Report of the Comptroller and Auditor General of India

UNION GOVERNMENT

NO. 2 (COMMERCIAL) OF 1990

MISHRA DHATU NIGAM LIMITED

REPORT
OF THE
COMPTROLLER
AND
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CONTENTS

PREFACE

1. This report on Mishra Dhatu Nigam Limited was prepared by an Audit Board consisting of the following Members :—

Shri C. P. Mittal (Upto 31st March 1988)	Chairman, Audit Board and Ex-officio Additional Deputy Comptroller and Auditor General (Commercial).
Shri K. Tyagarajan (1st April 1988 to 31st December 1989)	Chairman, Audit Board & Ex-officio Additional Deputy Comptroller & Auditor General (Commercial).
Shri K. Tyagarajan (1st January 1990 onwards)	Deputy Comptroller and Auditor General and Chairman Audit Board.
Shri U. N. Ananthan (Upto 24th July 1987)	Member, Audit Board and Ex-officio Director of Commercial Audit, Hyderabad.
Shri B. L. Boipai (25th July 1987 to 31st January 1989)	Member, Audit Board & Ex-officio Director of Commercial Audit, Hyderabad.
Shri N. Bhimarao (1st February 1989 to 31st January 1990)	Member, Audit Board & Ex-officio Director of Commercial Audit, Hyderabad.
Shri P. K. Das Gupta (Upto 29th February 1988)	Member, Audit Board & Ex-officio Director of Commercial Audit, Ranchi.
Shri Lachhman Singh (29th February 1988 onwards)	Member, Audit Board & Ex-officio Director of Commercial Audit Ranchi.
Dr. M. K. Asundi	Head, Metallurgy Division, Bhaba Atomic Research Centre, Bombay—Part time Member.
Dr. V. A. Altekar,	Consultant, Part-time Member.

2. The report was finalised by the Audit Board after taking into account the results of discussions held with the representatives of the Ministry and the Company at its meeting held on 11th August 1989.

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

S/96 C&AG/90—2

OVERVIEW

I. Mishra Dhatu Nigam Limited was incorporated in 1973 for the manufacture of special metals and super alloys. The Company has not laid down its micro-objectives. (Para 1)

II. The paid up capital of the Company which was Rs. 2.00 crores in 1975, stood at Rs. 137.34 crores in 1989. (Para 2)

III. In 1973, the Government entered into collaboration agreement with three foreign firms for transfer of technical know how and advice on engineering for setting up a project for production of 110 grades of super alloys. Out of these 110 grades, 42 grades were not taken up. Around 1984 when the technology was being established, it became clear that some foreign manufacturers including the collaborator had switched over to a more advanced and cost-effective technology in case of Bimetals. (Para 3)

IV. While the project was sanctioned in 1973 at estimated cost of Rs. 30.85 crores, this was revised to Rs. 89.85 crores in 1975 and Rs. 123.48 crores in 1981. Against this an expenditure of Rs. 113.56 crores had been booked till 1988-89 but the completion report had not been prepared as some balancing equipments were stated to be in the process of being provided. (Para 4)

V. It was planned that plant should go into production by January, 1980. Various shops were, however, erected and commissioned with delay ranging from 6 to 45 months. (Para 5.1)

VI. In response to quotations invited for structural steel and cladding work, the work awarded to the ninth lowest offer of Hindustan Steelworks Construction Limited (HSCL). The eight lower offers including offers from two private firms were rejected on the ground that these firms were not capable of undertaking the work. However, HSCL later entrusted the main function of fabrication of entire structural work to the same two private firms. In this process, an extra expenditure of Rs. 20.17 lakhs was incurred. (Para 5.2.1 & 5.2.2)

VII. The civil works entrusted to HSCL were required to be completed by November, 1978 whereas these were completed only by February, 1982. No liquidated damages were recovered for this delay. Similarly the contracts awarded to HEC were expected to be completed by April, 1979 for which there was a delay of 36 to 51 months. While the Company was entitled to liquidated damages of Rs. 14.66 lakhs due to this delay, the Company decided to recover only Rs. 11.00 lakhs. (Para 5.2.3)

VIII. The Company has not worked out the installed capacity of the factory as a whole. The Ministry, however, stressed that the performance of the Melt Shops can be best judged by the utilisation of Forge Shop. With an input of 5144 ingot tonnes, the output from the forge shop is expected to be 4204 tonnes. After processing this output, overall capacity was reckoned at 2729 tonnes by the Ministry. As regards Titanium Shop, the average capacity calculated as 1148 tonnes in June, 1987 was reduced to 900 tonnes in October, 1988 and 700 tonnes in December, 1988 by the Management. (Para 6.1)

IX. The actual capacity utilisation was 41.5% in 1986-87 and 50.30% in 1988-89 with reference to the overall capacity of 2729 tonnes. The capacity utilisation of forge press was always less than 50%. The capacity utilisation of Titanium shop was less than 73% even with reference to the reduced capacity of 700 tonnes. (Para 6.2)

X. Although melt shops had been engaged in commercial production from 1981-82, no standards of burning losses in respect of various grades have been fixed. The value of heats rejected every year varied from Rs. 4.60 lakhs to Rs. 24.70 lakhs. Norms have not been fixed to exercise control in this area. (Para 6.3)

XI. Value of scrap generated increased from Rs. 131.00 lakhs (1983-84) to Rs. 243.68 lakhs (1988-89). Norms for scrap generation were not fixed by the Company. (Para 6.4)

XII. The Company has installed equipments valuing Rs. 81.04 crores by end of March, 1989. Data in respect of utilisation was not available in respect of all the machineries. The utilisation of available hours of some major equipment every year varied from 56% to 44%. The Company had not been analysing the reasons for idle machine hours. (Para 7)

S/96 C&AG/90—3

XIII. About 60% of the sales of the Company are to Government departments and public sector and remaining to the private parties. The orders valuing Rs. 15.93 crores were pending with the Company for more than a year in March, 1989. This included some orders pending execution even prior to 1984-85. (Para 8)

XIV. The Inventory holding of the Company increased from 8.90 months consumption in 1984-85 to 13.20 months consumption in 1987-88. The value of stores issued for consumption but lying in various shops was Rs. 200 lakhs approximately at the end of each year. The value of stores that were not moving for 4 years or more was Rs. 27.80 lakhs. (Para 10)

XV. The Company has been incurring losses since commencement of commercial production. The accumulated operational loss upto 1988-89 was Rs. 37.64 crores. (Para 11.3)

MISHRA DHATU NIGAM LIMITED

(MIDHANI)

1. Introduction

1.1 Mishra Dhatu Nigam Limited (MIDHANI) was incorporated on 20th November 1973 for manufacture of special metals and super alloys required for the strategic sophisticated industries.

1.2 The Bureau of Public Enterprises had asked (May 1979) the Public Enterprises to spell out their micro objectives consistent with the broad objectives contained in the Industrial Policy Statement of December 1977 in order to facilitate a realistic and meaningful evaluation of the performance of Public Enterprises by Parliamentary Committee and Government. The Company has not laid down its micro objectives so far (October 1989). The Ministry stated (July 1989) that the Company, in tune with the micro objective of achieving self reliance in strategic alloys, and in close interaction with the critical sectors, has been formulating its plans for development and production of various types of alloys on yearly basis and that these annual targets should be deemed as micro objectives.

2. Capital Structure

The Company was registered with an authorised capital of Rs. 20.00 crores which was raised from time to time and stood at Rs. 140.00 crores as on 31st March 1989. The paid-up capital which was Rs. 2.00 crores by March 1975, stood at Rs. 137.34 crores as on 31st March 1989 and was wholly subscribed by the Government of India.

3. Collaboration Agreements and Technology Transfer

3.1 In September/October 1973 the Government of India entered into collaboration agreements with three foreign firms for transfer of technical knowhow and advice on engineering for setting up a project for production of 110 grades of superalloys. The details of agreements, the periods of their currency, the grades covered and the collaboration fees paid are given below :

Name of Collaborator	Effective date of commencement of the agreement / Date upto which valid	Products	Collaboration fees paid (Rs. in lakhs)
A	23-10-1973 / 31-10-1989	85 grades	251.41
B	23-10-1973 / 23-10-1981	10 grades	12.42
C	24-09-1973 / 31-03-1984	15 grades	53.46

3.2 The three collaboration agreements were assigned to the Company by the Government in November 1974. The Planning Commission cleared the project in January 1976

3.3 The status of technology transfer and implementation by the end of October 1989 was as under :

Name of Collaborator	Number of Grades					
	Proposed to be transferred	Transferred upto October, 1989	Taken up for execution upto October, 1989	Completed upto October, 1989	In progress by October, 1989	Balance grades not taken up
A	85	73	53	42	11	32
B	10	4	4	3	1	6
C	15	11	11	8	3	4
	110	88	68	53	15	42

3. (a) Technical Assistance	220		324.02		312.83	
(b) Training Expenses	67	287	89.00	413.02	46.36	359.19
4. (a) Engineering Consultancy	130		146.00		161.59	
(b) Administration during construction	100	230	484.96	630.96	484.96	646.55
5. Contingencies		311		67.12		
6. *Other Expenses*						
(a) Off site facilities (Water & Power)	41		71.32		72.09	
(b) Preliminary	4		3.08		3.08	
(c) Initial spares	547		664.24		664.24	
(d) Start up	165	757	780.00	1,518.64	659.00	1,398.41
		8,985		12,347.60		11,356.00

Although the commercial production commenced in July 1983, the Company continued booking expenditure under this project even during 1988-89 i.e. six years after commencement of commercial production. The Company has stated (October 1988) that some balancing facilities were required for augmentation of the product mix. During Audit Board meeting (August 1989) the Ministry explained that, with reference to technological development, various product mixes needed new equipments which were termed balancing equipments. The completion report had also not been prepared as yet (March 1989).

The Ministry further stated (September 1989) that in a high technology plant of a pioneering nature such as MIDHANI, it is but natural that there are some changes in the product mix originally visualised vis-a-vis that obtaining a decade later. While, according to the Ministry, the change in product mix has not entailed additional installations of any major production facilities and only auxiliary and supporting equipments/facilities in the various shops need to be oriented towards the changed market requirements. The additional facilities, so required, being only of supporting nature, the Ministry clarified that these are basically not for increasing the capacity.

The Ministry expected that the completion report would be submitted to the Government after installation of these balancing facilities, in a course of two years.

5. Project Implementation

5.1 The Planning Commission had considered the investment pattern for the project on 27th January 1976 and decided that the project should be implemented as planned and installed within 42 months and commissioned within 51 months from the go-ahead date of 1st October 1975. As such the entire plant should have gone into production by January 1980. In this connection, a reference is invited to para 1 of chapter XV of the report of the Comptroller and Auditor General (Commercial)-1980, Part V. The various shops were, however, erected and commissioned with delays ranging from 6 to 45 months as detailed below :—

Erection and Commissioning of shops	Scheduled date of completion	Actually completed	Months delayed	Broad reasons attributed for the delay
MELT SHOP I	496 tonnes			
Erection Commissioning	February 1979 February 1980	August 1980	6 months	Severe power cut and other commissioning problems.
MELT SHOP II	397 tonnes			
Erection Commissioning	February 1979 February 1980	September 1980	7 months	Modification of the systems during commissioning and non-availability of erection Engineers.
TITANIUM SHOP	325 tonnes			
Erection Commissioning	February 1979 February 1980	October 1980	8 months	Severe power cut and certain problems in commissioning.
FORGE SHOP	1903 tonnes			
Erection Commissioning	April 1979 February 1980	April 1981	15 months	Severe Power cut, Repeated failures of Hydraulic and Electronic System during trial operation of press resulting in modification of major hydraulic unit.
HRM SHOP	2237 tonnes			
Erection Commissioning	April 1979 February 1980	December 1982	34 months	Delay in manufacture and delivery of hot sheet and strip unit by HEC, Ranchi, delay in supply of Bar Mill and Wire rod Mill by MECON, lack of adequate response to global equipment leading to delay in placement of purchase order.
CRM SHOP	723 tonnes			
Erection Commissioning	April 1979 February 1980	December 1982	34 months	Due to delay in supply of certain parts of the equipment by the suppliers.
BAR & WIRE DRAWING SHOP				
Erection Commissioning	April 1979 February 1980	April 1981	14 months	Delay in supply of certain parts of the equipment by the suppliers and non-availability of suppliers' Engineers for commissioning.
P.M. SHOP				
Erection Commissioning	April 1979 February 1980	April 1979		Ahead of schedule
CORE SHOP				
Erection Commissioning	July 1980 September 1980	March 1984	45 months	Decided to phase it out to suit the commissioning of the upstream manufacturing shop and partly on account of delays in the supply and erection of the equipment.

5.2 Some of the salient aspects noticed in the contracts are given below :

5.2.1 In response to open tenders invited in December 1975 for structural steel and cladding work for 5870 tonnes (approx), 17 offers (10 from Public Sector Undertakings and 7 from Private firms) were received. The offer of Triveni Structurals Limited (TSL), (a Public Sector Undertaking) was the lowest of Rs. 254.74 lakhs while the offer of a private firm 'P' was the second lowest at Rs 268.70 lakhs. The offer of another private firm 'S' was the third lowest at Rs. 282.98 lakhs and the offer of Hindustan Steel works Construction Limited (HSCL) (a Public Sector Undertaking) was the ninth lowest at Rs. 343.16 lakhs. The Consulting Engineers recommended (April 1976) for awarding the work to the firm 'S' whose offer was the third lowest at Rs. 282.98 lakhs on the ground that they had executed several contracts upto 5000 tonnes of work.

5.2.2 During May 1976 discussions were held with six parties including TSL, 'P' and HSCL. The Board of Directors was apprised in May 1976, that HSCL showed willingness to take up the structural work at substantially lower rates subject to the condition that they should also be given the contracts for civil works for main plant buildings on mutually agreed terms. The Board constituted a Negotiating Committee of Directors with the then Chairman and Managing Director as its Chairman. The Committee observed (8th July 1976) that the rates offered by the lowest tenderer viz TSL for the Steel items were not realistic. Further, the Committee did not consider the offers of the private firms on the plea that these firms were not capable of undertaking the work of the magnitude involved. It recommended (August 1976) that the contract be awarded to the HSCL which offered a price concession of 12.5 per cent on the total cost of the tender. In September 1976 a work order was issued for Rs. 300.26 lakhs. The civil works stage I and II Rs. 114.07 lakhs and Rs. 298 lakhs respectively were also simultaneously awarded to HSCL. It was observed that HSCL in turn had entrusted the main function (i.e.) fabrication of the entire structural work to same two private sector firms whose offers to the Company in the open tenders were lowest when compared to that of HSCL. Though the benefit of lower rates quoted by these private firms was availed of by HSCL by entrusting the work to them, the rejection of lowest offers ab initio stating that the firms were not capable of undertaking the work resulted in an extra expenditure of Rs. 20.17 lakhs. The Ministry stated (September 1989) :

> "..after careful consideration of the complexity involved in coordinating the setting up of the plant it was decided by the Board that both the structural and civil works should be entrusted to one agency and that considering its wide experience in dealing with large projects HSCL should be awarded the contract even though they were not the lowest".

5.2.3 As per the work order the Stage-I civil works were to be completed by end of February 1978 and the Stage-II civil works by end of November 1978. The provision made in the work order in regard to validity of rates upto 30th April 1980 indicates the uncertainity of the anticipated completion of work within two years, in the light of non-availability of bill of quantities for Stage-II civil works. The civil works were actually completed only by end of February 1982 with extensions without levy of liquidated damages.

Reasons for the delay in completion of the civil works Stage-I and II were indicated as below :—

- Delay in furnishing the design drawings to the contractor due to non-receipt of equipment parameters from suppliers.
- 'Holds' were imposed on column foundations, equipment foundation, flooring etc. to enable transportation and easy movement of equipment inside the shops, examination and determination of requirement of grouting work, refractory flooring etc.

The Ministry stated (July 1989) that HSCL had completed 97 per cent of the work by April 1980. Reasons for delay in completion of balance work were not attributable to HSCL and hence the contract period was extended without levy of liquidated damages.

5.2.4 As per the contract with HEC Hot Sheet and Strip Mills were expected to be commissioned within 25 months from the date of awarding the contract i.e. by April 1979. Against this target, the Cold Rolling Mill (CRM) shop was commissioned in April 1982 (a delay of 36 months) and Hot Rolling Mill (HRM) shop was commissioned in July 1983 (a delay of 51 months). Although CRM shop was ready for production in April 1982, this could be utilised only with effect from July 1983 as the output of HRM shop constitutes the input for this shop.

Due to this delay of 51 months, the company was entitled to levy liquidated damages of Rs. 14.66 lakhs against which the company decided to recover only Rs. 11.00 lakhs.

6. Production Performance

6.1 Capacity

6.1.1 The major shops of the plant are two melt shops, Forge shop, Titanium shop, Hot Rolling Mill shop (HRM), Cold Rolling Mill shop (CRM), Bar and Wire Drawing shop, Core and Laminations shop and Powder Metallurgy shop. There are three primary melting furnaces and two secondary melting furnaces in the two melt shops. In the primary melting furnace, the metal is produced either in the shape of Electrodes or Ingot depending upon the requirement of the process. While the ingots are transferred to forge shop for further processing the electrodes are transferred to secondary melting furnaces where ingots are produced from electrodes and transferred to Forge Shop for further processing. All these furnaces including their auxiliaries were commissioned in 1979 and 1980. The company has not worked out the installed capacity for the factory as a whole. Following were the constraints stated by the company (December 1988) in defining the plant capacity:

(i) Wide product mix
(ii) Changes in utilisation of individual equipments
(iii) Facility constraints.
(iv) Changing customer requirement.

6.1.2 The capacity of melting equipment and forging equipment were indicated as follows (December 1988):

	Designed capacity	Installed capacity (as per existing product mix)	
	(Tonnes)	(Tonnes)	
Melt shops			
(a) Primary Melting			
(i) Arc Furnace	3246	4500	
(ii) Air Induction Melting (AIM) Furnace	1112	1112	
(iii) Vacuum Induction Melting (VIM) Furnace	642	700	
(b) *Secondary Melting*			
(i) Vacuum Arc Refinery (VAR) Furnace. II	655	655	(200)
(ii) Electroslag Refining (ESR) Furnace	339	2350	(1400)
Forging Press	5144	5144	(3500)

(The figures in bracket indicate restriction due to auxiliary facilities).

The Ministry stated (July 1989) that the above capacities were based on three shift operation and the capacity for primary furnaces taken together should be reckoned at 3600 tonnes according to existing manpower for two shift operation.

6.1.3 As forge shop is the single common point in all product lines, the Ministry, during discussion with Audit Board (August 1989), stressed that the performance of the plant can be best judged by the utilisation of Forge shop.

6.1.4 As per Engineering report, the input to the Forge shop was 5144 ingot tonnes with an output of 4204 tonnes and after the HRM, CRM and Wire drawing process, the overall capacity was expected to be of the order of 2500 to 3000 tonnes. In view of this the overall capacity of the plant was reckoned at 2729 tonnes by the Ministry.

6.1.5 In addition to the primary and secondary furnaces stated above, the plant also has a Vacuum Induction Refinery (VIR) Furnace costing Rs. 83.56 lakhs which has a designed as well as installed capacity of 1750 tonnes. This furnace is used for refining process with liquid metal taken from Arc Furnace.

6.1.6 So far as the Titanium Shop is concerned, its main equipments are TEP for compacting and VAR Furnace I for melting the electrodes. The major equipments including the auxiliaries were commissioned between September 1979 and March 1981. In VAR I furnace both titanium and steel ingots can be produced. The Management indicated the following to be the capacity of the Titanium Alloys and Steel Alloys on three different dates:

	Installed capacity as calculated in June 1987 (Tonnes)	As stated by Management in	
		October 1988 (Tonnes)	December 1988 (Tonnes)
Titanium Alloy	1170	900	700
Steel Alloy	1125	900	700
Average on basis of 50 : 50 basis	1148	900	700

While the capacity calculated in June 1987 was stated to be only theoretical, the capacity stated in December 1988 was stated to be based on existing product mix.

6.2 Capacity Utilisation :

6.2.1 The table below indicates the capacity utilisation envisaged to be achieved and actually achieved during five years ending March 1989:

	1984-85	1985-86	1986-87	1987-88	1988-89
Utilisation :					
(i) As envisaged in Engineering Report (%)	60	90	100	100	100
(ii) Actually achieved based on capacity of 2729 tonnes(%)	35.6	42.4	41.5	39.0	50.3

equipment breakdowns and electrical breakdowns etc. the heats were declared as failed and the entire materials could be remelted for getting the ingot/ electrodes.

6.3.3 The following table indicated the value of heats rejected and the expenditure incurred on the heats failed for the six years ending March 1989 :

(Rs. in lakhs)

Year	Value of heats rejected	Melting charges on heats failed
1983-84	15.27	0.22
1984-85	20.41	0.16
1985-86	11.17	0.52
1986-87	4.60	1.78
1987-88	5.39	2.37
1988-89	24.70	2.66

6.3.4 No norms were fixed to exercise any control in this area. The company stated (October 1988) that in view of rigid specifications and inspection standards; no norms of rejections could be fixed and that the annual losses had been less than 5 per cent of the primary production on an average.

6.4 Scrap

6.4.1 Generation of scrap occurs at the melting, forging and rolling stages and in all other down steam processes. The particulars of the total input charged, scrap generated and scrap consumed during the six years upto 1988-89 and the closing stock at the end of each year are given below :

Year	Total input charge	Scrap generated	Scrap consumed	Percentage of scrap		Closing stock at the end of each year	Value (Rs. in lakhs)
				Generated to input charges	Consumed to input charges		
		(in tonnes)					
1983-84	3159	1289	805	40.83	25.50	1195	131.00
1984-85	2898	1009	1374	34.81	47.41	830	137.04
1985-86	2691	773	1006	28.74	37.39	597	143.54
1986-87	2933	830	876	28.32	29.86	551	186.58
1987-88	1936	762	616	39.35	42.15	697	196.96
1988-89	1987	807	877	40.64	44.16	627	243.68

6.4.2 No norms for scrap generation were separately fixed by the Company. There was an increase in the value of closing stock of scrap from year to year. In quantitative terms the closing stock at the end of each of the six years represented 11, 10, 9, 8, 11 and 9 months' production of the respective years.

6.4.3 The Ministry stated (July 1989) that norms for scrap generation are not required to be separately fixed because scrap generation is a function of the normative yield and rejection control which are monitored separately. The Ministry further stated (July 1989) that :—

- Scrap generation depends upon the number of heats taken for a given grade.
- Normally close monitoring is done on the yield of the product and this activity indirectly controls the volume of scrap generated.
- The volume of scrap generated is a part of the materials process only and not due to poor production performance or faulty planning or bad workmanship.

6.4.4 A detailed examination in audit in case of quantum of scrap generated in case of a few grades, however, revealed that no analysis was done by the Company to find out whether the excess scrap generated was on account of poor performance of production process or faulty planning or bad workmanship in respect of those grades.

6.4.5 An analysis of the scrap in certain grades also revealed that :—

- the Company was not in a position to recycle or reuse the titanium scrap for want of heavy jaw crushers.
- as at 31st March, 1989 the Company had an unidentified scrap valued Rs. 4.95 lakhs which might not be useful for the melt of any grade.
- there was 162.628 tonnes of a special metal scrap valued at Rs. 80.85 lakhs as on 31st March, 1989 pertaining to the supply order of 'V' as the execution of this supply order upto the forged stocks had already been completed and there was no likelihood of use of this heavy stock of scrap.

The Ministry stated (July 1989) that with the approval of 'V' for use of 50 per cent of scrap for a recent order the scrap consumption was expected to increase and the stocks were expected to be progressively consumed.

7. Machine Utilisation

7.1 The Company had installed several equipments valued Rs. 8104.41 lakhs by end of March 1989.

7.2 Out of these equipments, the company had been collecting machine utilisation particulars in respect of a few equipments only for the purpose of calculating average machine hour rate for evaluating the work-in-progress at the end of each year. In respect of some major equipments (Details in Annexure-I) the Ministry has intimated (July 1989) the following position :—

	1984-85	1985-86	1986-87	1987-88
Available hours	40,000	40,000	40,000	40,000
Hours utilised	22,034	21,020	17,539	18,252
Percentage of Utilisation	56	53	44	46

Although the plant as a whole had gone into commercial production from July 1983 the Company had not been analysing the reasons for the idle machine hours.

The Ministry has stated (July 1989) that :—

- there are about 20 major equipments supported by 100 odd auxiliary processing equipment which, in turn, are served by another 250 odd minor equipment. It is neither possible nor visualised to ensure full utilisation of all these auxiliary and minor equipment.
- taking this factor into consideration Company has been concentrating on the utilisation of major equipment having a bearing on the total capacity of the Plant.
- the number of available machine hours is dependent on several factors such as nature of operations, extent of breakdowns, extent of preventive maintenance and extent of manning provided.

7.3 It was observed in audit that the following equipment was found to be either idle or under-utilised.

7.3.1 Machines lying idle

	Value (Rs. in lakhs)	
CORE SHOP		
(i) Bell furnaces	15.37	Procured for core shop in 1981-82 were not commissioned so far.
CRM SHOP		
(ii) Bimetal degreasing line	42.46	Not put to use due to technology becoming obsolete.
(iii) 20 High Foil Mill	144.79	These equipments could not be put to use for want of orders.
(iv) Foil Annealing Furnace/Line	36.75	
(v) Foil slitting line	6.34	
P.M. SHOP		
(vi) Pickling line equipment	4.92	For want of orders these equipments could not be put to use.
(vii) Annealing lines 2 numbers	7.15	
(viii) Multiple draft wire drawing machines 2 numbers	4.13	
BAR & WIRE DRAWING SHOP		
(ix) Vacuum Impregnation Plant	3.00	For want of orders this machine was not being used.

During the discussion in Audit Board meeting held in October 1988 regarding the overall utilisation of capacity built up for the plant in juxta position with the order book picture, it was highlighted that while orders for 1900 tonnes valued at Rs. 38.00 crores were to be executed (many of those for 4 to 5 years) the capacities remained underutilised. The Management stated that a good number of pending orders were for small quantities and it would not be advantageous or economical to take up production.

The Ministry stated (July 1989) in regard to the orders received before 1984 and remaining unexecuted that these orders were accepted when the production technology was not fully demonstrated at that point and at very low prices.

8.3 The Company had no specific Pricing Policy. A pricing committee comprising representatives from Marketing, Finance, PPC, QCL, Melt and Forge and Management Services recommends the price to be tendered in respect of each enquiry. This recommendation is based on the quantity of raw material required and technical processes to be routed through as given by the Production, Planning and Control wing. The costing section places the cost analysis before the pricing committee. Based on this and the prevailing market prices (PDP prices etc)., the Committee recommends the price to be offered. While offering the price, the Company was trying to obtain a rate sufficient to cover atleast the marginal cost in respect of each sale order.

8.4 The Company did not prepare any price list for the standard items. It did not maintain job-wise or sale order wise cost records and profitability analysis in respect of each sale order. It was, however, observed in audit that out of the 44 sale orders executed in 1986-87, the Company incurred a loss of Rs. 210.36 lakhs in respect of 33 orders and made a profit of Rs. 50.96 lakhs on 11 orders and in 1987-88 out of 52 orders executed, the Company incurred a loss of Rs. 151.21 lakhs on 38 orders and earned a profit of Rs. 71.53 lakhs on 14 orders. Out of the sale orders executed during 1986-87, 17 orders only were executed within the stipulated period of delivery. The delay in execution of the balance orders ranged from one year to four years. The Company stated (October, 1988) that the standard price lists in respect of 'M' Wires, Titanium Products and Superheat Products were being prepared for specific periods.

9. Manpower

9.1 The table below indicates the man-power requirement envisaged in the Engineering Report of June, 1975 for the full production level and the actual deployment of man-power by the Company at the end of each year for six years ending March, 1989.

At end of March	No. of employees as per engineering report			Actual deployment of employees		
	Executives	Non-executives	Total	Executives	Non-executives	Total
1984	257	1795	2052	259	1221	1480
1985	257	1795	2052	267	1271	1538
1986	257	1795	2052	264	1268	1532
1987	257	1795	2052	268	1241	1509
1988	257	1795	2052	271	1246	1517
1989	257	1795	2052	270	1238	1508

The engagement of executive staff exceeded the limit indicated in the Engineering Report from March, 1984 although the production was ranging between 35.60 per cent and 54.98 per cent from 1984-85 to 1988-89 of the full production level. The Government stated (September, 1989) that the executive strength was divided into technical and non-technical. So far as the technical strength was concerned, MIDHANI had to deploy a near full complement for absorption of technology and for translation into use at the shop floor without any reference to number of shifts of operation. The Government further stated that the excess strength on non-technical side was due to assessment of inadequate man-power in Engineering Report for non-technical areas.

9.2 In the Engineering Report the ratio of direct to indirect man-power was indicated at 1:1.15 at full operational level. The ratio between the direct and indirect workers was, however, found to be higher as follows :

Year ending 31st March	Non-executives		Ratio Direct Workers/ Indirect Workers
	Direct	Indirect	
1985	470	800	1 : 1.70
1986	575	900	1 : 1.56
1987	455	786	1 : 1.73
1988	478	768	1 : 1.61
1989	477	761	1 : 1.60

The Government stated (July, 1989) that the Engineering Report did not include the manning for non-technical areas viz. Security, Commercial Offices and for other positional requirements.

10. Material Management and Inventory Control

10.1 The cost of direct materials constituted more than 60 per cent of the cost of production.

10.2 The following are the inventory holdings as at the end of each year for the five years upto 1988-89:

	1984-85	1985-86	1986-87	1987-88	1988-89
No. of Month consumption held in Stock					
Raw materials (excluding scrap)	11.6	7.0	5.9	4.2	2.9
Stores & Spares	22.2	23.8	28.1	26.5	15.52

According to the Ministry (July, 1989) :

(i) Raw material stock has to be reviewed after eliminating :—

(a) effect of deliberate decision to stockpile certain materials.

(b) internally generated scrap.

(ii) Inventory of spares has to be related as percentage of the value of equipment installed.

(iii) Shop floor stocks are not to be reckoned in inventory holdings.

With this background the Ministry (July, 1989) has given figures of inventory holding according to which the inventories were of the following order :—

Year	Number of months of consumption	
	Raw materials	Stores
1983-84	12.09	(not given)
1984-85	6.53	8.90
1985-86	4.55	9.93
1986-87	4.21	15.13
1987-88	3.34	13.20

Even with this composition, the stock of raw materials in terms of number of months consumption was very high in 1983-84 and the inventory holding of spares was on increase.

10.3 Stores are issued from main stores to the various shops for consumption. The value of such stores issued, but lying in various shops at the end of each year for the five years ending March, 1989 was as follows :—

As on 31st March of	Rs. in lakhs
1985	275.77
1986	239.38
1987	209.08
1988	207.27
1989	193.50

10.4 The stocks in the shops as on 31st March, 1989 included 9 items of raw materials valued Rs. 6.55 lakhs and 61 items of major consumables valued Rs. 43.98 lakhs which were lying idle in the shops for more than four years. Keeping heavy inventory with the shops will stand in the way of the Management having adequate control over the procurement of raw materials and stores.

The Company/Ministry stated (October 1988/ July, 1989) :—

— stores on shop floors were required in day-to-day use in manufacturing operations.

— the non-moving raw materials of the value of Rs. 6.55 lakhs were left overs of raw materials which were procured in initial stages for trial operations and development purposes.

— the major consumables had been initially purchased anticipating full utilisation of the capacity of HRM & CRM shops, and efforts were being made to explore the market for increasing the utilisation capacity in HRM & CRM shops and only then these items could be fully utilised.

10.5 The year-wise break-up of work-in-progress as on 31st March, 1989 given below :

Year	Quantity (tonnes)	Value (Rs. in lakhs)
1983-84**	41.76	27.50
1984-85	32.27	25.26
1985-86	59.35	49.79
1986-87	61.35	38.18
1987-88	136.85	162.68
1988-89	856.83	824.17
	1188.41	1127.58
*and earlier		
Add : Stock disposals	105.24	69.72
Total :	1293.65	1197.30

10.6 The work-in-progress pertaining to the years from 1979-80 to 1986-87 (including stock disposals) amounting to Rs. 210.45 lakhs could not be moved out as sales or converted into finished products. This had, therefore, resulted in unnecessary blocking up of working capital funds to the tune of Rs. 210.45 lakhs.

The Government stated (July, 1989) that certain items for which no order were likely to be received were identified for disposal and the value of such items disposed of in 1988-89 was Rs. 77.26 lakhs and further action was on hand for identifying work-in-progress for disposals.

10.7 A review of the Central Stores bin cards and priced stores ledgers showed that as on 31st March 1989, 71 items of raw materials, lubricants, consumables and other stores valued Rs. 15.18 lakhs were not moving for more than 4 years, and in the case of mechanical stores and spares 195 items valued Rs. 5.16 lakhs and 145 items valued Rs. 7.46 lakhs were not moving for more than 6 years and 4 years respectively. The total value of these non-moving items was Rs. 27.80 lakhs.

The Ministry stated (July 1989) that out of these non-moving items 'GC' and 'SP' were the major items and one product item was already sold for Rs. 1.15 lakhs. In regard to shell-pollisage it was stated that the company had taken up the matter with the Collaborators for its use in different applications. It further stated that a Committee was already examining critically the remaining items of small value for their use or for disposal.

10.8 The particulars of claims with Vendors towards value of shortages, damaged and rejected items outstanding at the end of each year for the last five years are given below :—

As at the end of March	Amount of claims
	(Rs. in lakhs)
1985	14.86
1986	18.63
1987	12.36
1988	11.81
1989	10.87

The amount of Rs. 10.87 lakhs as on 31st March 1989 included claims worth Rs. 3.53 lakhs pending for more than three years.

11. Financial Position and Working Results

11.1 The financial position of the Company for the five years upto 1988-89 is summarised below :

(Rs. in lakhs)

	1984-85	1985-86	1986-87	1987-88	1988-89
Liabilities					
(a) Paid up capital (including share deposits)	13696.00	13734.00	13734.00	13734.00	13734.00
(b) Borrowings from Govt. of India :					
(i) Project Loans	—	—	—	—	—
(ii) Working Capital Loans	500.00	600.00	320.00	—	—
(iii) Unsecured Loans	—	—	20.00	40.00	175.00
(c) Deferred Liabilities	52.48	63.83	60.48	24.23	—
(d) Trade Dues and other liabilities and provisions	1349.58	1871.21	1778.63	1404.25	1885.31
TOTAL	15598.06	16269.04	15913.11	15202.48	15794.31
Assets					
(e) Gross Block	9687.80	9910.91	9957.12	10008.15	10073.31
Less : Depreciation	1558.15	2110.29	2680.34	3239.88	3818.62
(f) Net Fixed Assets	8129.65	7800.62	7276.78	6768.27	6260.69
(g) Capital-Work-in progress (including Expenditure/pending allocation)	149.69	58.72	43.63	83.85	70.74
(h) Investments	—	—	—	—	0.01
(i) Current Assets, Loans & Advances	3740.16	4402.57	4509.90	4443.38	5745.21
(j) Deferred Revenue Expenditure	882.83	821.57	715.28	540.50	365.71
(k) Losses	2695.73	3185.56	3367.52	3366.48	3351.95
TOTAL	15598.06	16269.04	15913.11	15202.48	15794.31
Capital Employed	10577.22	10403.42	10101.70	9922.22	10270.99
Net worth	10177.44	9726.87	9651.20	9827.02	10016.34

NOTES : (1) Capital employed represents net fixed assets plus working capital.

(2) Net worth represents paid up capital plus reserves and surplus less intangible assets.

11.2 The working results of the Company during 1984-85 to 1988-89 were as follows :-

(Rs. in lakhs)

	1984-85	1985-86	1986-87	1987-88	1988-89
(i) Sales (Less : returns and excluding E.D.)	1275.51	1849.30	2758.20	2747.97	3317.34
(ii) Accretion (+)/Decretion (—) in finished goods & work-in-progress	(+)401.34	(+)287.55	(—)261.44	(—)154.00	(+)122.84
(iia) Despatches with sub-contractors	—	—	—	—	164.44
(iii) Value of production (i+ii)	1676.85	2136.85	2496.76	2593.97	3604.62
(iv) Less : Consumption of Raw Materials	803.01	877.10	747.54	714.69	1291.24
(v) Value added	873.84	1259.75	1749.22	1879.28	2313.38
(vi) Conversion cost as detailed below :					
(a) Consumable materials	163.61	157.39	156.25	167.30	248.92
(b) Power and Fuel	296.39	327.57	325.67	355.92	497.13
(c) Employees Remuneration & Benefits	381.65	401.00	456.67	506.28	577.62
(d) Other expenses	187.60	231.76	349.05	251.44	355.47
(e) Interest	20.66	81.06	76.74	2.35	1.75
(f) Depreciation	545.96	553.18	570.95	558.89	582.65
(g) Direct Expenditure (DRE)	47.99	81.45	152.32	168.30	200.47
	1643.36	1833.41	2087.65	2010.48	2464.01
Less : 1. Expenditure relating to start-up, capital works	16.55	57.29	27.21	8.78	—
2. Other Income	15.43	21.79	*28.54	*23.41	*30.16
Net Conversion Cost	1611.88	1754.33	2031.90	1978.29	2433.85
(vii) Loss for the year	738.04	494.58	282.68	99.01	120.47
Net prior period adjustments	(—)93.99	(—)4.75	(+)9.40	(—)32.37	(—)34.20
(viii) Net loss	644.05	489.83	292.08	131.38	154.67
(ix) Percentage of value added to :					
(a) Value of Production	52.11	58.95	70.06	72.45	64.19
(b) Conversion cost	54.21	71.81	86.09	95.00	95.05

*NOTE :—The interest of Rs. 110.12 lakhs, Rs. 132.42 lakhs and Rs. 169.20 lakhs earned on corporate deposits have not been taken into account for the purpose of working out operational results for the years 1986-87, 1987-88 and 1988-89 respectively.

11.3 The Company incurred losses since commencement of commercial production. The accumulated operational loss upto 1988-89 was Rs. 3763.69 lakhs (after prior period adjustments).

11.4 In this connection, it was also observed that

(i) The Company secured from the Government project loans amounting to Rs. 69.48 crores during 1978-79 to 1981-82 and working capital loans amounting to Rs. 13.86 crores during 1981-82 to 1983-84. The total loan amount of Rs. 83.34 crores was converted by Government into equity in June 1985 and interest amounting to Rs. 36.10 crores on the loans upto March 1984 was waived with a view to improving the economic viability of the Company.

(ii) During 1984-85 and 1985-86 the Company secured loans amounting to Rs. 7.00 crores from Government to meet its working capital requirements and repaid them in 1985-86 to 1987-88.

11.6 It was also noted that the company has not laid down any credit policy. Advances are collected from the customers ranging from 5 per cent to 95 per cent depending upon their paying capacity. Documents are forwarded to the customers directly in the case of Government Departments and through Bank or Company's Commercial Officer in respect of others.

The Company, however, decided on extending the credit facility to the customers upto 45 days from the date of despatch on a case to case basis depending upon each case. The following table indicates the sales and volume of book debts at the end of each year for the five years ending March 1989.

(Rs. in lakhs)

Year	Sales	Total Book Debts		Percentage of Book Debts to Sales	Book-debts in terms of number of months' sales
		Considered good	Considered doubtful		
1984-85	1321.80	431.61	4.68	33.01	3.96
1985-86	1924.25	536.84	5.29	28.17	3.38
1986-87	2854.98	420.41	20.54	15.44	1.85
1987-88	2929.36	609.08	15.88	21.33	2.56
1988-89	3471.37	1088.26	23.01	32.01	3.84

12. Costing System

12.1 The Bureau of Public Enterprises have been stressing (September 1966/September 1968/August 1970) the need for introduction of scientific system of costing in public sector undertakings. The Committee on Public Undertakings in their 67th Report recommended the need for developing cost consciousness at various levels of management in Public Sector Enterprises. Although the Company had been manufacturing about 80 grades of alloys in various sizes and shapes at various stages, it had not introduced any scientific costing system. Production documentation such as work orders, job orders, process sheets, etc. were not maintained to ascertain the order-wise process-wise costs. It had, however, been working out at the end of each financial year the average cost of production of each grade upto the stage of hot rolling, for the limited purpose of valuation of closing stock of work-in-progress for annual accounts. The cost of other downstream processes were not being worked out for the reason that the cost of production at the hot rolling stage itself had been exceeding the sale realisation. Thus even the compiliation of limited data at the end of the year was not useful for control of costs.

12.2 For the purpose of submission of quotations against enquiries from customers the Company had been preparing marginal costs (variable costs), cash cost (adding overheads) and the total costs (including the depreciation and amortisation) which were based on estimates only. The Company had not been working out the actual cost of production against any sale order to ascertain whether it was incurring loss or earning profit and to what extent. In this connection a reference is invited to Para 8.4 wherein it was brought out that an analysis made in audit revealed losses in 33 sale orders out of 44.

The Ministry stated (July 1989) that a full fledged job order cost system had since been introduced.

A. C. Tiwari

(A. C. TIWARI)
Deputy Comptroller and Auditor General-cum-
Chairman, Audit Board

New Delhi
The 26-10-1990

Countersigned

C. G. Somiah

(C. G. SOMIAH)
Comptroller and Auditor General of India

New Delhi
The 26-10-1990

ANNEXURE I

(Refer Para 7.2)

Statement showing the analysis of available hours of some machines and their utilisation

Sl. No.	Equipment	Basis (Shifts)	Available hours per year	Actual hours utilised during			
				1984-85	1985-86	1986-87	1987-88
1.	Arc furnace	2 shifts	3000	2085	2171	2506	1416
2.	VIR/AIM	2 shifts	3000	1253	798	535	610
3.	VIM	2 shifts	3000	2391	1105	1418	927
4.	ESR/VAR-2	3 shifts (Common Crew)	4500	3381	3824	2044	3342
5.	VAR-1	3 shifts (2 weeks) 2 shifts (2 weeks)	3750	2571	1627	1454	1313
6.	Forge Press	2 shifts	2000	1014	885	843	706
7.	1500 Kg. Hammer	2 shifts	3000	722	780	719	624
8.	Hot Mills (Bar Mill, Wire Rod Mills, Hot Sheet & Strip Mills).	1 shift	1250	879	1001	925	922
9.	4-Hi Mill	1 shift	1500	1182	1255	819	672
10.	6-Hi Sheet Mill	1 shift	1500	549	867	972	814
11.	12-Hi Strip Mill	1 shift	1500	234	150	272	91
12.	3 Bull Blocks & Multi-Head	2 shifts	12000	5773	6557	5032	6815
		TOTAL	40,000	22034	21020	17539	18252

ANNEXURE II

(Refer Para 8.1)

(Quantity in tonnes)

Name of Product Group	Licenced capacity created	Sales effected during the year											
		1983-84		1984-85		1985-86		1986-87		1987-88		1988-89	
		Qty.	Percentage to capacity	Qty.	Percentage to capacity	Qty.	Percentage to capacity	Qty.	Percentage to capacity	Qty.	Percentage to capacity	Qty.	Percentage to capacity
1. P—1	200	9.99	5.00	17.27	8.64	28.91	14.46	19.83	9.91	28.25	14.12	30.70	15.55
2. P—2	200	2.37	1.18	22.28	11.14	31.28	15.64	71.91	35.95	70.26	35.13	54.61	27.30
3. P—3	515	841.12	163.32	798.63	155.07	956.30	185.69	918.50	178.35	844.75	164.75	1112.94	216.10
4. P—4	204	11.89	5.82	23.92	11.72	10.67	5.23	14.40	7.05	19.29	9.46	24.84	12.18
5. P—5	200	9.35	4.68	36.90	18.45	39.44	19.72	37.59	18.79	39.14	19.57	40.18	20.09
6. P—6	210	5.61	2.67	5.27	2.51	6.46	3.08	5.01	2.38	5.08	2.42	6.10	2.90
7. P—7	100	0.02	0.02	0.47	0.47	1.16	1.16	1.05	1.05	1.82	1.82	1.21	1.21
8. P—8	1000	43.15	4.31	51.37	5.14	62.05	6.21	40.54	4.05	34.16	3.42	46.74	4.67
9. P—9	30	8.88	29.60	13.75	45.83	17.93	59.77	23.28	77.60	25.45	84.83	28.20	94.00
10. P—10	10	—	—	—	—	—	—	—	—	—	—	—	—
11. P—11	50	—	—	—	—	—	—	—	—	—	—	—	—
12. P—12	10	—	—	1.78	17.8	2.14	21.4	—	—	—	—	1.73	17.30
13. P—13	—	—	—	—	—	—	—	368.45	—	252.79	—	201.20	—
	2729	932.38	34.16	971.64	35.60	1156.34	42.37	1500.56	54.98	1320.99	48.40	1548.45	56.74

NOTE :—Facilities for magnet shop (50 tonnes) and tube shop (20 tonnes) were not established.

MGIPRRN)—S/96 C&AG/90—TSS-I—26-7-90—2050

ERRATA

Page No.	*Column*	*Reference*	*For*	*Read*
(iii)	2	23rd line	Commercial Audit Ranchi	Commercial Audit, Ranchi
(v)	1	32nd line	work awarded	work was awarded
3	—	4th line	superalloys	superalloys
7	4th column of table	Against Forge Shop	15	14
8	1	8th line	of	at
11	2	2nd line from bottom	toto	in-toto
12	2	4th line	;	,
12	2	9th line	steam	stream
14	3	5th line	annealing	annealing furnace
18	2	8th line	Month	Months'
21	Table under 1984-85		1643.36	1643.86
21	2	7th line from bottom	11.6	11.5
25	last column	Against P–1	15.55	15.35

S/96 C&AG/90