation with regard to sale order No. component and assembly reference number and the quantities and/or processes completed.
> 2. Frequent splitting up of batch quantities while drawing materials and/or processing thereby disrupting cost figure for a particular batch/unit.
> 3. Non-return of completed route cards to the Costing Section.
> 4. Difficulties in linking between component and assembly route cards.
> 5. Some volume of missing data details required.
>
> In order to overcome these shortcomings a Job Costing Manual has recently been drafted."

11.05 The High Level Committee appointed by Government, in their report submitted in December 1978 *inter alia* recommended for making Machine Shops Foundry and Forge units as independent cost centres accountable to result oriented performance in production, rejection and cost.

The above recommendation has not been implemented fully. The Ministry stated (January 1983) as under:

> "A part of the recommendation has been implemented inasmuch as the costs incurred in various shops are separately available. After this is stabilised it would

be possible to operate the total system to watch performance of individual centres. It is proposed to implement the monitoring system in totality during the year 1983-84. Even after the system is introduced, an element of notional valuation of inter-shop despatches would still remain."

12. **Financial Position and Credit Control**

12.01 The table below summarises financial position of the Company during the years 1977-78 to 1981-82 :

(Rs. in lakhs)

	1977-78	1978-79	1979-80	1980-81	1981-82
Liabilities :					
(*a*) Paid-up Capital	4380.00	4380.00	4380.00	4380.00	4485.00
(*b*) Reserve and Surplus . .	29.89	29.98	29.98	30.06	30.09
(*c*) Borrowings :—					
(*i*) From Govt. of India (Unsecured) . .	3058.00	4582.75	5551.69	6785.75	7980.34
(*ii*) From Bank (Secured) .	1938.33	1857.66	2090.33	2252.89	2331.70
(*d*) Trade dues and other Current Liabilities (including Provision) . .	3191.23	2667.80	2840.00	3040.28	3561.82
TOTAL .	12597.45	13518.19	14892.00	16488.98	18388.95
Assets :					
(*e*) Gross Block .	3692.50	3767.61	3800.97	3854.61	3921.15
(*f*) Less Depreciation . .	1931.07	2066.97	2187.13	2317.73	2447.75
(*g*) Net Fixed Assets	1761.43	1700.64	1613.84	1536.88	1473.40
(*h*) Capital Work-in-Progress .	29.12	32.78	31.68	33.37	43.16
(*i*) Investment .	1.26	1.26	1.26	1.26	1.26
(*j*) Current Assets and Loans and Advances .	4747.33	4726.00	5248.89	5352.09	6027.53

	1977-78	1978-79	1978-80	1980-81	1980-81
(*k*) Miscellaneous Expenditure & Loss . .					
(*i*) Deferred Revenue Expenditure .	Nil	Nil	27.77	16.89	16.21
(*ii*) Development Expenses .	51.40	44.70	37.90	23.33	11.61
(*iii*) Accumulated Loss . .	6006.91	7012.81	7930.66	9525.16	10815.79
TOTAL . .	12597.45	13518.19	14892.00	16488.98	18388.95
Capital employed .	3317.53	3758.84	4022.73	3848.69	3939.10
Net Worth . .	—1648.42	—2647.53	—3586.35	—5155.32	—6328.52
Debt equity ratio .	0.71 : 1	1.05 : 1	1.27 : 1	1.55 : 1	1.77 : 1

NOTES : (*i*) Capital employed represents net fixed assets plus working capital.

(*ii*) Net worth represents paid-up capital plus reserves less intangible assets.

12.02 *Verification and valuation of Inventories and Receivables*

(a) The State Bank of India, with whom the Company has cash credit facility, appointed in May 1978, a firm of Chartered Accountants, M|s. S. R. Batliboi and Company with the concurrence and approval of the company to report on verification and valuation of inventory and receivables (hypothecated assets) as on 31st March, 1978 so as to ascertain their fair value by way of security. The terms of reference included *inter alia* the work of locating obsolete/unserviceable and slow moving items and also to review and comment upon the correctness of the methods of valuation adopted by the Company. The firm of Chartered Accountants submitted its Report in August 1978. The findings of the firm based on physical verification of stock and scrutiny of various records for receivables indicated shortages of stores, over-valuation of raw materials and stores, work-in-progress, finished products, existence of large quantities of obsolete and unusable items and debts of doubtful realisability for which provision should be made.

The Board of Directors appointed a sub-Committee in August 1978 to pre-review the annual accounts of the Company for 1977-78 and look into the report of M|s. S. R. Batliboi and Company in so far as these affected the annual accounts for the year 1977-78. The sub-Committee accepted the valuations of inventories and receivables as mentioned in the report of the firm of Chartered Accountants and the Board of Directors approved (September 1978) the recommendations of the firm of Chartered Accountants and the sub-Committee for making provisions and reduction in valuation of inventories. The net effect of the adjustments|provisions made in the accounts for the year 1977-78 based on the recommendations of the firm is given below :

Item	Amount reduced/ written off		Amount for which provision made
			(Rs. in lakhs)
1. *Inventories*			
(*i*) *Raw materials/stores*			
(*a*) Items physically not traceable .	5.49		19.03
(*b*) Rate difference.	3.37		2.35
(*c*) Obsolete/unusable/slow-moving items	..		54.83
(*ii*) *Finished Products*			
(*a*) For Change in the method of valuation	103.21		
(*b*) Obsolete/unusable/slow-moving items			15.06
(*iii*) *Work-in-Progress*			
(*a*) For change in the method of valuation	81.27		
(*b*) Obsolete/unusable/slow-moving items			28.25
	193.34		119.52
2. *Receivables*			
(*i*) Sundry Debtors		117.98	
(*ii*) Sales-in-transit		23.78	
(*iii*) Deferred Accrued Income . .		2.71	
		144.47	
Less exiting provision . . .		32.47	112.00
TOTAL	193.34		231.52

The total amount written-off or provided for in the accounts for 1977-78 on the basis of recommendations of the Chartered Accountants thus worked out to Rs. 424.86 lakhs.

(b) *Input-output Ratio*

The sub-Committee appointed by the Board in August 1978 to pre-review the annual accounts of the Company for the year 1977-78, in their report, submitted to the Board in September 1978, observed that there was wide fluctuation in 1977-78 in the input-output ratios in plant production as well as AIDD and bought out components. The cost of direct input was substantially higher than the output in 1977-78. The input/output ratios during the years 1974-75, 1975-76 and 1976-77 were 47 per cent, 48 per cent and 51 per cent as against 125 per cent during 1977-78. In view of the abnormal variation in the input|output ratio and the existence of certain theoretical shortages, the Board of Directors decided (October 1978) that these should further be got scrutinised and the results of the scrutiny made available.

The report of a Departmental Committee constituted in pursuance of the Board's decision was deferred for consideration in the Board's meeting held on 27-11-1978.

A revised report of the Departmental Committee was put up to the Board of Directors in their meeting held on 6th December 1978.

While studying the reasons for abnormal variation in input/output ratio during the year 1977-78, the Committee found that the following factors were responsible for low value of production with consequent variation in input|output ratio during the year 1977-78 :

(a) Shortage of 761 tonnes of work-in-progress.

(b) Certain adjustments made in the accounts for 1977-78 resulting in reduction in value of inventories and Sales.

The factors mentioned by the Departmental Committee as responsible for wide fluctuation in the input|output ratio in 1977-78 are discussed below :

(a) *Shortage of 761 tonnes of work-in-progress* While compiling information for input/output and the balance materials, the Departmental Committee noticed that in 3 out of 6 shops examined, there was a short-fall of 761 tonnes of work-in-progress as per details below.

	(tonnes)
(*i*) Machine shop No. II	141.568
(*ii*) Machine shop No. III	181.695
(*iii*) Structural shop	438.032
	761.295

The Committee, however, did not analyse the reasons for these shortages. The Management conducted a further study in August 1979 and concluded that the shortages were due to difference between the actual weight and design weight and use of higher size of material as shown below :

(Tonnes)

Shop	Total production	Difference between actual and design weight	Percentage	Difference due to use of higher size of material	Percentage	Total difference	Percentage
Machine Shop II	1495.00	139.532	9.33	2.036	0.13	141.568	9.46
Machine Shop III	1584.00	173.381	10.94	8.314	0.52	181.695	11.47
Structural Shop	2226.00	156.410	7.02	281.622	12.65	438.032	19.67
	5305.00	469.323		291.972		761.295	

The excess of actual weight over design weight and the use of higher size of materials resulted in a loss of Rs. 101.25 lakhs including conversion cost which was not recoverable from the customers as the sale contracts did not provide for recovery of the cost of excess input in the process of manufacture.

The Ministry stated (January 1983) as under :

> "...........the additional expenditure would be the extra cost of raw material input multiplied by the value of the input which will be Rs. 8.66 lakhs and not Rs. 101.25 lakhs...........Steps have been taken to keep the final weight within the estimated weight when submitting quotation in future".

(b) *Adjustments*

The Departmental Committee observed that the following adjustments made in the accounts for 1977-78 resulting in reduction in value of inventories and sales also accounted for the abnormal fluctuation in input/output ratio during 1977-78 :

		(Rupees in lakhs)
(*a*)	Reduction in the value of work-in-progress due to	
	—impact of higher machine hour rate . . .	218
	—change in the method of calculation . . .	23
(*b*)	Reduction in the value of loose tools and non-standard equipment due to change in the method of valuation .	49
(*c*)	Reduction in the value of finished products and work-in-progress due to valuation at correct rates (these were valued at higher rates in the earlier years)	53
(*d*)	Reduction in sales due to supply of materials free of cost to the customers	70
(*e*)	Difference in the value of finished products as these fetched lower value than the value shown in the closing stock .	70
(*f*)	Excess rejections in work-in-progress and finished products during the year as compared to earlier year. . .	47
	TOTAL	530

The total amount written off or provided for in the accounts for 1977-78 on the basis of the recommendations of M/s. S. R. Batliboi and Company and as a result of other adjustments referred to above thus works out to Rs. 954.86 lakhs.

12.03 *Credit Control*

The table below indicates the position of book debts, sales and percentage of debtors to sales for the five years ending 1981-82 :-

(Rupees in lakhs)

	Sundry Debtors		Total Debts	Sales excluding stock transfer	Percentage of Debtors to Sales
	Good	Doubtful			
As on 31st March 1978	726.22	117.97	844.19	1901.82	44.38
As on 31st March 1979	981.46	136.27	1117.73	2620.12	42.65
As on 31st March 1980	946.13	127.86	1073.99	2931.03	36.64
As on 31st March 1981	826.13	199.83	1025.96	2989.43	34.31
As on 31st March 1982	1119.37	149.87	1269.24	3760.35	33.75

The Sundry Debtors represented about 5.3, 5.1, 4.4, 4.1 and 4.1 months' turnover in the year 1977-78 to 1981-82.

(ii) The details of debts outstanding for more than one year as on 31st March 1982 are indicated below :—

(Rupees in lakhs)

	Govt. Parties	Private Parties
Debts outstanding for more than one year but less than two years	129.49	3.94
Debts outstanding for two years and more but less than 3 years	67.01	0.59
Debts outstanding for more than 3 years . .	222.19	17.06

In this connection, the Ministry stated (January 1983) as under :

> "Brief reasons for withholding of amount over 3 years as on 31st March 1981, are as follows :—
>
> (1) Counter claims of Rs. 28 lakhs (approx).
>
> (2) Hold up on account of liquidated damages—Rs. 70 lakhs (approx).
>
> (3) Hold up on account of establishing performance of equipment/incomplete supplies—Rs. 25 lakhs. (approx).
>
> (4) Hold up on other account—Rs. 122 lakhs.
>
> (5) Not relating to sales—Rs. 26 lakhs.

12.04 *Sales-in-Transit/Deferred Accrued Income*

These represent value at sale order price or estimated/*ad hoc* prices of materials already supplied to customers for which bills could not be raised pending price finalisation, completion of delivery, delay in inspection of materials by the customers, delay in commissioning and expiry of guarantee period etc. These also include value of materials booked in previous years which are lying in the Company's stores pending inspection/acceptance. The table below indicates the position of sales-in-transit and deferred accrued income together with sales for the last five years ending 1981-82 :

(Rs. in lakhs)

	Total sales-in-transit	Total deferred accrued income	Sales	Percentage of Col. 1 to Col. 3
	1	2	3	4
As on 31-3-78	417.19	134.92	1901.82	21
As on 31-3-79	463.82	218.93	2620.12	17
As on 31-3-80	449.88	335.78	2931.03	15
As on 31-3-81	471.22	393.40	2989.43	15
As on 31-3-82	529.00	343.38	3760.35	14.07

The year-wise break-up of sales-in-transit and deferred accrued income as on 31st March 1982 is as under :—

(Rupees in lakhs)

	Sales-in Transit	Deferred Accrued Income
Less than 1 year	404.38	102.67
Between 1 to 2 years	39.76	42.96
Between 2 to 3 years	8.63	102.11
More than 3 years	76.23	95.64

As per Ministry (January 1983) the main reasons for which bills could not be raised for Sales-in-Transit are as follows :

- Incomplete supplies (Rs. 285 lakhs).
- Non-receipt of required documents for raising bills (Rs. 139 lakhs).

- Escalation claims (Rs. 39 lakhs).
- Finalisation of commercial terms with the customers (Rs. 60 lakhs).
- Performance not established (Rs. 6 lakhs).

Regarding deferred accrued income the Management stated (February 1981) as follows :—

> "Deferred accrued income is not realisable from the customer, unless contractual obligations are fulfilled. Most of these outstanding relate to projects and are payable on completion of the projects."

The Ministry further stated (January 1983) as follows :—

> "Since Company would now be gradually closing turnkey projects these figures are not likely to increase any further".

The provision for bad and doubtful debts in respect of sales-in-transit and deferred accrued income made in the accounts of the Company during six years ending 1981-82 is indicated below :

(Rs. in lakhs)

Year	Provision for Sales-in-transit made during the year	Provision for deferred accrued income made during the year	Total Provision ——— Sales-in-Transit	Deferred Accrued Income
1976-77 . . .	2.10	..	2.10	..
1977-78 . . .	21.68	2.70	23.78	2.70
1978-79 . . .	38.78	..	62.56	2.70
1979-80 . . .	19.65	..	65.15*	2.70
1980-81 . . .	Nil	22.97	38.04**	25.67
1981-82 . . .	6.22	..	44.26	25.67

*Excludes Rs. 17.06 lakhs written off during 1979-80 and

**Rs. 27.11 lakhs written off during 1980-81.

12.05 *Disputed Claims* :

Sundry Debtors as on 31st March 1982 include claims of the Company against the customers aggregating to Rs. 298.06 lakhs, which were in dispute.

The disputed claims fall under the following broad categories :

	(Rs. in lakhs)
(*a*) Liquidated damages	102.52
(*b*) Counter claims	98.89
(*c*) Incomplete Supply	11.41
(*d*) Price not finalised	1.75
(*e*) Non-acceptance	33.42
(*f*) Rejections	2.24
(*g*) Poor performance	14.84
(*h*) Absence of stores receipt Voucher/consignee receipt voucher	5.83
(*i*) Excise/Central Sales Tax variation	4.01
(*j*) Miscellaneous	23.15
TOTAL	298.06

The age-wise break-up of the disputed claims as on 31st March 1982 is shown below :—

	(Rs. in lakhs)
More than 3 years	160.07
More than 2 years but less than 3 years	23.89
More than 1 year but less than 2 years	59.60
Less than 1 year	54.50
	298.36

12.06 *Cash in flow and out flow* :

The table below indicates the cash inflow/outflow position alongwith the net deficit to the requirements of cash for meeting the immediate financial requirements.

SUMMARISED CASH FLOW

(Rs. in lakhs)

	1977-78	1978-79	1979-80	1980-81	1981-82
INFLOW :					
From customers Sales	1873.84	1438.73	2384.12	2678.49	3380.29
Advances	104.00	467.00	436.00	24.37	232.44
Other income	24.50	24.08	12.22	9.04	5.00
From Govt.	114.72	1300.82	599.74	779.52	1296.12
TOTAL	2117.06	3230.63	3432.08	3491.42	4913.85

	1977-78	1978-79	1979-80	1980-81	1981-82
OUTFLOW :					
Purchase	1206.68	1519.85	1970.04	1816.16	2885.68
Payment to Employees	825.76	906.33	893.04	1018.23	1077.33
Interest	237.93	294.56	332.64	348.63	420.86
Manufacturing and other expenses	200.76	395.73	456.75	425.00	567.95
Capital Expenses	90.20	33.49	28.32	44.88	57.57
TOTAL	2561.33	3149.96	3680.79	3652.90	5009.39
Surplus (+) / Deficit (—)	(—)444.27	(+)80.67	(—)248.71	(—)161.48	(—)95.54
Borrowing from Bank at the beginning of the year	(—)1494.06	(—)1938.33	(—)1857.66	(—)2106.37	(—)2267.85
At the end of the year	(—)1938.33	(—)1857.66	(—)2106.37	(—)2267.85	(—)2363.39
Cash credit Limit	1850.00	2050.00	2050.00	2381.78 (including Rs. 331.78 lakhs from Export Packing credit account)	2453.00 (including Rs. 403 lakhs from Export Packing credit account)

The adverse cash flow position was mainly because of cash losses as the contribution from sales was less than the fixed expenses of the Company and high percentage of sundry debtors to sales.

The Management stated (December 1981) that the following steps have been taken to improve the cash flow position :—

- Fixation of remunerative selling prices.
- Increasing the production with better product mix.
- Improvement in the sales realisation *i.e.* reduction in sundry debtors, sales-in-transit and deferred accrued income.
- Reduction of the stock of inventories.

13. Material Management and Inventory Control.

13.01 *Purchase procedure-Invitation of tenders*

The purchase procedure of the Company provides for calling of open tenders where the estimated value of the order exceeds Rs. 1 lakh (Rs. 0.25 lakh upto 29th August 1977). It was, however, noticed that open tenders were not invited in a number of cases where the value of the orders exceeded Rs. 1 lakh each. The table below indicates the total number of cases where the purchases were made by the Company by inviting open tenders, special limited/limited tenders and single tender during five years ending 1981-82 :

(Rs. in lakhs)

Year	Total No. of tenders	Value	No. of Open tenders by Advertisement	Value	No. of Special tenders	Value	No. of Limited tenders	Value	No. of single tenders	Value
1	2	3	4	5	6	7	8	9	10	11
1977-78 .	1351	NA	46	NA	53	NA	1237	NA	15	NA
1978-79 .	1544	NA	35	NA	40	NA	1400	NA	69	NA
1979-80 .	1784	1364	86	581	46	360	1509	276	143	147
1980-81 .	1692	3916	114	893	102	1482	1256	942	220	599
1981-82 .	1554	2500	27	303	139	1207	1065	178	323	812

In regard to calling special limited tenders, the Ministry stated (January 1983) as follows :—

> "The procedure provides for calling special limited tenders in cases where value exceeds Rs. one lakh for reasons to be recorded by the authority to whom powers in this respect have been delegated. These special circumstances include :—
>
> (1) Limited sources of supply, and
>
> (2) Urgent requirement which cannot wait for formalities inherent in purchasing through advertised tenders.
>
> Special limited tenders in cases exceeding one lakh in value have been called in terms of the procedure for reasons recorded on each of the files".

A test check of a few purchase cases in which purchases were made on special limited tender basis on the grounds of urgency etc. revealed that the Company failed to procure materials within the expected delivery dates in a number of cases.

13.02 *Inventory holdings*

The following table indicates the comparative position of inventory as it the end of the last five years ending 31st March 1982 :—

(Rs. in lakhs)

	1977-78	1978-79	1979-80	1980-81	1981-82
Raw materials & stores & spares . .	1156.52	1006.08	1234.83	1095.94	1121.70
Loose Tools . .	162.81	168.30	167.60	159.40	168.82
Work-in-progress. .	864.00	778.92	827.49	841.93	991.64
Finished products .	494.76	346.78	429.93	471.96	334.06
	2678.09	2300.08	2659.85	2569.23	2616.22

The stock of raw materials, stores and spares represented 12.8 months consumption in 1981-82 as compared to 12.3 months consumption in 1980-81, 14.8 months in 1979-80, 12.4 months in 1978-79 and 21.7 months in 1977-78 respectively.

In December 1973, the Company fixed norms of inventory holding under different categories, which were revised in February 1976. On a review of these norms the Bureau of Public Enterprises recommended in 1977 modified norms, which were followed by the Company till 1979-80. The Bureau of Public Enterprises recommended further revised norms in August 1978 which are being followed by the Company from 1980-81 onwards. An analysis of the inventories under different categories indicated that the actual holding of inventories in the case of a number of items was in excess of the latest norms as per details below :—

Year	Excess holding (Rs. in lakhs)
1978-79	159.80
1979-80	212.17
1980-81	205.85
1981-82	161.08

In this connection the Ministry stated (January 1983) as follows :—

- The excess inventory holding figures show a gradual improvement since 1979-80.
- Efforts are continuing to reduce the excess holding.

13.04 *Non-moving items of Stores*

The table below indicates stores which had not moved for more than one year and above during four years ending 1981-82.

(Rs. in lakhs)

Period	1978-79		1979-80		1980-81		1981-82	
	Maintenance and construction stores	Production Stores	Maintenance and construction stores	Production stores	Maintenence and construction stores	Production Store	Maintenance and construction stores	Production Stores
Non-moving stores :								
For more than one year .	45.66	73.63	36.28	46.77	37.03	63.78	27.18	67.72
For more than two years .	19.78	21.28	35.04	51.30	25.74	25.73	39.88	39.31
For more than three years	58.96	24.99	73.23	35.16	95.85	61.83	127.14	60.98

It will be seen from the above table that the value of stores which did not move for a period of over three years has shown a constantly increasing trend except production stores which decreased slightly during 1981-82. The Ministry stated (January 1983) that effort were being made to reduce the non-moving inventory.

13.05 *Obsolete Stores*

A firm of Chartered Accountants (M/s. S. R. Batliboi and Company), in their Report on 'Verification and valuation of Inventories and Receivables' submitted in August 1978 categorised items of stores lying in stock for 5 years and over as on 1-4-1978 as obsolete items. The items include electrical and maintenance spares, motors, starters, telecommunication equipment and foundry materials. The value of obsolete stores so determined by the firm came to Rs. 30.77 lakhs (approx.).

Though the Company provided for obsolete items in the annual accounts for 1977-78, these items, however, continue to be held in the stores and priced ledger. The Ministry stated (January 1983) that stores worth Rs. 8 lakhs (approx) have been used.

13.06 *Materials-in-Transit*

A number of imported items were lying in bonded warehouse pending their clearance by paying customs duty and warehouse rent.

The total value of such materials lying in bonded warehouse was as under :

(Rs. in lakhs)

As on	31st March 1977	31st March 1978	31st March 1979	31st March 1980	31st March 1981	31st March 1982
Value of materials	56.00	224.58	51.28	49.39	45.01	53.61

On a scrutiny of the Bonded Warehouse statements, it was noticed that a number of these stores had been lying in the warehouse from August 1977 onwards and as on 31st March 1981 materials worth Rs. 24.26 lakhs had been lying in the warehouse for more than 3 years. The amount of warehouse rent paid for storage of the various items in the bonded warehouse during five years ending 1981-82 is as under :

Year	Warehouse rent
	(Rs. in lakhs)
1977-78	1.82
1978-79	1.95
1979-80	1.07
1980-81	2.62
1981-82	2.91

The Ministry stated (January 1983) as follows :

— The materials have been taken to bonded warehouse due to lack of funds.

— Out of materials worth Rs. 24.26 lakhs which have been lying for more than 3 years, items valued at Rs. 3.74 lakhs have since been drawn for use and items valued at Rs. 3.70 lakhs are likely to be used against future requirements. All other items are either maintenance spares or spares for the imported portion of equipment supplied to CIL, which will be drawn as and when required.

13.07 *Payment of port rent*

(i) In response to a purchase order placed in November 1976, a foreign supplier shipped (October 1977) 88 cases of Hydraulic Props. etc. valuing Rs. 47.19 lakhs (f.o.b.), per vessel 'SS Jalakrishna' which arrived at Calcutta port on 28th January 1978. The Calcutta Branch Office of the Company requested the Finance and Accounts Division of the Company at Durgapur on 3rd February 1978 to issue a cheque on account of ocean freight amounting to Rs. 1.72 lakhs immediately for payment to the Shipping Company as the consignment had already started incurring port rent. The Finance and Accounts Division sent a cheque for an amount of Rs. 1.72 lakhs to the Calcutta Branch Office only on 14-3-1978. The ocean freight was paid by the Calcutta Branch Office on 15-3-1978 and delivery of the consignment was taken in batches from 25th March 1978 to 31st March 1978 excepting in one case customs clearance of which was obtained on 16-2-1979. The Company had to incur port rent amounting to Rs. 1.03 lakhs while taking delivery of the consignments from port authorities due to delay in payment of ocean freight.

The Management stated in August 1979 that there had been a total delay of 60 days in clearing the cargo after taking into account 4 days' time allowed by the port authorities after arrival of the ship. The total period of delay was attributed to three main reasons as under :—

On account of late receipt of freight bill	6 days
Due to paucity of funds	39 days
On account of difficulties in clearing the cargo	15 days

(ii) The Company placed a purchase order in March 1979 with a foreign firm for import of components at a total cost of DM 1119630.4. The components were required for Reclaimer and Wagon Loader for Maghahatuburu Iron Ore Project and for Reclaimers for Paradip Port. Three vessels carrying the imported components arrived at Haldia and Calcutta Ports, as per details below :—

Particulars of Vessels	Date of arrival	Port
1. Dagas/Gauguin	27-3-1980	Haldia
2. Leningrad	14-4-1980	Calcutta
3. Sternenfals	20-4-1980	Calcutta

The consignments could not be cleared in time and there was a time lag of 10 to 11 months between the arrival of the vessels and clearance of the consignments from the customs which resulted in a payment of Rs. 3.44 lakhs as port rent.

The following factors were mainly responsible for delay in the clearance of the consignments and consequential payment of port rent :—

(a) Technical clarifications could not be furnished by the Management to the customs till 19 May 1980.

(b) An *ad hoc* payment of Rs. 21.39 lakhs received from Meghahatuburu Iron Ore Project covering 80 per cent f.o.b. value of the consignments on 29th March 1980 for the purpose of making payment of customs duty and expeditious despatch of the consignments to the site was not utilised for the purpose for which it was received.

(c) Protracted correspondence between the Calcutta Branch Office and the Head quarters which ultimately resulted in delayed clearance.

The Management stated (February 1982) as follows :—

> "The customs authority wanted us to submit the details to enable them to satisfy about the end use of the materials imported by us to assess the custom duty as per tariff ruling. In addition to the technical clarifications given by our engineers they wanted us to submit necessary papers with catalogues/pamphlet and other supporting documents. Customs officials in the first instance were not agreeable to accept our clarifications and persuasion in this regard had to be made for days together. It also took time to collect necessary technical documentations from our overseas suppliers. All these were responsible for the time it took in process of clearance".

Had the consignments been stored in the warehouse immediately after the technical clarifications were furnished to the customs, the payment of a major portion of port rent amounting (Rs. 3.44 lakhs could have been avoided.

13.08 *Loose Tools*

Stock of loose tools valued at Rs. 36.19 lakhs was lying in stores without any issue since 1964-65. These tools were supplied by USSR in 1964-65 with the inception of the Company. These were surveyed by the Company in 1977-78 and revalued at Rs. 8.82 lakhs on considerations of long storage and not much scope to utilise these. The Ministry stated (January 1983) that efforts were continuously being made to use some of these tools.

13.09 *Non-moving finished and semi-finished products*

The Management formed a Committee in March 1979 to review all items of finished and semi-finished products which had not moved for a long time. The Committee found that a number of non-moving items of finished products and work in progress were not usable for the following reasons :

1. Order cancelled.
2. Rejection by customer.
3. Obsolete design.
4. Rusted and badly fitted.
5. No demand for the items.
6. Order completed and no further demand.
7. Defective items.

The quantity of such unusable items was assessed at 1927.75 tonnes as per details below :

	Weight (Tonnes)	Value (Rs. in lakhs)
Finished products	948.23	92.40
Workinprogress	979.52	90.90
	1927.75	183.30

The Committee estimated that the realisable value of these items as scrap was only Rs. 26.80 lakhs. Accordingly an amount of Rs. 156.50 lakhs was provided for and the items reduced to the value of Rs. 26.80 lakhs in the accounts for the year 1978-79.

979.52 tonnes of work-in-progress (original value Rs. 90.90 lakhs) was used in foundries as scrap at a total value of Rs. 13.96 lakhs.

Out of 948.23 tonnes of finished products, 502.51 tonnes (original value : Rs. 67.91 lakhs, salvage value : Rs. 23.35 lakhs) could be salvaged and used for further production in ball and socket, idlers, conveyors, structure, salt scraper and forged shaft. The balance quantity of 445.72 tonnes (original value : Rs. 24.49 lakhs) could not be salvaged.

The total loss on these items worked out to Rs. 139.95 lakhs after excluding Rs. 6.04 lakhs being the scrap value of 445.72 tonnes of finished products which could not be salvaged.

In this connection, the Ministry stated (January 1983) as follows :—

> "In Engineering Industry it is not possible to manufacture the exact quantity and most times manufacture is taken for excess quantities to cater for the likely rejection. If this is not done, the cost of making small quantities in case of a subsequent rejection, would be substantially higher when making the item a second time. Such excess quantities can sometimes be sold to the customers. The loss computed for items for FP and WIP mostly pertain for those manufactured in excess of the sale order quantity. Loss on this account, has, therefore, to be related to the period for which these pertain.... these pertain for the period commencing 1970-71 and represent 4.22 per cent of the total production during these years".

14. **Profitability Analysis and Financial Management**

14.1 *Profitability analysis*

The costing system followed by the Company does not provide for allocation of fixed and variable costs to the various lines of production with the result that it was not possible to ascertain the contribution made by the different lines of production to the profit or loss of the Company. The total income, variable costs and fixed costs of the Company as a whole for six years ending 31st March 1982 are tabulated below :—

(Rs. in lakhs)

	1976-77	1977-78	1978-79	1979-80	1980-81	1981-82
1. *Total Income*						
(*a*) Value of production . .	3522.88	946.18	2524.44	3146.34	3156.23	3880.83
(*b*) Other income . . .	37.03	37.87	39.21	66.36	67.74	60.48
	3559.91	984.05	2563.65	3212.70	3223.97	3941.31
2. Variable costs	2143.04	1563.60	1941.55	2204.32	2518.83	3343.58
3. Contribution	1416.87	(—)579.55	622.10	1008.38	705.14	597.73
4. Less fixed costs	1341.42	1685.55	1615.73	1962.15	2255.00	1885.25
5. Profit(+) / Loss (—) . . .	(+)75.45	(—)2265.10	(—)993.63	(—)953.77	(—)1549.86	(—)1287.52

The income in the year 1977-78 did not even cover the variable costs mainly because of the several accounting adjustments effecting value of production referred to in the paragraph 12.02. The contribution from income during the years 1978-79, 1979-80, 1980-81 and 1981-82 could cover only 38.50 per cent, 51.39 per cent, 31.27 per cent and 31.70 per cent respectively of fixed costs of the Company.

14.02 *Budgetary Control*

The BPE had issued instructions to all Public Sector Undertakings in March 1968 for compiling a comprehensive budget manual to include the norms for compiling the basic information necessary for preparation of a budget, time schedule indicating all stages from the start of budget preparation to its approval, the responsibility of cost centres, financial powers related to budgetary levels, the constitution and function of the Budget Committees and detailed procedures for exercising budgetary review for exercising budgetary control. In this conection, the following points deserve mention.

- The Budget manual is yet to be compiled by the Company (March 1983).
- The cost centres though established did not have prescribed norms of accurate operations.
- System of detailed periodical analysis of the reasons for variations in each cost centre is not in force.
- Budgetary review of production as made by the Company in the form of review of progress and submitted to the Board on quarterly basis indicated the general causes of variations without pin-pointing the deficiencies and defects of various shops which contribute substantially to the non-realisation of the original target.

- No procedure has yet (March 1983) been introduced to fix responsibility for shortfall in reaching the budgeted output.

In this connection, the Ministry stated (January 1983) as follows :

> "The system of budgetary control is being tightened and a time bound programme has been introduced for laying down various systems. This is likely to be completed in 1983-84".

Though budgetary allocations were made to all the cost/ responsibility centres during the year 1981-82 and actual costs for all these cost centres were compiled for the months of April, May and June, 1981 but no exercise comparing the budget with the actual expenditure (except TA and Overtime) has yet been made (January 1982).

The Management stated (November 1982) that 'the position has improved in 1982-83 and computer runouts of actual monthly expenditure against each account head is being collected from the detailed vouchers passed for payment. Any excess trend will be marked and sent to the departmental heads concerned to exercise control for future expenditure so as to keep within the budget allocation'.

14.03 *Accounting System*

In reply to the recommendation No. 37 of the Committee on Public Undertakings (65th Report—5th Lok Sabha)—1969-70, it was stated by Government in November 1971 that compilation by the Company of an Acounting Manual was in process and was nearing completion. The Manual has not been finalised so far (March 1983). Instead, a structural guide line termed as "Master Chart of Accounts" which is only a list of accounting heads alongwith preliminary instructions regarding maintenance of Journal Registers and the method of passing the Journal vouchers, has been in use since 1972-73 as yardstick for booking different items of expenditure and receipts under different heads of accounts. In regard to compilation of the Accounting Manual, the Management stated (December 1981) as follows :

> "The compilation of the manual would involve systematic preparation of these procedures and modifiations thereof for further improvement in the procedure. The job is time consuming. Action, however, is being taken to get the job done by the year 1982-83".

14.04 *Internal Audit*

A manual outlining the and scope and programme of work for the internal audit was drawn up and approved by the Board of Directors in February 1971. As against the sanctioned strength of 17 persons, the Internal Audit Wing was manned by Chief Audit Officer, one accountant and 3 accounts clerks. Although it was laid down in the manual that the programme of Internal Audit Department should be framed in such a way that each Department/Section of the Company was covered at least once in a year, it was noticed that out of 40 to 50 Sections/Departments of the Company, the Internal Audit Department covered only 15, 11, 9, 4, 9 and 7 Departments/ Sections during 1976-77, 1977-78, 1978-79, 1979-80, 1980-81 and 1981-82 respectively.

No important point worth mentioning has been thrown up in the reports of the Internal Audit Department upto March 1981. The Ministry stated (January 1983) as follows :—

> "....Due to additional requirement of Accounts Officers at the sites, and following inadequate response against advertisement for recruitment of Accounts Officers, certain officers working in Audit Department had to fill up posts of Accounts Department required for day to day work. In view of inadequate

> strength of the Internal Audit Department an outside audit Company has been awarded the work of conducting internal audit........".

15. Management Information System

Information obtained and reviewed by the Corporate Management in each of the Board Meeting, *inter-alia,* related to the following :—

(i) Cash flow and ways and means position.

(ii) Position of outstanding receivables from customers.

(iii) Position of outstanding liabilities.

(iv) Review of progress (production, commercial).

(v) Order position.

(vi) Progress report on major turn key projects.

(vii) Progress report on mining equipment.

The above system does not, however, cover system of performance reporting and progress monitoring of the projects.

The Ministry stated (April 1983) as under :—

> "Management information system covering *inter-alia* system for performance reporting and progress monitoring is being introduced during 1983-84".

16. Research and Development

In micro-objectives [Item 2(g) of Annexure-I] it has been mentioned that the Company will develop R&D activities in such a way as to reduce dependence on foreign technology and keep the industry updated. In reply to a query raised by Audit Board whether the Company has determined its R&D

policy as well as R&D objectives and programmes, the Ministry stated (April 1983) as follows :—

> "Considering the diversified nature of the Company's activities, R&D activities are more specifically directed towards :—
>
> (i) Reducing dependence on import of know-how in the field of bulk handling and coal beneficiation.
>
> (ii) Making our bulk material handling system more efficient and reliable to suit Indian conditions.
>
> Considering the wide range in this area, and taking into account that sophisticated resources would be required for R&D, individual projects are selected taking into consideration its commercial importance as well as to make the total system reliable and trouble free.
>
> The Company was incorporated in 1965 with a full fledged design and technology Department duly manned by qualified engineers. The Company languished for want of orders during its formative years. This resulted in heavy losses and a large number of foreign qualified engineers left the Company between 1965 and 1973. With the picking up of operations of the Company from 1972, it had to diversify its range of products leading to a sudden increase in the design effort. Due to the increased design efforts required, no separate Research and Development Cell could be created, but the development efforts were directed through the existing Design Offices.
>
> A modest beginning of a separate Research and Development Cell has been made in June 1982 by creating a cell manned by 3 engineers and 3

draftsmen. The Cell was assigned the task of developing three specific designs of equipment during 1982-83. This work is likely to be accomplished during the year."

17. Overall Summary

The important features emerging out of the detailed analysis given in the preceding paragraphs are given below :

1. *Introduction*

Mining and Allied Machinery Corporation Limited was registered on 1st April 1965 to take over the Coal Mining Machinery Plant from the Heavy Engineering Corporation Limited. In view of un-relenting losses. the Committee on Public Undertakings in their 65th Report (1969-70) had recommended to wind up the Company to avoid further drain on public exchequer. The Government of India, however, decided not to wind up the Company, *inter-alia,* in the hope of improvement in its production performance.

2. *Capital Structure and working results*

From 1977-78 onwards, the Company suffered heavy losses. Financial reliefs were granted to the Company initially with effect from 1st April 1971 and again with effect from 1st April 1975. These included moratorium on repayment of loans, waiving of interest on loans amounting to Rs. 2,627 lakhs and conversion of loans to equity amounting to Rs. 2,380 lakhs.

During 1977-78 to 1981-82 the cash losses incurred by the Company amounted to Rs. 66.49 crores. Upto 31st March 1982 the total losses incurred by the Company amounted to Rs. 108.16 crores and thus after wiping out the entire paid up capital of Rs. 44.85 crores and loans of Rs. 60.85 crores, deficit of Rs. 2.46 crores still remained uncovered. Heavy losses were due to under-utilisation of production capacity, lower productivity of labour, increased cost due to delay in execution of orders/projects and paucity of working capital.

In view of the recurring losses suffered by the Company, the Company made a number of proposals from time to time to the Government of India for grant of financial relief and assistance to re-organise its capital structure. The proposals made by the Company included, *inter alia,* reduction of paid-up capital, treatment of all Government loans as grants, assistance in reduction of bank overdraft and assistance to make good cash loss, etc. Keeping in view the recommendations made by the Expert Committee on Public Enterprises constituted by the Government of India in August 1980 and proposals made by the Company in March 1982, Government granted (January 1983) the following financial assistance/relief to the Company :

(1) An interest holiday on outstanding Government loans as on 31st March 1981 amounting to Rs. 48.93 crores for a period of 4 years from 1st April 1981 to 31st March 1985.

(2) Conversion of arrears of interest of Rs. 16.62 crores accrued upto 31st March 1981 and penal interest of Rs. 5.28 crores upto 31st March 1981 (totalling Rs. 21.90 crores) into non-plan loan on which also there would be an interest holiday till 31st March 1985.

(3) An interest holiday till 31st March 1985 on non-plan loans amounting to Rs. 11.30 crores and Rs. 7.20 crores granted to the Company during the years 1981-82 and 1982-83 (upto August 1982) respectively to meet cash losses and working capital requirements of the Company.

(4) Moratorium on repayment of instalments of loans mentioned above upto 31st March 1985.

(3) *Foreign Collaborations*

The Company has not been able to develop fully indigenous expertise and dependance on foreign experts even for maintenance and repairs could not be completely done away with. As a part of diversification programme the Company entered into a number of collaboration agreements with foreign firms. The foreign collaborations for technical know-how did not, however, enable the Company to increase the plant utilisation.

(4) *Production capacity and planning*

(a) *Plant Capacity*

The Company was primarily equipped with an installed capacity of 45,000 tonnes in order to meet the requirements of a variety of underground mining machinery and spares. The composition of product-mix was based on coal raising targets for the 4th and 5th Five Year Plans. The plan targets did not materialise and owing to lack of adequate orders for the equipment suited to its production profile, the Company had to diversify its production. Notwithstanding the efforts of the Company to diversify production, the Company could not succeed in getting orders on long term basis from the coal industry. The Management re-assessed the achievable installed capacity of the plant based on machinery installed, man-power available and product-mix. The achievable installed capacity so fixed by the Management ranged between 17,273 tonnes and 22,662 tonnes per annum during the years 1972-73 to 1981-82. No specific approval of Government for derating the installed capacity has, however, been obtained. The Company has also not been able to settle its achievable installed capacity on a firm basis on the ground that its product-mix is not definite.

(b) *Utilisation of achievable installed capacity*

The actual plant production fell short substantially even the re-assessed capacity and ranged between 33.12 per cent and 74.56 per cent of the re-assessed capacity during ten years ending 1981-82.

The actual production including bought-outs and ancillary production was less than the achievable installed capacity of the plant itself fixed by the Management from time to time in respect of major items of production.

(c) *Corporate Plan*

The Company prepared a Corporate Plan in August 1977 for the years 1977-78 to 1982-83 which was revised in November 1978 for installing of balancing facilities for ensuring effective utilisation of the already available machines.

As against the estimated capital expenditure of Rs. 3.24 crores, the actual expenditure on balancing facilities upto 31st March 1982 amounted to Rs. 2.23 crores. As against the production forecasts made in the Corporate Plan ranging between 12,867 and 25,561 tonnes, actual production during the first four years ranged between 10,992 and 18,797 tonnes, the shortfall being 14 to 42 per cent.

(d) In connection with the proposal for grant of financial reliefs, the Company intimated (March 1982) to Government its projected operating results which envisaged production of Rs. 58.43 crores, Rs. 70.70 crores and Rs. 93.00 crores during the years 1982-83, 1983-84, 1984-85 respectively. According to these projections, the Company is expected to break-even at a production of Rs. 70.70 crores during 1983-84.

While granting the financial reliefs, the Ministry desired that the targets of production and operating results set for the years 1982-83, 1983-84 and 1984-85 should not only be achieved but preferably be exceeded.

The projections for the year 1982-83 at a production level of Rs. 58.43 crores showed a loss of Rs. 1.46 crores. As against this, the production for the year 1982-83 was Rs. 52.43 crores approximately and the loss anticipated was Rs. 9.96 crores.

5. *Production Performance* :

(a) *Overall analysis*

Though the targets of production including production of ancillary units and bought-outs in respect of the major products were less than the achievable installed capacity of the plant itself, the actual production inclusive of outside production was generally lower than the targets except in the case of mining/port/steel plant equipment and coal preparation plant for some years.

As against orders for 21,782 tonnes, 24,186 tonnes and 29,984 tonnes available for manufacture during 1978-79, 1979-80 and 1980-81, the Company actually planned the manufacture of 12,866 tonnes, 15,800 tonnes and 18,356 tonnes during these years. Thus, the Company could plan orders for manufacture much less than those available.

The main reasons for short-fall in production as compared to targets were attributed by the Management to shortage of funds, imbalance of load, restricted power supply, non-availability of raw materials, continued deferment of orders by the customers, lack of discipline and accountability, deficiency in production planning and progress and shortfall in the area of export items.

(b) *Shop-wise analysis*

There was heavy under-utilisation of installed capacity in the case of structural shop, forge shop, steel and iron foundries and machine shops-I, II and III.

The annual shop-wise production during 1976-77 to 1981-82 fell far short of targets of each shop except Machine Shop II in 1976-77.

(c) *Production through ancillaries*

Even though targets of Company's own plant production were not achieved, jobs were off-loaded to ancillary industries.

One of the reasons given by the Ministry for procurement of products from ancillary and small scale industries is to meet delivery schedules of components and equipments. A test check conducted in audit, however, revealed that in a large number of cases, the ancillary/small scale units could not complete the jobs within the contractual delivery periods. The analysis of execution of orders placed during 1978 on ancillary/small scale units as made by the Ministry also showed considerable delays in the execution of orders by the ancillary/small scale units.

Regional Workshop, Nagpur

The Regional Workshop was set up at Nagpur with an expectation of earning a net profit of Rs. 5.70 lakhs per year. However, the workshop incurred heavy losses since its inception except a nominal profit during 1979-80.

6. *Order Position*

(a) *Extent of orders placed on the Company*

After nationalisation of Coal Industry, Coal India Limited (CIL) has been the biggest buyer for the equipment manufactured by the Company. However, the orders placed by the CIL on the Company in respect of conventional mining equipment were much less than the orders placed on other manufacturers.

(b) *Tenders lost*

The Company has also lost several tenders as the same were not accepted by the buyers. The main reasons for losing the tenders were attributed by the Ministry (April 1983) to higher cost of production and higher element of over-heads. The

Ministry has identified (April 1983) the following constraints in getting orders :

Mining Equipment

- Inadequate delivery period and high import content. The customer, therefore, tends to prefer import of total equipment.
- Piecemeal purchase of equipment by the subsidiaries of Coal India Limited.

Turn Key Projects

- Higher cost of production and element of overheads.
- Failure to load the plant on optimum basis.
- Larger number of unutilised machines due to change in product profile.
- Longer delivery period which has resulted in higher provisions on account of escalations.

(c) *Pending Orders*

Although the Company had substantial orders on hand for the period 1976-77 to 1981-82, the actual execution of orders excepting for the years 1976-77 and 1981-82 never exceeded 10,000 tonnes per year.

An analysis of outstanding orders revealed that the outstanding orders as on 31st March 1982 pertained to periods perior to 1975-76 and onwards.

Cancellation or deferment of large quantities of orders in 1976-77 by Coal Companies and cancellation of orders by Bhilai Steel Plant in August 1977, for one reason or the other resulted in blocking of funds amounting to Rs. 340.89 lakhs as on 31st March 1977.

(d) *Delay in execution of orders*

Although the targets have invariably been fixed much below the achievable installed capacity of the plant and the actual production of the Company was lower than the targets, there have been abnormal delays in the actual execution of the various sale orders. In some cases, action to manufacture the products was started after the expiry of delivery dates and in most of the cases delivery is still incomplete. The delays in execution of jobs ranged between 15 to 97 months, resulting in incidence of liquidated damages and escalation in costs.

The Expert Committee on Public Enterprises appointed by Government in 1980 to examine the working of some of the important public enterprises, in their report, submitted to Government observed as under :

- Items produced by the Company have not enjoyed the reputation with regard to their reliability, quality and price.
- The delays ranging between 3 to 4 years in implementing the orders have taken-away the confidence of the customers.

7. *Pricing Policy*

Owing to the constraints of lack of orders for conventional mining equipment and the need to diversify the clientele and products, the Company booked orders at the ruling market prices and incurred losses in the execution of such orders partly because of booking the orders at the ruling market prices and partly because of defective estimates of cost. The Company formulated the pricing policy in August 1979 which was suspended in November 1980. An analysis of the orders valuing Rs. 10 lakhs and above booked by the Company during the period of implementation of pricing policy revealed that bulk of the orders secured had been executed at loss.

8. *Machine Utilisation*

Proper records for machine utilisation had not been maintained. Even according to the analysis furnished by the Company, the idle hours of machines ranged between 35.76 per cent and 45.65 per cent during the 5 years ending 1981-82. Machines valuing Rs. 42.47 lakhs purchased/erected as far back as 1964-65 to 1975-76 had not been utilised.

Steel and Iron Foundry

The Management have not fixed any norms for melting loss, rejections and percentage of good casting to input.

9. *Manpower Analysis*

Although the actual level of production was much below 45,000 tonnes as mentioned in DPR since inception of the Company, actual strength of staff has always been in excess of that recommended in DPR for a capacity of 45,000 tonnes. There was excess staff strength even after taking into account. the extra staff required for departments and activities not covered in the DPR.

There is an imbalance in the ratio of Officers/Supervisors to workmen.

Actual output per worker was low as compared to the targets of ouput per worker in all the shops despite the Company having spent substantial amounts on payment of incentives and overtime.

10. *Costing system*

The Costing system suited to the needs of the Company is yet to be implemented. In reply to a query raised by Audit Board the Ministry stated (April 1983) that the review of the system made in 1982-83 revealed the following shortcomings :

(1) Incomplete documentation with regard to sale order numbers, components and assembly reference numbers, and the quantities and/or processes completed.

(2) Frequent splitting up of batch quantities while drawing materials and/or processing thereby disrupting cost figure for a particular batch/unit.

(3) Non-return of completed route cards to the Costing Section.

(4) Difficulties in linking between component and assembly route cards.

(5) Some volume of missing data details required.

11. *Verification and valuation of inventory and receivables*

The State Bank of India with whom the Company has cash credit facility, appointed in May 1978 a firm of Chartered Accountants, M/s. S. R. Batliboi and Company with the concurrence and approval of the Company to report on verification and valuation of inventory and receivables (hypothecated assets) as on 31st March 1978 so as to ascertain their fair value by way of security.

The total amount written off or provided for in the Accounts for 1977-78 on the basis of the recommendations of the Chartered Accountants and by the Company of its own worked out to Rs. 954.86 lakhs.

(b) *Credit Control*

Sundry debtors represented 33.75 per cent to 44.38 per cent of sales during the years 1977-78 to 1981-82. As on 31st March 1982 claims disputed by the customers amounted to Rs. 2.98 crores.

(c) *Cash inflow and outflow*

The Company was having adverse cash flow position during all these years mainly because of cash losses as the contribution from sales was less than the fixed expenses and high percentage of sundry debtors to sales.

12. *Material Management and Inventory Control*

(a) The Company has been resorting to purchases by special limited tenders on the grounds of urgency etc. though the Company failed to procure material within the expected delivery dates in a number of cases. As on 31-3-1982, the Company was having excess holding of inventories amounting to Rs. 161.08 lakhs as compared to the norms laid down. Considerable amount of funds were blocked in obsolete and non-moving items.

In several cases equipment were imported from abroad and kept in bonded warehouses for long periods of time which resulted in locking up of Company's funds and payment of port rent.

(b) *Production without sale order*

The Company manufactured certain items without clear cut sale orders or in excess of the sale order quantitities with the result that items aggregating in value to Rs. 1.83 crores had not been moving for several years and loss to the extent of Rs. 1.40 crores had to be suffered by the Company on the work-in-progress and finished products used ultimately as scrap.

13. *Budgetary Control*

The budget manual is yet to be completed by the Company (March 1983).

14. *Accounting System*

The Accounting Manual is yet to be compiled by the Company (March 1983).

15. *Internal Audit*

The Internal Audit Department was under staffed and was covering only limited number of departments.

16. *Management Information System*

The Management information system does not cover performance reporting and progress monitoring.

17. *Research and Development*

The Company has no separate department for undertaking research and development activities.

R C Suri

(R. C. SURI)
Chairman, Audit Board and Ex-officio
Additional Deputy Comptroller &
Auditor General (Commercial)

New Delhi
The 29-11-1983.

Countersigned

Prakash

(GIAN PRAKASH)
Comptroller and Auditor
General of India

New Delhi
The 29-11- 1983.

ANNEXURE I

(Referred to in paragraph 2)

Objectives	Fulfilment of objectives as stated by the Management
1. The Company will strive to serve the Nation's vital interest at all times in the discharge of its responsibilities. The Company will constantly seek and explore to deserve and enjoy the highest measure of Public trust esteem and respect.	Continuous efforts are being made for fulfilling the objectives which have been explained in subsequent paragraphs.
2. In conducting its industry and business, the Company will endeavour :	
(*a*) To achieve break-even in cash-in-flow and out-flow within the shortest possible time and thereafter attain a reasonable return on capital employed;	A programme has been drawn for 1982-83 to achieve break-even in cash in-flow and out-flow.
(*b*) To sustain a regular growth rate of 15 to 20 per cent.	Continuous efforts are being made to achieve the projected growth rate. During the year 1978-79 the actual turnover was Rs. 2524 lakhs and the projected target of 1982-83 is Rs. 5903 lakhs. The growth rate during the 5 years period works out to be an average of 24 per cent over the actuals of 78-79.
(*c*) To establish national self-sufficiency in the field of underground mining equipment with special reference to mechanised coal raising;	This is a continuous process. We have taken up the phase-wise manufacture of equipments like powered roof supports, shearers, armoured face conveyors, road headers, dinters etc. required for long wall mining which is being introduced in Indian mines for raising the coal output.

Objectives	Fulfilment of objectives as stated by the Management
(*d*) To establish national self-sufficiency in the field of design and manufacture of the entire range of coal ore beneficiation equipment as well as developing and improving the capability of MAMC to take up complete turnkey projects *i.e.*. from the stage of conception to erection, commissioning and handing over;	The Company is in the process of developing expertise in the field of design and manufacture of the entire range of coal beneficiation plant on turnkey basis. It may be mentioned here that the turnkey contract pertaining to Moonidih Coal Prepn. Plant is nearing completion and the execution of the Ramgarh Coal Preparation Plant is under way. In the area of developing expertise in the ore beneficiation plant, the matter is under examination.
(*e*) Maintaining a lead in the field of bulk handling system;	The Company has made progress in developing expertise in the field of design, manufacture and erection of the Coal Handling Plants, Bulk Handling systems on a turnkey basis. It may be mentioned here that the Company has executed/or executing contracts for Coal Handling Plants of Power Stations at Mathura, Korba, Wanakbori and Kolaghat.
(*f*) Providing satisfactory after sales-service;	A commencement has been made with five Service Centres established to provide prompt and timely after sales service to our customers. Further improvements are being implemented.
(*g*) Developing R&D activities in such a way as to reduce dependance on foreign technology and keep the industry up-dated;	Except for few instances of product development, no major work has been done in this respect. However, steps to develop R&D activities in near future are under examination.
(*h*) Establishing export markets;	The Company has already executed export orders for Turkey, Syria, Indonesia and Afghanistan for supply of mining equipments and conveyors. Since 1980 the Company has

Objectives	Fulfilment of objectives as stated by the Management
	secured Exports Orders worth Rs. 37 crores for the supply of mining equipments and conveyors to USSR. There are further prospects of securing further orders from USSR.
3. The Company will keep abreast of the latest technology and endeavour to meet the growing diversity and sophistication of industries need and performance by responding to : (*a*) developing new mutations of traditional lines; (*b*) entering into collaboration with manufacturers of up-to-date systems abroad.	The Company is endeavouring to keep abreast of the latest technology and accordingly the new lines of production have been introduced comparable with the available infrastructure of the Company and minimum available facilities. The major new lines are : (*a*) Powered Roof Supports for Coal Mines; (*b*) Shearer and Armoured Face Conveyor for Coal Mines; (*c*) Road Headers and Dinters for Coal Mines; (*d*) Trolley Wire Loco for Coal Mines: For the above products, the Company has also entered into collaboration with the following manufacturers of international reputes; (*a*) Dowty, UK for manufacture of Powered Roof Supports; (*b*) ASL, UK for manufacture of Ranging Drum Shearer; (*c*) DOSCO, UK for manufacture of Road Headers and Dinters:

Objectives	Fulfilment of objectives as stated by the Management
4. The operation of the Company will be led and guided by a strong and well knit team of management personnel which will command respect and loyalty of the whole of its organisation for its ability, sense of justice and human approach to all problems.	The organisation is being strengthened from time to time commensurating with the requirements.
5. The Company will ensure sound corporate management by adopting ethical practices including the establishment and maintenance of dynamic organisation and infrastructure suited to meet the present and future needs of the Co. Long range planning, product diversification and product mixture, strong financial discipline, product development engineering and consultancy services reducing dependence on import of engg. and know-how, adaptation of designs to suit specific needs of the industry, innovation of new machines to meet the changing pattern of demand rationalisation of design, progressive increase of export potential are its basic concept.	This is a continuous process. However, the following action have been initiated in this regard; (*i*) Long range planning, product diversification and product mixture :— Rationalisation of products has been introduced and long term orders are being secured from Coal India Ltd. and for exports. (*ii*) Strong financial discipline :— Budgeting has been introduced and department-wise budgets have been drawn. Efforts are being made for introducing job costing for standard products and with the establishment of such job costing action will be taken for other products by 1982-83. (*iii*) Product Development :— *Vide* para 3. (*iv*) Engineering & Consultancy Services :— The Company has made a small beginning for some of turnkey projects. Consultancy fees have been obtained from some of the Coal beneficiation work.

Objectives	Fulfilment of objective as stated by the Management
	(*v*) Reducing dependence on Import of Engg. and know-how :— The Company is yet to make a noteworthy progress in this area. This is primarily due to the reason that customer normally prefers the design of established manufactures and whenever equipment are manufactured based on in-house design, such equipment stand at a disadvantage in competition with the equipment manufactured to an established proven design generally of a foreign manufacturer.
	(*vi*) Adaptation of design to suit specific needs of the Company, innovation of new machine to meet the changing pattern of demand :— *Vide* para 3 above.
	(*vii*) Rationalisation of design— This has been done to some extent.
	(*viii*) Progress of increase of export potential :— *Vide* para 2(h) above.

ANNEXURE II

(Referred to in paragraph 4)

Foreign Collaborations

(Rs. in lakhs)

Position as on 30-11-1981

Name of the Collaborators	Date of Agreement	Amounts paid for Engineering	Amounts paid for Component	Royalty paid	Amounts paid for supervision & other services	Total value of orders received based on know-how obtained	Total value of orders executed	Remarks
1	2	3	4	5	6	7	8	9
(1) M/s STAMICARBON Holland								
For design and manufacture of dfferent types of heavy medium cyclone and sink and float installation for treatment of coal.								
(*a*) TISCO	1-7-1967 Extended from time to time.	Nil	Nil	3.85	Nil	5.20	5.20	
(*b*) Moonidih		Nil	Nil	14.81	Nil	24.36	24.36	

(*c*) Ramgarh Washery.	Last extension for five years commences from 1-7-1979	Nil	Nil	Nil	Nil as yet payable as per Col. 8.	2.35	0.32
(*d*) Spares		Nil	Nil	No Royalty payable		108.52	73.51
			TOTAL	18.66		140.43	103.39
(2) DOWTY MINING, UK							
1. 20 T Props	10-2-1969	0.27	18.7	0.5	Nil	176.17	164.17 (In progress)
2. 20 T Props (Patherkhera)		..	Nil	No Royalty payable.	Nil	3.75	1.31 (In Progress)
3. Supports (Patherkhera)		3.2	£4.25 lakhs	Nil but payable at 4% on MAMC's Production	Nil	£4.25 lakhs (imported) Rs. 7.51 (indigenous)	£4.25 lakhs Rs. 7.19 (In progress)
(3) DEMAG LAUCHHAMMER, WEST GERMANY For supply of Stacker/Reclaimer/Shiploader. PORTS (Haldia, Vizag, Madras, Mormugao)	27-6-1969	121.0	252.9	No Royalty payable	59.4	1208	1208

1	2	3	4	5	9	7	8	9
(4) **KOPEX OVERSEAS MINING, POLAND** Coal Preparation Plants. (Moonidih & Dugda)	26-11-1976	72.6 (For Jigs, Elevators & Screens for Moonidih, Dugda.)	8.7	No Royalty payable	3.2 24.09*	1721.0	1640.0 (In Progress)	Apart from the Collaboration Agreement for establishing Design & Engineering Organisation with the help of Kopex, Collaboration Agreements were also entered to import Design Documentation/Engineering-for

*The amount relales to the salaries against man-months already consumed (156 + 120) for setting up Design & Engineering. Organisation of CPP. Balance 36 man-months are also under utilisation.

								Moonidih, Dugda Coal Preparation plants. Vibrating Screen and Elevator.
(5) POHLAG HECKEL BLEICHERT, WEST GERMANY								
(PHB) Skip & Cage installation.	13-6-1978	18.1	Nil*	No Royalty payable.	Nil as yet.	465.0	405 (In progress)	
(6) ANDERSON STRATHCLYDE LTD. . . . . Drum Shearers For Coal India	14-9-78	1.8	26.5	Nil	Nil	57.0 FOB	57.0 FOB	

---

*Components worth DM 31.56 lakhs f.o.b. have, however, been imported from Epreisem Hutte Prinz Rudolph, West Germany.

1	2	3	4	5	6	7	8	9
For Patherkhera .		Nil	£1.34 lakhs	Payable @4% on MAMC's production.	Nil	£1.34 lakhs + 2.82 lakhs (Indigenous)	£1.34 lakhs (In Progress)	
For Murilidih & Moonidih.	August 1981	Nil	Nil as yet.	Payable @4% on MAMC's production	Nil	142.41	Nil (In Progress)	Delivery by February-April, 1983.
(7) DOWTY MINING, UK for Murilidih & Moonidih								
(*a*) 15 T/20 T Props. . .	23-10-78	Nil	Nil as yet.	No Royalty payable.	Nil	20.3	Nil	
(*b*) Suports		Nil	Nil as yet.	Nil but Royalty payable @4% on MAMC's Production.	Nil	681.7	Nil (Delivery by February-April, 1983	

(8) POHLAG HECKEL BLEICHERT, WEST GERMANY, (PHB)								
BULK HANDLING EQUIPMENT (Stacker, Reclaimer & Wagon loader). . .	1-3-79			No Royalty payable.	Nil	103.6	86.0— (In Progress)	
(i) Paradip . . .		39.4 for Paradip & Meghahatuburu town	23.87					
(ii) Meghahatuburu . .			38.43	—do—	Nil	224.0	74.0 (In Progress)	During 1979 MAMC entered into a Collaboration Agreement for supply of Stacker/Reclaimer/Wagon Loader to Paradip & Meghahatuburu Projects.

1	2	3	4	5	6	7	8	9
(*iii*) Korba . . .		14.0	19.8	—do—	Nil	98.0	27.5 (In Progress)	A General Collaboration Agreement was initialled in 1979 for supply of Bulk Handling equipment, pending approval of the Government, DD for supply of Stacker/Reclaimer for Korba was received. The same DD is being utilised
(*iv*) Wanakbori . .		Nil	8.2	Nil Royalty payable @ 4% on MAMC's production	Nil	124.0	7.60 (In Progress)	

								for Wanakbari Project also. While the Projects are under execution, PHB merged with M/s Wesher Hutte and M/s PWH and therefore requested discontinuance of the agreements.
(9) **KHD HUMBOLDT WEDAG A.G., WEST GERMANY** Import of Batac Jig and related equipment and Engineering for Ramgarh Coal Preparation Plant.	16-1-80	17.9	233.3	No Royalty payable.	Nil	1483.6	539.0 (In Progress)	

1	2	3	4	5	6	7	8	9
(10) ORDER RECEIVED IN JUNE, 1981								
DOSCO OVERSEAS ENGINEERING LTD. For establishing indigenous manufacture of Road Header Machines, Bridge Belt Coneyors, Tunneling Machines, Dint Headers.	17-11-81	£ 39500 Gross payable	Payable 281.6	Nil Payable @ 4% on MAMC's production	Nil	68.3 FOB 213.3 FOB 43.0 (excluding spares worth Rs. 2.5 lakhs)	Nil Nil Nil	
						324.6		

ANNEXURE III

(Referred to in paragraph 6.06)

Extracts from Statutory Auditors' Reports

(a) The process of recovery of raw materials from defaulting units is defective, faulty and long drawn. The Corporation sometimes incurred substantial losses for its failure to recover raw materials from defaulting parties (1977-78, 1978-79 and 1979-80).

(b) The finished product/work-in-progress with the ancillary units have been partly accounted for on the basis of physical verification and partly on the basis of book stock certificates of the parties available with the Corporation showing the stocks of finished product/work-in-progress and raw materials as on 31st March 1979, 31st March 1980 and 31st March 1981 (1978-79, 1979-80 and 1980-81).

(c) Orders were given in some cases to unregistered parties (1977-78, 1978-79 and 1979-80).

(d) Out of Rs. 22.18 lakhs, Rs. 15.88 lakhs and Rs. 23.66 lakhs of stock of raw materials lying with the sub-contractors during the years 1977-78, 1978-79 and 1979-80, confirmations of Rs. 10.33 lakhs, Rs. 7.40 lakhs and Rs. 11.37 lakhs respectively only were available (1977-78, 1978-79 and 1979-80).

(e) The delivery challans and return notes as prepared by the different shops after receipt of the materials by the Company from contractors (ancillary) from time to time during the year are not being accounted for regularly as and when the materials are received and documents prepared (1979-80).

(f) Stock worth Rs. 6.75 lakhs, Rs. 8.48 lakhs (approx.) and Rs. 8.00 lakhs as on 31st March 1978, 31st March 1979 and 31st March 1980 respectively have not moved for more than 2-3 years and no confirmation certificates were produced for verification (1977-78, 1978-79 and 1979-80).

(g) Some ancillary units failed to fulfil their supplies within the stipulated time/period fixed by the Corporation for which neither any claim for damages is found to have been made nor any other action appears to have been taken by the Company (1977-78, 1978-79 and 1979-80).

(h) The recovery rate in respect of scrap and materials not returned by the contractors (ancillary units) was fixed much lower than the current market rate (1979-80).

ANNEXURE IV-A

Statement showing tenders lost (Referred to in paragraph 7.02)

Sl. No.	Customer Tender No./Due date	Quantity	Equipment	Total tendered Price quoted by Company	Price of other reputed manufacturers		Remarks
					Name	Unit Price	
1	2	3	4	5	6	7	8
				(Rs.)		(Rs.)	
1.	ECL/15/21-4-1981	70	30 KW Tugger Haulage	98,000 (Mech.)	Vishwa Voltas Jardine	40,000 44,000 55,000	
2.	ECL/16/21-4-1981	46	(*a*) 30 KW Endless Haulage.	2,20,950 (Mech.)	Jardine Voltas	55,000 44,000	
		15	(*b*) 75 KW Endless Haulage.	3,29,360 (Mech.)	Jardine Voltas	1,92,000 1,00,000	
3.	ECL/27/23-4-1981	637	Coal Drill.	8,800	Jardine Voltas	4,800 3,800	
4.	ECL/20/22-4-1981	20	(*a*) 65 KW Direct Haulage.	4,17,390	Jardine Vishwa	1,57,250 1,45,000	5% discount offered by Jardine for entire order.
		11	(*b*) 115 KW Direct Haulage.	6,81,060	Jardine Vishwa	1,65,000 2,35,000	
5.	BCCL/402157/ 19-6-1981.	9	Trunk Belt Conveyor	15,93,707 (Quoted 19,26,000)	Ashoka Vishwa	12,28,000 13,87,000	

1	2	3	4	5	6	7	8
6.	BCCL/402159/ 22-6-1981.	12	Gate Belt Conveyor	9,92,639 (Quoted 11,00,000)	Ashoka	7,97,000	
					New India	10,60,000	
7.	ECL/136/29-9 -1981	12	Light Duty Chain Conveyor.	3,94,636 (Quoted	Rampur	2,75,000	
				4,49,000	Vishwa Bharat	2,87,000	
				alt. 4,35,000)	West Falia	3,36,000	
8.	ECL/104/23-4-1982	8	50 KW Endless Haulage.	2,12,000	AKG	1,52,000	
				(Mech.)	Jardine	1,52,000	
9.	ECL/103/21-5-1982	10	(*a*) Fan MVA 2.4	2,25,000	Voltas	1,45,550	
				(Mech.)	Andrew Yule	1,20,900	
		4	(*b*) Fan MV 1—3	15,00,000	Voltas	5,25,275	
				(Mech.)	Andrew Yule	4,48,000	

ANNEXURE IV–B

Sl. No.	Customer Tender No./Due date	Equipment	Total tendered price	Comparative statement						
			(Rs. in lakhs)	MBE	Dynacraft	MAMC				
1.	Bhilai Steel Plant 08/12/Pur/81/5(17)/ 101484 dt. 26-2-1981.	Conv. system for 7th Blast Furnace.	376.30	314.00	294.00	376.90				
2.	PSEB 8/PNRTP	C.H.P. for Ropar TPS	6167.65	Simon Carves	MBE	ELECON	DANY ASHM ORE	EPI	MAM C	
				Package I	2273.00	2735.63		2128.63	2264.29	
				Package II 1397.25	870.00		1221.48	1041.27	1490.15	
				Package III 1638.00	1629.00	—	1479.69	1842.85	2412.21	
3.	Paradip Port Trust 1880/CEME/W-EM-31.	1 No. Stacker-cum-Reclaimer	281.34	Bakau Wolf	L&T	WMI	Mitsui & Co.	Nissiuai	TRF	MAMC
			Price : Del.	199.11 20 months	223.80 19	240.76 15	262.90 17	294.83 17	232.87 34	281.34 24 months

ANNEXURE V-A

(Referred to in Para 7.08)

Outstanding order position of major sales order for Mining Equipment as on 31-3-1982

Sl. No.	Supply Order & date	Equipment Ordered (in numbers)	Value (Rs. in lakhs)	Delivery date	Despatched upto 31-3-82 (Nos.)	Balance yet to be despatched 31-3-82 (Nos.)	Manufacturing Programme 1980-81 & 1981-82			
							Year	Target (Tonnes)	Output (Tonnes)	Value (Rs. in lakhs)
1	2	3	4	5	6	7	8			
1.	8/064/36 dt. 3-5-78	2 Apron Feeders	2.10	1/80	Nil	2	1980–81	5.604	8.048	2.54
2.	9/205/12 dt. 14-12-79	60 Granby car	25.80	3/80-Commencement 10/81-Complete	55	5	1980–81 1981–82	171.400 287.000	58.500 155.500	5.75 18.58
3.	9/196/01 dt. 4-2-79	13 Pumps	27.60	5/81-7 11/80-6	Nil	13	1981–82	8.608	5.348	0.97
4.	9/190/01 dt. 26-11-79	500 40T.H. Props	27.83	5/81	263	237	1980–81 1981–82	16.000 55.994	0.585 14.269	0.57 8.42
5.	9/051/79 dt. 12-3-79	4 Reciprocating Feeder	1.77	3/80	Nil	4	1980–81	2.460	0.995	0.25
6.	0/074/01 dt. 15-5-80	200 40 T.H. Props	14.84	11/81	96	104	1980–81 1981–82	12.800 ..	7.235 0.798	5.03 0.55

7. 0/016/01 dt. 18-1-81	5 Pump PM-150	6.05	8/81	Nil	5	1980-81 1981-82	.. 5.580	1.536 3.072	0.31 0.61
8. 0/512/01 dt. 26-6-80	20 Gate Belt Conveyor	127.84	9/81	11 partly despatched	9 and 11 partly	1980-81 1981-82	240.062 1356.904	161.626 827.990	19.90 121.69
	9 Trank Belt Conveyor.	67.45	2/82	8 partly despatched	1 + 8 partly	1980-81	4.270	4.220	0.80
9. 9/209/01 dt. 18-12-79	5 Belt Conveyor	14.89	6/81	1 partly despatched	4 + 1 partly	1981-82	66.907	34.590	4.43
10. 0/500/01 dt. 1-4-80	3 Trank Bett Conveyor	16.23	3/81	1 partly despatched	2 + 1 partly	1980-81 1981-82	206.212 6.930	56.305 5.586	7.43 0.69
11. 0/505/01 dt. 30-5-80	4 Surface Conveyor	11.80	6/81	2 partly despatched	2 + 2 partly	1980-81 1981-82	19.834 25.254	15.933 4.744	2.80 0.86
12. 0/156/01 dt. 11-10-80	1 Belt Conveyor.	7.00	7/81	Nil	1	1981-82	..	1.575	0.24
13. 0/516/01 dt. 3-11-80	8 Belt Conveyor	73.00	6/82	1 partly despatched	7 + 1 partly	1981-82	2.564	12.054	2.35
14. 1/035/01 dt. 5-3-81	16 SAKT-60 Conveyor	44.16	9/81 to 12/81	12 partly despatched	4 + 12 partly	1981-82	83.040	139.334	40.49
15. 1/067/01 dt. 9-5-81	17 SKAT-60 Conveyor	51.49	1/82 to 3/82	10 partly despatched	7 + 10 partly	1981-82	99.318	113.720	32.97

ANNEXURE V-B

(Referred to para in 7.08)

Statement showing the projections for execution work behind delivery schedule

Quantity—in tonnes
Value—Rupees in lakhs

Sl. No.	Product	Sale Order No. & date	Qty. Value	Order out-standing as on	Original delivery date	1975-76 Qty. Value	Period of delay in months	1976-77 Qty. Value	Period of delay in months	1977-78 Qty. Value	Period of delay in months	1978-79 Qty. Value	Period of delay in months	1979-80 Qty. Value	Period of delay in months	1980-81 Qty. Value	Period of delay in months	1981-82 Qty. Value	Period of delay in months
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1.	2 Years Opr. Spares	S/305 4-8-72	90.00 17.55	31-3-75	3/73	90.00 17.55	24	..	..	..	48	10.00 2.07	60	20.00 3.90	72	11.89 2.26	84	15.80 2.55	96
2.	3 Years Opr. Spares Conveyor & Pumps & Misc.	4/038/32 12-2-74,	335.00 65.32	31-3-75	8/74	225.00 43.75	19	110.00 22.57	31	..	43	50.00 9.50	55	80.24 15.89	67	45.66 8.76	79	19.11 3.73	91
		4/144/32 18-6-74	55.00 10.71	31-3-75	74–75														
3.	Scraper (Haldia)	S/326 B 10-5-72	150.00 20.50	31-3-76	2/74	150.00 20.35	25	..	..	..	..	..	..	196.00 24.32	73	80.00 7.25	85	81.92 4.30	97
4.	Ore Coal Handling Plant	S/072 25-9-72	835.00 72.50	31-3-75	12/75	..	..	367.00 45.49	15	..	..	..	..	82.00 19.95	51	340.27 23.63	63	..	..
5.	Bucket Wheel	S/003/43 9-9-78	280.00 72.00	31-12-78	6/79	..	..	..	..	..	..	..	..	..	..	244.00 58.24	21	306.76 33.74	33
6.	Belt Conveyor (Panki)	S/0341 1-12-73	408.50 77.82	31-3-75	12/74	204.50 39.00	15	204.00 38.82	27	..	..	..	..	..	..	..	..	..	..
7.	Hammer	S/0052 21-10-72	384.30 35.98	31-3-75	5/73	100.00 9.50	34	284.30 26.48	46	..	..	..	..	..	..	..	..	..	..
8.	Belt Conveyor (Doli Mines)	S/288 23-11-71	340.00 32.00	31-3-75	12/73	..	..	340.00 32.00	39	..	..	..	..	..	..	..	..	..	..
9.	Conveyor (2nd Sinter)	S/316 4-4-72	328.00 32.50	31-3-75	5/74	..	..	328.00 32.50	34	..	..	..	..	..	..	..	..	..	..
10.	Disc Feeder	S/315 4-4-72	70.00 13.80	30-6-75	12/73	70.00 13.80	27	..	..	..	..	..	..	..	..	..	..	..	..
11.	Scraper Chain (Sindri)	S/326 A 10-5-72	75.00 10.25	31-3-76	2/74	95.00 10.20	25	..	..	..	..	..	..	..	..	..	..		..
12.	Billing Tower	S/0188 23-5-73	64.00 8.96	30-6-75	10/74	64.00 8.96	17	..	..	..	..	..	..	..	..	..	..	..	..
13.	Belt Conveyor	S/336 4-7-72	50.00 5.50	30-6-75	6/74	50.00 5.50	21	..	..	..	..	..	..	..	..	..	..	..	..

ANNEXURE VI

(Referred to in Para 8.01)

Statement showing the amount of loss on execution of the Projects as on 30-9-1982.

Name of the Project	Particulars of items	Total actual/ anticipated cost (Rs. in lakhs)	Contract price Plus escalation (Rs. in lakhs)	Estimated loss(Col. 3–4) (Rs. in lakhs	Differences of Col. 3–4 (Rs. in lakhs)	Reasons for variation between col. 3 & 4 as furnished by Management
1	2	3	4	5	6	7
1. Mathura Coal Handling Plant	Design Engg.	4.90	14.00	..	(+)9.10	Design was imported although in the estimate it was decided to have it indigenously. Hence the excess expenditure over estimate.
	Boughtout (Mech.)	48.22	55.00	..	(+)6.78	—
	Civil Const.	92.43	27.30	..	(—)65.13	Under estimate & increase in the cost due to delay in completion of job.
	Structural plus Erect	56.14	42.91	..	(—)13.23	—do—
	Broughout (Elect.) Plus Erection	70.81	39.55	..	(—)31.36	Increase in price when order was placed for electricals.

1	2	3	4	5	6	7
	Cost of MAMC manufacture	47.38	55.15	..	(+)7.77	—
	Painting & Transp.	3.38		..	(—)3.38	
	Site establishment	7.20	..	..	(—)7.20	No provision was made in the estimate for site establishment.
	Add : Escalation @ 2% on contract price	..	4.68	..	(+)4.68	
		330.46	238.59	..	(—)91.87	
	Add: Administrative, selling, distribution overhead @30% on actual/anticipated cost except item of MAMC Mfg. & site establishment *i.e.* on Rs. 254.49 lakhs	82.76	..	..	(—)82.76	Regarding delay in execution of contract the Ministry stated (January, 1983) as under : "The execution of contract has been delayed due to various delays on the part of customer, his consultant and Railways. During the course of execution of the projects there has also been a change in the scope of work. We have taken up with the customer for revision of the price
	TOTAL	413.22	238.59	174.63	(—)174.63	

						on both these accounis and the extent of the unbridged amount, if any, will be known after the final settlement is reached."
2. DTPS Coal Handling Plant	Design	10.97	10.97	..	..	..
	MAMC Manufacture	83.77	83.77	..	..	..
	Boughtout (Mech.)	109.25	102.45	..	(—)6.80	Due to increase in price.
	Boughtout (Elect.)	41.04	38.15	..	(—)2.89	—do—
	Erection (Mech + Elect.)	48.98	25.20	..	(—)23.78	—do—
	Erection (Civil)	6.18	3.00	..	(—)3.18	—do—
	Civil Works	29.51	25.13	..	(—)4.38	Due to increase in work which was claimed by civil contractor & paid by D.V.C. and same deducted by D.V.C. from MAMC Bill.
	Sales Tax	8.66	10.00	..	(+)1.34	
	Add : Increase in price allowed by D.V.C.	..	45.00	..	(+)45.00	
	Add : Administrative, Selling, distribution overhead @ 25% on actual/anticipated cost except item MAMC manufactured & Sales Tax.	61.48	..	..	(—)61.48	
	TOTAL	399.84	343.67	56.17	(—)56.17	

1	2	3	4	5	6	7
3. N.M.D.C.	Mn. Steel Costing (254 tonnes)	40.65	115.00	..	(—)8.58	The Project was taken up under over run of cost on the direction of BPE.
	Structural (268 tonnes)	12.81				
	Mechanicals (312 tonnes)	51.65				
	Gear box and coupling (22 tonnes)	5.97				
	Electricals	12.50				
	Add : Administrative, selling & distribution overhead @ 25% (on electricals) on actual anticipated cost.	3.13			(—)3.13	This overhead not included while arriving at actual/anticipated cost.
	TOTAL	126.71	115.00	11.71	(—)11.71	
4. Metropolitan Transport Project (Railway)	C.I. Rings (weight 4 tonnes each) 22 Rings × 4=88 tonnes.	(8827 × 88) =7.77	(7267 × 88) =6.39	..	(—)1.38	Increase in cost due to delay in delivery.
	C.I. Segment rejections 379 pcs. (8 nos. different type of segments complete one Ring 379 ÷ 8 = 47 Rings. 47 × 4 = 188 tonnes	(2404.09 × 188) 4.52			(—)4.52	Rejections of Finished and C.I. segments during inspection by Metropoliton Transport Project.
		12.29	6.39	5.90	(—)5.90	

5. Moonidih Coal Preparation Plant	Civil Works	339.00	213.90	..	(—)125.10	Underestimates and increase in cost due to delay in completing the job.
	Structural Fabrication	79.00	89.82	..	(+)10.82	—
	Bought out (Imported)	58.00	55.04	..	(—)2.96	Marginal increase in price due to exchange rate variation.
	Bought out (Indigenous)	232.96	336.80	..	(+)103.84	—
	Erection (Mechanicals & Structurals)	54.80	77.20	..	(+)22.40	—
	Bought out (electricals)	195.00	219.81	..	(+)24.81	—
	Erection (Electricals)	32.67	43.36	..	(+)10.69	—
	Site Establishment	25.00	25.00	..	..	—
	Supervision (Design)	35.00	35.00	..	..	—
	MAMC Manufacture	276.42	355.74	..	(+)79.32	—
	Royalty	36.64	36.64	..	..	—
	Add : Escalation on electricls, mechanicals and structurals	10.13	58.86	..	(+)48.73	—
	Add : Administrative, selling & distribution overhead @ 25% on actual/anticipated cost except items on MAMC manufacture site establishment, supervision (D) and Royalty.	250.39	..	...	(—)250.39	This item was not included by the Management while arriving at the actual/anticipated cost.
	TOTAL	1625.01	1547.17	77.84	(—)77.84	

1	2	3	4	5	6	7	8
6.	Meghahatuburu Iron Ore Project	Design Engineering	51.73	8.26	..	(—)43.47	—
		Civil & Structurals including design.	433.30	468.30	..	(+)35.00	—
		Electricals including Erection	296.45	192.19	..	(—)104.26	Increase in price when order for electricals were placed by MAMC. Management clarified that the price of electricals increased between the period of submission of offer and actual receipt of order from MIOP. which could not be covered under normal escalation formula of MAMC.
		MAMC manufacture Esclation	201.05	201.05			
		Bought out Indigenous Bought out (Imported)	57.76	69.93	..	(+)12.17	
		Erection (Mechanicals)	26.26	23.12	..	(—)3.14	
		Add : Administrative selling & distribution overhead @ 3% on actual/anticipated cost on all items except MAMC manufacture.	259.65	..	..	(—)259.65	Increase in price & volume of work after completion of detailed design work. This item was not taken into consideration by the MAMC management while arriving at the actual/anticipated cost.
			1326.20	962.85	363.35	(—)360.97	

7. B.C.C.L.	28 sets Haulage (Mechanicals) 24 sets Haulage (Electricals)	34.76 59.99 94.75	97.64	..	(+)2.89	
	Add : Administrative, selling & distribution overhead @ 25% on actual/anticipated cost of electricals (i.e. on Rs. 59.98 lakhs).	15.00	..	..	(—)15.00	Cost of electricals not fully covered by contract price.
		109.75	97.64	12.11	(—)12.11	
8. Coal India Ltd.	115 KW Direct Haulage (Mechanicals) 115 KW Direct Haulage (Electricals)	23.45 18.18 41.63	42.16	..	(+)0.53	
	Add : Administrative, selling & distribution overhead @ 25% on actual/anticipated cost of electricals (*i.e.* on Rs. 18.18 lakhs).	4.55	..	..	(—)4.55	Cost of electricals not fully covered by contract price.
		46.18	42.16	4.02	(—)4.02	

ANNEXURE VII

(Referred to in para 8.01)

Extracts from Ministry's reply dated 15-4-1983

Project monitoring and Control system etc.

1. Over the last 3 to 4 years the system of project monitoring, especially in respect of turnkey projects, has been considerably strengthened. The present system is highlighted in the subsequent paras.

2. A turnkey order consists of following broad activities :—

(i) System Engineering.

(ii) Detailed Engineering.

(iii) Site Construction.

(iv) Supply.

(v) Erection and commissioning.

2.1 On receipt of a turnkey order the last date for each of the above activities is fixed to fit into the total commissioning time of the project. Normaly a cushion of 3 to 6 months is endeavoured to be kept on the original target. Completion targets for each of the above activities are then broken down into detailed targets for sub-activities.

2.2 System Engineering is evaluated in terms of A1 sheet and monthly schedule for the number of A1 sheets to be approved within the terminal date of activity and advised to System Engineering Cell.

2.3 The detailed engineering could be for—

(a) Civil.

(b) Structural.

(c) Other mechanical parts.

2.3.1 Generally the design work for civil and structural portion offloaded due to lack/inadequate in-house capacity. In respect of this, therefore, the date of calling tenders, the date of nominating the contractor as well as monthly schedule for release of drawings is laid down within the sub-target.

2.3.2 For other mechanical pan linking up with the release of system engineering drawings and available design capacity, monthly targets within the terminal target of the sub-activity is fixed and advised to the concerned design wings.

2.4 The supply consists of boughtouts, site fabrication or supplies from the plant.

2.4.1 Boughtout items are individually identified and for each of these, dates are fixed for release of specification, issue of tender, placement of order and schedule of delivery to fit into the overall schedule.

2.4.2 In respect of items to be fabricated at site, after taking into account the date of release of specifications, activity targets are fixed for calling of tenders, finalisation of contracts and schedule of site fabrication.

2.4.3 In respect of items to be supplied from Plant, a monthly schedule of activity is finalised and advised to Planning Department for ensuring inclusion in production programme.

2.5 For erection and commissioning, the dates for calling of tenders and finalisation of contracts are fixed and thereafter a monthly schedule is drawn.

2.6 Schedule for the above activities are advised to departments concerned for keeping to the schedule for respective activity.

3. On the financial side to ensure that the possibility of cost-over runs is minimised, following estimates are available when the order is received :—

(a) Scheduled and broad specifications of boughtouts.

(b) Break-up of weight of various items to be manufactured in the Plant and at site category-wise.

(c) Estimates of prices under various categories.

3.1 The estimated weight category-wise for the Plant manufacture is advised to concerned Design Department. The Design Department is then charged with the responsibilities of working within the estimates.

3.2 Similarly, estimates for various boughtouts and services are considered when placing order on outside agencies with a view to ensure that margins provided are not eroded.

4. Once the activities have been scheduled, the timely completion of the project is monitored broadly as under :—

(i) A project Monitor is appointed who is to take charge of total monitoring the project and provide necessary inputs to the site to enable site to keep to the schedule.

(ii) The project monitor keeps a watch on the progress of various activities, compares it to the schedule and wherever there are delays analyses such delays as would affect overall completion of the project and initiate corrective action.

(iii) The site incharge intimate their progress every month in monthly D.Os which are compared with the schedule and corrective action decided.

(iv) Schedules are laid down for inspection of the sites and generally all sites are regularly visited by Headquarters with a view to take on-the-spot stock of the situation.

(v) All activities referred under para 2 above are put down in a schedule on which the activities are monitored by the top management. This schedule which is uniformly followed for all projects enables at any time to have a total look on the progress of the Project. This report is updated monthly and reviewed at the level of Chairman, Director and General Manager incharge of the Project Monitoring.

(vi) Periodical meetings are held between the Project Monitor and the corresponding part of the shop floor at the level of AGM and the Chairman to review the progress of shop manufacture.

(vii) The Project Monitor also assesses periodical progress through correspondence and sometime by visiting various sub-suppliers to ensure that they are progressing our work satisfactorily.

5. Similarly for cost over runs various measures have been formulated to monitor day-to-day progress of expenditure on the project. This includes :—

(a) Reviewing the actuals over the estimates whenever contracts are entered for outside purchases as well as services.

(b) Increase in actual weight over estimated weight categorywise are required to be approved at the appropriate level and thus got examined in depth with a view to take corrective action, if possible for the project itself and if not to at least draw a lesson in respect of future projects.

(c) In respect of designs undertaken by outside agencies high incentive/penalties are provided in case of reduction/increase over the binding quantities.

(d) In case of cost over runs analysis is made to find out how cost could be reduced through alternative means of design/activity.

6. Inspite of measures taken, the time over runs and cost over runs beyond the estimates often become a consequence of various reasons which are outside our control mainly being as follows :—

(a) Unrealistic overall schedules imposed by the customer to make up delays which take place at their end in finalising specifications.

(b) Delay in supply of technical data and change in technical parameters by the customers and their consultants.

(c) Delay in approval of drawings and sources of supply.

(d) Delay in supplying services by the customer like civil foundations, approach road, electricity, water etc.

(e) Delay in releasing payments due to financial constraints at their end.

(f) Delays by sub-contractors due to power cuts and other force majeure conditions.

(g) Delays in supply of steel and cement.

(h) Delays connected with approval of foreign collaboration, import licence etc.

(i) Labour trouble, specially those at the later part of the project caused by uncertainty amongst the temporary workmen at site due to impending retrenchment.

(j) Cost over runs due to unprecedented escalations in cost of inputs which could not be reasonably assessed at the time of submitting bids and not fully covered by the escalation clause which the buyer could response in view of competition.

7. Strengthening of the project monitoring and control system have already shown results. We have been able to cut-down on the execution time of various projects which are presently under completion. The profitability shown in respect of recent projects is also heartening.

ANNEXURE VIII

(Referred to in Para 9.01)

Machines with no load or minimum load

Sl. No.	Description	Model No.	Number of Machines	Machines manned in 2 shifts	Machihes manned in one shift	Unmanned machines	Remarks
1	2	3	4	5	6	7	8
1.	Drilling Machine . . .	2A 125	10				
		2A 135	6				
		2C 70	1				
		RM 52	7				
		RM 62	5				
		2H 57	4				
		2H 58	2				
		RM 63	1				
			36	10	10	16	Operator deployment is flexible.
2.	Gear Hobbing . . .	5E 32	7	5	..	2	Operator deployment is flexible.
		5327	2	1	..	1	
		5K32A	1	1	..	..	
		5A370	2	2	..	..	
3.	Worm Cutting . . .	E-357	1	..	..	1	
4.	Spline hobbing . . .	5350	2	..	..	2	
5.	Gear shaper . . .	5M14	2	..	..	2	
		5 150	2	2	..	..	
6.	St. Bevel Generator . .	5A250	2	..	..	2	
		5A260	1	..	..	1	
			22	11	..	11	

7. Cylindrical Grinding (L)	38151	1		1	1	
	3152	1	..	..		
	3164A	2	1	1		
	3A161	2	1	1		
	3153M	1	1			
		7	3	3	1	
8. Centreless Grinding	3184	1	..	..	1	
9. Surface Grinding	3B732	1	..	..	1	
10. Internal Grinding	3B250	3	..	1	2	
11. Broaching	MP 75	1	..	..	1	Rarely operated. Operated from other Machines.
	XR 7A510	1	..	..	1	
	7720	1	..	..	1	
12. Two way drilling	HMT	1	..	..	1	
13. Two way taping	HMT	1	..	..	1	
14. Bar type six spindle	KA106	2	..	..	2	
15. Shaft centring		1	..	..	1	
16. H. Milling	6M81E	2	1	..	1	
	6M82	5	1	3	1	
	6M83	3	..	1	2	
	6M80	2	..	..	2	
	6M83	2	1	1	..	
V. Milling	6H11	2	..	..	2	
	6M12	1	..	1	..	
	6M13P	7	..	1	6	
	654	2	1	1	..	
	656	2	..	..	2	
	692A	1	..	..	1	
		29	4	8	17	

1	2	3	4	5	6	7	8
17.	Vertical Tapping . . .	508	1	..	..	1	
18.	Auto Screw cutting . .	1A112	2	..	..	2	
		16136	2	..	..	2	
		15136	1	..	..	1	
			5			5	

MGIPRRND—*S*/10C&AG/83—TSS-I—7-9-83—2060