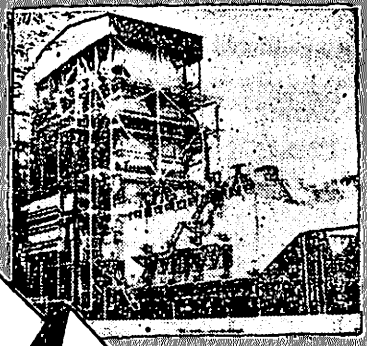
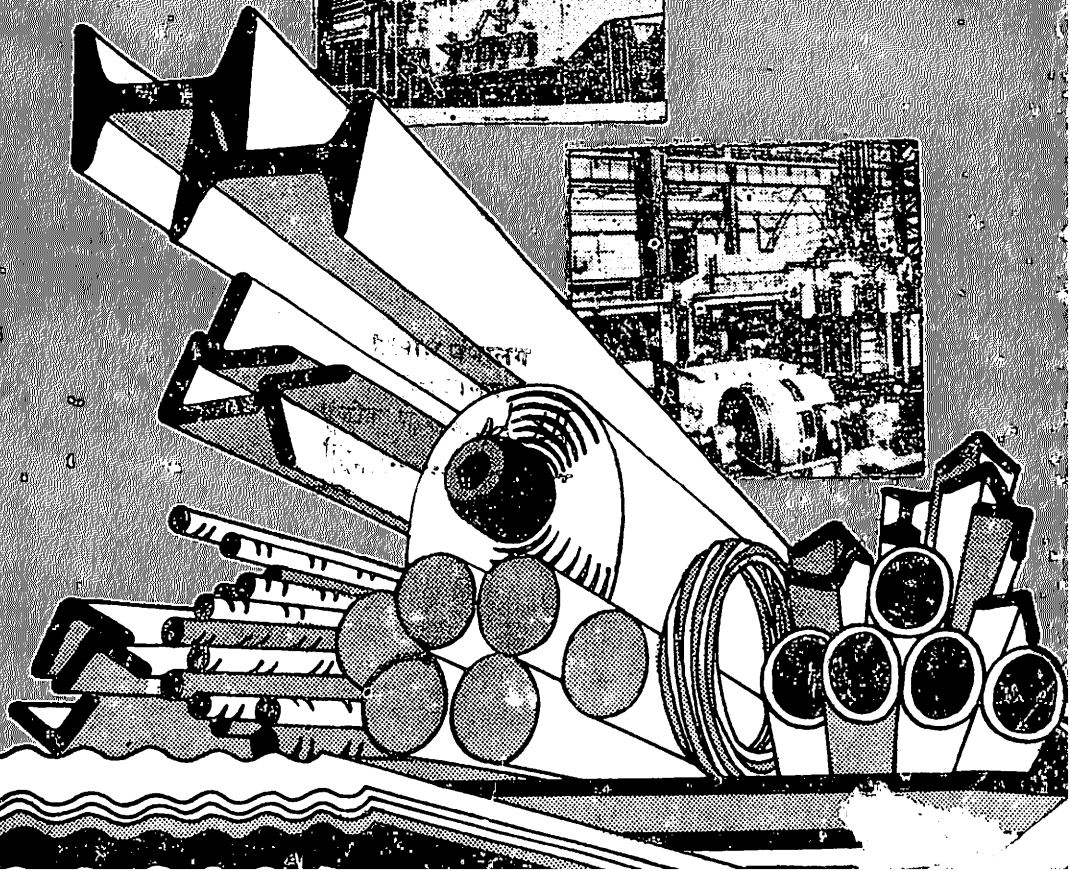
REPORT
1982-83

GOVERNMENT OF INDIA
MINISTRY OF STEEL AND MINES
DEPARTMENT OF STEEL
NEW DELHI





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PREFACE

This Report is divided into two parts.

Part I presents an overall picture of the Department of Steel highlighting, *inter alia*, planning and development in the Steel Sector.

Part II covers the activities and the performance of the organisations/undertakings under the Department of Steel during the year.

CONTENTS

PART—I

PART I

CHAPTER I

DEPARTMENT OF STEEL—MAIN FUNCTIONS AND ORGANISATIONAL STRUCTURE

1. *Main Functions*

1.1 The Ministry of Steel and Mines has two Wings—Department of Steel and Department of Mines. The Department of Steel is responsible for the planning and implementation of policies for production, distribution and import and export of iron and steel. This encompasses planning and development for the iron and steel industry both in the public and private sectors, the development of essential inputs such as iron ore, limestone, colomite manganese ore, chromite etc., the formulation of import and export policies in respect of pig iron, steel and ferro-alloys, and other related functions. The Iron and Steel industry includes the integrated steel plants, the electric arc furnace units, re-rolling mills, wire drawing units, producers of cold rolled strips and skelp, tin plate manufacturers, ferro-alloy producers and units making special and alloy steels. A list of subjects allocated to the Department of Steel is given in Annexure-1A.

2. *Organisational Structure*

2.1 The Department of Steel has a Secretary, four Joint Secretaries, three Directors, five Deputy Secretaries, seven Under Secretaries and one Deputy Controller of Accounts. The Department has a common Financial Adviser of the status of Additional Secretary and a common Controller of Accounts with the Department of Mines. A technical wing consisting of an Industrial Adviser, four Development Officers and three Assistant Development Officers assists and advises the Department in technical matters. The size of the secretariat of the Department continues to be small, with a total strength of only 323. A statement showing the representation of women, scheduled castes and scheduled tribes, ex-servicemen and physically handicapped persons among the employees is given at annexure-1B.

2.2 One of the Deputy Secretaries in the Department acts as the liaison Officer for watching the interests of Scheduled caste and Scheduled tribe employees in service matters. One of the Under Secretaries functions as the Welfare Officer of the Department. There is a Complaint Cell in the Department to receive

public complaints and grievances and to ensure that these are dealt with promptly.

2.3 The Department of Steel has only one attached office viz., the Office of the Iron and Steel Controller at Calcutta. The Iron and Steel Controller, who is of the status of a Joint Secretary, is assisted by two Joint Controllers, four Deputy Controllers, seven Assistant Controllers, one Industrial Adviser, two Development Officers and one Assistant Development Officer in the head-office. There are six regional offices with Regional Iron and Steel Controllers at Bombay, Calcutta, Hyderabad, Kanpur, Madras and New Delhi. The main functions of the Regional Controllers are indicated in Annexure-1C. The details of the employees of the Iron and Steel Control Organisation are given in Annexure-1D.

2.4 The Iron and Steel Control Organisation was initially set up to perform the regulatory functions envisaged in the Iron and Steel (Control) Order, 1956. Its responsibilities have expanded over the years. It now plays a very important advisory role, in addition to its regulatory functions, in practically all matters relating to the Iron and Steel Industry. The Iron and Steel Controller monitors the working of the electric arc furnace industry, the secondary producers, the tin plate manufacturers, the ferro-alloy industry etc. He also heads the Joint Plant Committee which was formed to perform specific functions under the Iron and Steel (Control) Order and to administer various funds such as the Freight Equalisation Fund, the Steel Development Fund, etc.

2.5 In performing the regulatory and control functions assigned to him, the Iron and Steel Controller and his Regional Controllers continued to carry out inspections to check mis-utilisation of Iron and Steel. A statement showing the number of inspections carried out and punitive action taken by the Iron and Steel Control Organisation during 1981-82 and 1982-83 (April to November, 1982) is given in Annexure-1E.

In view of the easy availability of Steel and relaxations in Steel distribution policy, the Iron and Steel Controller has relaxed end use restrictions for a number of items.

2.6 The Department of Steel has 16 Public Sector Undertakings under its administrative control. A list of these Undertakings is given in Annexure-1F. There is also a Mineral Development Board which is the centralised agency for ensuring systematic, coordinated and integrated development of ferrous and other designated strategic minerals.

ANNEXURE—1A

LIST OF ITEMS ALLOCATED TO DEPARTMENT OF STEEL

1. Steel Plants in the Public and Private Sectors, the re-rolling industry and ferrro-alloys including all future development.
2. Development of Iron Ore mines in the public sector including beneficiation/upgrading of low grade iron ores.
3. Development of other ore mines and coal washeries and mineral processing for the steel plants.
4. Production, distribution, prices, imports and exports of iron and steel an ferro-alloys.
5. Planning, development and control of and assistance to all iron and steel industries.
6. Production, supply, pricing and distribution of iron ore, manganese ore, limestone, sillimanite, kyanite and other minerals and alloys used in the steel industry excluding grant of mining lease or matters connected therewith.
7. All attached or subordinate offices or other organisations concerned with any of the subject specified in this list.
8. Mineral Development Board.

ANNEXURE—1B

Statement showing the number of Employees, number of SC/ST, Physically Handicapped, Ex-Servicemen, Men & Women as on 31-12-1982 in respect of the Secretariat of the Department of Steel.

Group	No of Employees.	Men	Women	S.C.	S.T.	P.H.	Ex-Servicemen
A. . .	32	29	3	1	—	—	—
B. . .	83	78	5	1	1	—	—
C . .	134	103	31	20	—	3	3
D . .	74	73	1	30	10	—	1
TOTAL .	323	283	40	52	11	3	4

ANNEXURE—1C

DUTIES AND FUNCTIONS OF THE REGIONAL IRON & STEEL CONTROLLERS

(i) To collect factual information regarding the capacities of all iron and steel based units registered with the Iron & Steel Control and, inter-alia, to monitor particulars of the various inputs, production and capacity utilisation of these units on a regular basis.

(ii) In all cases where import clearance is given by the Iron & Steel Controller, to ensure proper utilisation of imported materials and to report about the actual requirements of raw materials, spare parts and other consumables.

(iii) To identify and encourage industrial units taking up programmes of import substitution and also suggest items which need not be imported because of indigenous availability.

(iv) To render assistance to core projects and priority sectors in obtaining their requirements of iron and steel.

(v) To conduct monthly market surveys and report the overal availability and supply position of iron and steel materials in their regions with particular reference to price of critical items.

(vi) To aid, assist and guide the iron and steel based units to increase production by ensuring adequate supply of raw materials and other inputs.

(vii) To inspect iron and steel based units registered with DGTD and also report progress of implementation of Letters of Intent and licences issued by the Government of India so far as they pertain to the iron and steel industry.

(viii) To conduct status survey of the iron and steel industry licenced by the Iron and Steel Controller.

The Regional Controllers also monitor supplies to SSICs and some other sectors by the main producers with a view to ensuring that they get their requirements of iron and steel materials. Regional Iron and Steel Controllers, being field officers, directly provide regular feed-back to Iron and Steel Controller and Ministry with regard to up-to-date trend of the industry regarding Productions, Price, Supply etc.

ANNEXURE—1 D

Statement showing the number of Employees (Groupwise) Number of SC/ ST, Physically Handicapped, Ex-servicemen, Men & Women as on 31-12-1982 in respect of Iron and Steel Control Organisation.

Group	No. of employees	Men	Women	S.C.	S.T.	P.H.	Ex-Servicemen
A	26	26	—	2	—	—	—
B	17	17	—	4	—	—	—
C	190	163	27	34	4	3	5
D	85	84	1	20	2	—	2
TOTAL	318	290	28	60	6	3	7

ANNEXURE—1 E

Statement showing the number of cases of Inspection/Suspension/Debarment in 1981-82 (April 1981-March '82) and 1982-83 (April-November, 1982).

	Inspection		Suspension		Debarment	
	1981-82	1982-83	1981-82	1982-83	1981-82	1982-83
1. Bombay	901	167	171	31	87	41
2. Calcutta	361	98	111	25	88	43
3. Delhi	491	75	143	7	124	28
4. Hyderabad	750	178	73	18	90	32
5. Kanpur	370	90	112	38	52	38
6. Madras	882	253	107	6	72	27
TOTAL	3755	861	717	125	513	209

ANNEXURE—1F

LIST OF PUBLIC SECTOR UNDERTAKINGS UNDER THE DEPARTMENT OF STEEL

1. Steel Authority of India Limited.
2. Indian Iron and Steel Company Limited (Subsidiary of Steel Authority of India Limited).
3. Metallurgical & Engineering Consultants (India) Limited.
4. Hindustan Steel Works Construction Limited.
5. Kudremukh Iron Ore Company Limited.
6. National Mineral Development Corporation Limited.
7. Manganese Ore (India) Limited.
8. Bharat Refractories Limited.
9. Indian Firebricks & Insulation Company Limited (a Subsidiary of Bharat Refractories Limited).
10. Metal Scrap Trade Corporation.
11. Perro Scrap Nigam Limited (a Subsidiary of MSTC).
12. Sponge Iron India Limited.
13. IISCO Stanton Pipe & Foundry Company Limited (a Subsidiary of Indian Iron & Steel Company Limited).
14. Rashtriya Ispat Nigram Limited.
15. Neelachal Ispat Nigam Limited.
16. Vijaynagar Steel Limited.

CHAPTER 2

PLANNING AND DEVELOPMENT IN THE STEEL SECTOR

India had only two Integrated Steel Plants in 1947—The Tata Iron & Steel Company with a capacity of 1.0 Million Tonnes and Indian Iron & Steel Company with a capacity of 0.3 million tonnes. These Plants were largely based on foreign technology, but were financed from indigenous sources.

2. An ambitious steel development programme was taken up during the second Five Year Plan period (1956-61), by setting up three Integrated Steel Plants, each with a capacity of 1.0 million tonnes at Rourkela, Bhilai & Durgapur. The capacity of TISCO and ISSCO was also expanded to 2.0 and 1.0 million tonnes, respectively. In the Third Five Year plan, the production at Rourkela, Bhilai and Durgapur was further stepped up by expanding the capacity to 1.8, 2.5 and 1.6 M. Tonnes, respectively. Simultaneously a scheme to set up a plant at Bokaro with an initial capacity of 1.7 million tonnes, with USSR collaboration, was approved.

3. Presently there are 6 integrated steel plants, five in the public sector and the 6th—the Tata Iron & Steel Company Ltd.—in the private sector, with an installed ingot capacity of 11.4 million tonnes. The capacity of Bhilai and Bokaro Steel Plants is being increased to 4.0 M. Tonnes each and that of TISCO to 2.10 MT (saleable steel capacity to be increased from 1.524 MT to 1.740 MT in the 1st Phase of modernisation) thereby raising the capacity with the integrated steel plants to 14.50 MT, by the end of the Sixth Plan.

4. The product mix of the six integrated steel plants has been designed to serve the diverse needs of various sectors of our economy and includes blooms, slabs, billets, bars, light, medium and heavy structurals, rails, sleepers, wheels and axles, plates, hot and cold rolled sheets and strips, galvanised and tin plated sheets, electrical sheet steel. About 40% of the steel produced by these plants is oriented to meet the demand of civil construction, 50% that of engineering industry & 10% of the miscellaneous group including Defence.

2—918 Steel/82

.5 The availability of steel is further supplemented by electric are furnace units based on the use of steel scrap/sponge iron. The present licenced capacity of 165 units is 4.1 MT per annum, of which 144 units are presently in production. The actual production from these units was 2.03 MT during 1981-82 and is expected to be 2.11 MT during the current year.

6. In the Sixth Five Year Plan—1980-85, the main exphasis has been placed on expeditious completion of the expansion programme mainly at Bhilai and Bokaro Steel Plants, modernisation and replacement in the existing steel plants; research and development and technological improvements with a view to achieving higher productivity; ensuring adequate availability of physical inputs and monitoring and augmentation of infrastructure facilities, particularly power. The plan also envisages setting up of a new steel plants at Visakhapatnam and a second new steel plant.

7. Demand of saleable steel in the country has been estimated at 12.70 MT by 1984-85 and 18.40 MT by 1989-90, on the basis of consumption level of 8.0 MT during 1979-80. The corresponding production of steel, including the output of electric arc furnace units (mini steel plants) has been planned to be increased from 7.30 MT in 1979-80 to 11.50 MT in 1984-85 and 17.40 MT in 1989-90.

8. A provision of Rs. 4000 crores has been made in the Sixth Plan for the Iron & Steel Sector. Schemewise outlay during 1980-85, is given in Annexure 'A' Important schemes already under implementation/consideration, during the Plan period, are as follows :

(i) Expansion of Bhilai and Bokaro Steel Plant to a capacity of 4.0 million ingot tonnes each;

(ii) Further expansion of Bokaro Steel Plant to a capacity of 4.75 million ingot tonnes;

(iii) Salem Steel Plant with a annual capacity of 32,000 tonnes of cold rolled stainless steel sheets based on imported hot band. The project has since been commissioned.

(iv) Visakhapatnam Steel Project of 3.25 million ingot tonnes capacity, in two over lapping stages.

(v) A second-shore based steel plant with an ultimate capacity of 3.0 million tonnes of crude steel.

(vi) Modernisation of Tata Iron & Steel Company to increase the existing capacity of 2.0 million ingot tonnes to 2.16 million ingot tonnes. The modernisation scheme is likely to be completed by 31st March, 1983. The capacity is further proposed to be expanded to 2.30 MT of ingots through second phase of modernisation.

(vii) Increase in the capacity of Alloy Steels Plant, Durgapur, from 100,000 tonnes to 160,000 tonnes of alloy steel ingots and ultimately to 260,000 tonnes of liquid steel under its expansion/modernisation programme.

(viii) A project to produce 37,500 tonnes per annum of cold rolled grain oriented electrical steel sheets and 36,000 tonnes per annum of cold rolled non-grain oriented steel sheets at Rourkela Steel Plant.

(ix) Modernisation of Bhilai, Rourkela and Durgapur Steel Plants to have increased productivity with minimum investment.

(x) Pelletisation Plant of 3.0 million tonnes/annum at Mangalore, based on iron ore concentrate from Kundremukh Iron Ore Project.

(xi) A Direct Reduction Pilot Plant with a capacity of 10 tonnes per day, using solid reductant, i.e. non-coking coal, as an R&D Project to SAIL.

(xii) Additional power generation capacity at Bokaro (3 x 60 MW) Durgapur (2 x 60 MW), Rourkela (2 x 60 MW) and Bhilai (3 x 60 MW).

(xiii) A slag cement plant for production of Portland Blast Furnace Slag (PBFS) cement from Bhilai and Rourkela slag.

9. A Working Group on Iron & Steel has been constituted to prepare a long-term profile for the development of steel industry upto 2000 AD. Its broad terms of reference are :

(1) To formulate a perspective plan for the development of steel industry in the country upto the turn of the

century, taking into account among other factors, particularly the following :

(i) the demand and its likely pattern;

(ii) the need to provide infrastructural support to other sectors of economy;

(iii) the infrastructural support, viz., raw materials, power, transportation facilities that could be required and the financial resources necessary for implementation of the steel development plan.

(iv) the technological options that may be available and the strategy most suited to Indian conditions.

(2) To suggest measures that may be adopted for development of such manufacturing, technological and managerial capabilities as may be required for implementing the development plan.

Recommendations of this Working Group are expected by the middle of 1983.

ANNEXURE—2A

OUTLAY FOR CENTRAL INDUSTRIAL AND MINERAL PROJECTS IN THE 6TH PLAN (1980-85)

(Rs. in crores)

Sl. No.	Organisation/Project/Scheme.	Sixth Plan (1980-85) Outlay.
1	2	3
1.	DEPARTMENT OF STEEL	4000·00
A.	STEEL	3757·21
1.1	**Bhilai Steel Plant**	915·27
1.1.1	Continuing Schemes.	741·64
1.1.1.1	4 MT Expansion	740·00
1.1.1.2	Other Scheme-second Sintering Plant, Dalli Mechanised Mines and 8th Coke Oven Battery	1·64
1.1.2	Additions, Modifications, Replacement, Township etc.	27·50
1.1.3	New Schemes.	110·00
1.1.3.1	Plan Modernisation.	100·00
1.1.3.2	Expansion of Mines-Expansion of Dalli Mines, Development of Lime stone quarry	10·00
1.1.4	S&T Programme	36·13
1.2	**Durgapur Steel Plant**	179·65
1.2.1	Continuing Schemes, Captive Power Plant	74·65
1.2.2	Additions, Modifications, Replacement, Township etc.	55·00
1.2.3	New Schemes, Modernisation of Steel Plant	50·00
1.3	**Rourkela Steel Plant**	422·43
1.3.1	Continuing Schemes	96·75
1.3.1.1	Silicon Steel Project	87·21
1.3.1.2	Modernisation of Hot Strip Mill	6·61
1.3.1.3	Additional Neptha Reforming Plant	2·93

1	2	3
1.3.2.	Additions, modifications, replacement, township etc.	52·50
1.3.3	New Schemes	273·18
1.3.3.1	Cement Plant	120·51
1.3.3.2	Fertilizer plant diversification	20·00
1.3.3.3	Modernisation of steel plant.	50·00
1.3.3.4	Coke Oven (Vth Battery)	12·67
1.3.3.5	Captive Power Plant	70·00
1.4	**Bokaro Steel Plant**	811·00
1.4.1	Continuing Scheme	711·00
1.4.1.1	1·7 MT Stage.	8·72
1.4.1.2	4 MT Expansion including CRM Complex.	561·14
1.4.1.3	Slag Granulation Plant	1·67
1.4.1.4	Captive Power Plant	101·78
1.4.1.5	Iron Ore Mine, Meghabataburu.	35·88
1.4.1.6	Kiriburu Expansion	1·81
1.4.2.	Additions, modifications and replacement.	35·00
1.4.3.	New Schemes	65·00
1.4.3.1	4·75 MT expansion	50·00
1.4.3.2	Slag Granulation Plant expansion	10·00
1.4.3.3	Sixth Blast Furnace Complex	5·00
1.5	Alloy Steels Plant, Durgapur	31·28
1.5.1	Continuing schmes (Stage I expansion)	5·03
1.5.2	Additions, modifications, replacement, township etc.	11·25
1.5.3	New Schemes (Secondary Refining facilities Stage II).	15·00
1.6	Indian Iron and Steel Co. Ltd	127.66
1.6.1	Continuing Scheme	16.66
1.6.1.1	Plant rehabilitation Scheme	2.54
1.6.1.2	No. 10 Coke Oven Battery	11.66
1.6.1.3	Departmentalisation of Mine	2.26
1.6.2	Additions, modifications replacement, township	30.00
1.6.3	New schemes	81.00
1.6.3.1	Department of ore mines and collieries	35.00

1	2	3
1.6.3.2	Diversification of Kulti Work	6.00
1.6.3.3	Sintering Plant with anciliaries	40.00
1.7	**Visakhapatnam Steel Plant (Continuing Schemes 3.4 MT Steel Plant Stage I & II**	1050.00
1.8	**Salem Steel Plant (Continuing schemes)**	78.73
1.9	**Sechnd New Steel Plant (New schemes)**	50.00
1.10	**Visvesvaraya Iron and Steel Co. Ltd (Continuing schemes)**	6·00
1.11	**Metal Scrap Trading Co. (Continuing Schemes)**	5·00
1.12	Metallurgical Engg. Consultants India Ltd. (Continuing schemes.)	4·07
1.13	**Hindustan Steel works Construction Ltd.**	10·00
1.14	**Sponge Iron (India) (Ltd.)**	8·0
1.14.1	Continuing schemes (Demonstration Pilot Plant Project)	3·00
1.14.2	New Schemes (Balancing facilities, experimental)	3·00
1.15	**Bharat Refractories.**	8·92
1.15.1	Continuing schemes, Corporation Office, Development of fire clay mines, etc.	6·92
1.15.2	New Schemes Rotary Kiln Complex, Expansion of Refractories Plant at Ranchi Road Sea Water Magensite Plant etc.	2·00
1.16	**SAIL/Central Units**	4·00
1.16.1	Continuing schemes (Corporate office and Management Training Instt. Complex at Ranchi)	1·50
1.16.2	New Schemes (Scheme for home sale & exports)	2·50
1.17	**Vijayanagar Steel Plant**	2·00
1.18	**R & D Centre at Ranchi**	41·70
1.19	**Mahanadi Project (Loan to Madhya Pradesh Government)**	1·50
B.	FERROUS MINERALS	242·79
1.19	**National Mineral Development Corporation**	68·25
1.19.1	Continuing schemes	5·60
1.19.1.1	Bailadila No. 5 Mine	1·12
1.19.1.2	Donimalai Mine	1·48
1.191.3	Exploration and feasibility studies	3·00

1	2	3
1.19.2	Replacement and Renewals	15·00
1.19.3	New Schemes	45·64
1.19.3.1	New Mine at Bailadila	20·00
1.19.3.2	Bailadila No. 11-C Mine	11·78
1.19.3.3	Fine Ore Handling Plant at Bailadila No. 5 Mine	13·86
1.19.4	S & T Programme.	2·00
1.20	**Kudremukh Iron Ore Project Ltd.** (Continuing Scheme.)	70·00
1.21	**Manganese Ore (India) Ltd.**	19·55
1.21.1	Continuing scheme (Shaft sinking & Optimisation of existing Mines	5·55
1.21.2	New Schemes, Beneficiation and agglomeration plant Ferro Manganese Plant AMD/AMM Plant	10·00
1.22	**Mineral Development Board** (Continuing Schemes)	5·00
1.23	**Pellet Plants (New schemes)**	80·00

PART II

CHAPTER I

PRODUCTION

Iron and Steel

The 6 integrated steel plants produced 6.29 million tonnes of ingot steel during April-December, 1982. This represents 74% of capacity utilisation.

2. The integrated steel plants produced 5.26 million tonnes of saleable steel. This represents 81% capacity utilisation. Production during April-December 1982 is only 3000 tonnes less than production during corresponding period last year.

3. The shortfall in production is due mainly to severe constraints in power supply up to September. SAIL plants lost production of 3,20,000 tonnes of saleable steel between April-September compared to 1,79,700 tonnes of production during the corresponding period last year. Rourkela alone lost 1,83,000 tonnes of saleable steel up to September.

4. There has been considerable improvement in supply of power after September and this immediately resulted in improvement of production performance of SAIL plants. In fact SAIL plants achieved their highest production of saleable steel in every month during the 3rd quarter. SAIL plants are expected to maintain this trend of production and exceed last year's record performance.

5. SAIL plants produced 5.65 million tonnes of saleable steel and 6.64 million tonnes of ingot steel last year. This represented growth rate of 18.6% for saleable steel and 21.2% for ingot steel. This year SAIL plants are expected to produce 7.15 MT of ingot steel and more than 5.7 million tonnes of saleable steel. Keeping in view the constraints which have affected the production during the earlier part this year this will be a significant achievement.

6. Production of saleable steel from Alloy Steel Plant during 1981-82 was 52,038 tonnes. Salem Steel Plant which went into commercial production produced 3210 tonnes of saleable steel

during 1981-82 against the target of 2180 tonnes. In 1982-83 upto January the production of ASP was 38,860 tonnes of saleable steel. Salem Steel Plant produced 5730 tonnes upto January 1983 and expects to close the year with a total production of 6500 tonnes.

The mini steel plants produced 20.31 lakh tonnes of steel during 1981-82 and 13.71 lakh tonnes of steel for the period April-November 1982. They are expected to achieve a production of 21.10 lakh tonnes of steel for the year 1982-83 which would mean a capacity utilisation of 61% of installed capacity. The rerolling industry which is the major source of supply of bars and rods, reached a production level of 14.22 lakh tonnes in 1981-82 and is expected to achieve a production of 14.80 lakh tonnes in 1982-83.

7. The wire drawing industry has been working much below their licenced capacity mainly because of inadequate availability of wire rods. As against a licenced capacity of 8.2 lakh tonnes per annum in the organised sector the production of wires in 1981-82 was 3.57 lakh tonnes and is estimated to be 3.04 lakh tonnes in 1982-83.

8. Production of tinplates by the 2 units licensed amounted to 30,000 tonnes during 1981-82 and production in 1982-83 is expected to 61,000 tonnes.

9. The private sector produced 1.42 lakh tonnes of steel strips in 1981-82 and 1.36 lakh tonnes are expected to be produced during 1982-83.

10. Ferro alloy units are expected to produce 2.50 lakh tonnes in 1982-83 as against a production of 3.05 lakh tonnes in 1981-82. The production has come down mainly on account of recession in the steel industry in the world market and decreased exports.

11. Apart from the integrated steel plants the production of pig iron by 3 units in the private sector was 105,000 in 1981-82 and is estimated to be about 90,000 tonnes in 1982-83.

Raw Materials

12. The Kudremukh Iron Ore Project was set up the objective of producing 7.5 m.t. of concentrate annually. The

commercial production commenced in October 1981. A production of 10.30 lakh tonnes of concentrate has been planned for 1982-83 to meet the commitments entered into with Romania. The mines of NMDC produced 62.69 lakh tonnes of lumpy iron ore and 27.02 lakh tonnes of fine ore during 1981-82 and are expected to produce 65 lakh tonnes of lumps and 32 lakh tonnes of fines during 1982-83. During April-November 1982, the Corporation produced 35.54 lakh tonnes of lumps and 16.70 lakh tonnes of fines.

13. The Demonstration Sponge Iron Plant of Sponge Iron India Limited at Kothagudem, A.P., produced 27,203 tonnes of sponge iron in 1981-82 which represents 91% capacity utilisation. In 1982-83, SIIL is expected to produce 28,000 tonnes of sponge iron representing 93% capacity utilisation.

14. Manganese Ore India Limited, the largest producer of manganese ore in the country, produced 4.47 lakh tonnes of manganese ore in 1981-82 exceeding their target of 4.35 lakh tonnes. It produced 3.38 lakh tonnes of manganese ore from April to December 1982 and expects to produce 4.75 lakh tonnes in the full year 1982-83.

15. Bharat Refractories Limited and its subsidiary IFICO produced 55,000 tonnes of refractory bricks in 1981-82 and are expected to produce 71,000 tonnes in 1982-83. From April-December 1982, the production of bricks was 40,500 tonnes.

16. Government declared 1982 as the Year of Productivity. Emphasis was laid on improving the working of public enterprises by increasing efficiency, capacity utilisation and generation of internal resources. All the public undertakings under the Department of Steel prepared Productivity Plans for achieving these objectives. The measures taken for improving productivity are closely monitored both at the plant level and in the Department of Steel.

CHAPTER II

DISTRIBUTION AND SUPPLY

2.1 *Distribution of Steel*

2.1.1 The year 1982-83 will be remembered as a year of easy availability of Steel with the six integrated steel plants maintaining the pace of production, the availability of steel reached 7.752 million tonnes during April—December, 1982 as against 7.292 million tonnes during April—December, 1981. However, despite a 5% growth in consumption during the same period, and increased domestic sales, the stocks of saleable steel with main producers reached the level of 1.49 million tonnes on 1st January, 1983 as against 1.14 million tonnes on 1st April, 1982. SAIL's stocks increased to 1.3 million tonnes on 1-1-1983 from 1.04 million tonnes on 1-4-1982. Hence alongwith the objective of the distribution policy to ensure smooth supply of iron and steel to consuming sectors, the accent has also been on liberalisation of the policy with a view to encouraging off-take of indigenous material by stimulating demand in the consuming sectors. Some of important steps taken during this year in liberalisation of distribution policy are :—

(1) Relaxation of end use restrictions under Clause 7, of Iron & Steel Control Order, 1956.

(2) Abolition of entitlement formula governing distribution of steel items related to capacity, production, past off-take, etc.

(3) Reducing the minimum quantity off-take limit to 100 tonnes for enabling SSI units to avail of the facility of direct supplies from producers' stockyards.

(4) New scheme of supply of certain items of indigenous Steel at internationally competitive prices to those who surrender their duty free REP and Advance Licences.

(5) The New distribution policy of SAIL, doing away with the system of registered traders and throwing open sale to all those interested in trading in steel.

2.1.2 Sixty per cent of the steel produced by the main producers is centrally allocated by the Joint Plant Committee to priority sectors under Status Group 'A' like Defence, Irrigation, CEA, Small Scale Industries Corporations, P&T, Railways, EEPC units. The Iron and Steel Controller and the main producers have a discretionary quota of 5 per cent each. Balance quantity of available steel is distributed through stockyards to consumers covered in 'B' (Government Departments and Undertakings not covered by Status 'A'), 'C' (large and medium industries) & 'D' (all other consumers) priority groups in the ratio of 60 per cent, 35 per cent and 5 per cent, respectively. These customer groups have to register their demand with the Branch Sales Offices of the main producers and they are supplied material on the basis of availability and their inter-se priority. All items other than pig iron, plates and structurals are currently outside the JPC distribution procedure.

2.1.3 Compact group units like tube makers, rerollers, wire drawing units, bright bar manufacturers, are also to register their demand directly with the branch sales offices. There is no entitlement formula related to capacity, production, past off-take etc., governing distribution to these units.

2.1.4 The requirement of iron and steel materials of the small scale units are normally to be met by the respective State Small Industries Corporations from the allocations made to them by the JPC. Previously Units having an off-take of 200 tonnes (100 tonnes for units in Kerala, Tamil Nadu and Karnataka) in any quarter were allowed to draw their requirements of steel directly from the producers' stockyards. This has now been uniformly fixed at 100 tonnes or more in any quarter during the past five years. As an experimental measure the SSI units in Jammu & Kashmir and in the Union Territory of Delhi have also been given the option of drawing their supplies of steel directly from the producers' stockyards.

2.1.5 Supplies of pig iron to the SSI units continue to be routed through the SSI Corporations except in State of Tamil Nadu where the State SSI Corporation is not handling the material. Registered Associations/Co-operative Societies can also now get direct supplies of pig iron, both indigenous and imported from the producers for distribution to their member small scale units on being sponsored by the State Director of Industries and out of the Corporations' allocation.

2.1.6 An allocation of 663,600 tonnes of steel (566,100 tonnes from domestic production and 97,500 tonnes from imports) and 584,000 tonnes of pig iron (384,000 tonnes from domestic production and 2,00,000 tonnes from imports) have been made in favour of the 28 SSI Corporations for 1982-83. The allocation is 20% more for structurals, plates, HR Sheets and pig iron and 10% more for other items as compared to 1981-82. Against this, a quantity of 115,300 tonnes of steel and 360,222 tonnes of pig iron has been supplied to the Corporations up to November, 1982. The supplies would have been larger but for the cancellation of allocation/offer letters by the Corporations.

2.1.7 Pig iron supply continued under a mild strain due to setback in indigenous production. Pig iron has been totally exempted from all import duties. SAIL imported 3.1 lakh tonnes of pig iron during April—December, 1982 to meet the demand. A major decision was taken to make imported pig iron available to SSI/Corporations at stockyard prices.

2.1.8 Rebates ranging from Rs. 140/- to 200/- per tonnes are being given to the SSI Corporations on supplies of steel from indigenous sources to cover their handling expenses. No rebate is given for pig iron. Indigenous pig iron is being supplied to the Corporations at JPC rail-head prices and the Corporations are to sell it to the SSI units at producers' stockyard price. There is a price difference of Rs. 100/- per tonne between the JPC rail head price and the stockyard price of pig iron, which is expected to cover the handling charges of the Corporations.

2.1.9 The Iron & Steel Controller makes allocation of pig iron to small scale industries corporations, railway sleeper manufacturers, spun pipe manufacturers, P&T etc. DGTD units having foundaries obtain their requirements directly from the stockyards. The entitlement formula of individual units has been amended to "Best year's off-take during the five years from 1976-77 to 1980-81 on 20% of licenced capacity, whichever is higher". Essentially certificates issued in favour of foundaries by Government Departments/ undertakings are new entertained by the stockyards.

2.1.10 Iron & Steel materials are supplied by the main producers/stockyards at a uniform price throughout the country. For this purpose a freight equalisation fund is maintained by the JPC. The standard freight element for steel is Rs. 258/- per tonne and Rs. 215/- per tonne for pig iron.

2.1.11 SAIL have a network of 53 stockyards having 60 delivery points throughout the country. In addition TISCO has 12 stockyards and 13 consignment agents. New stockyards are to be opened at Dharmnagar in Tripura and Dimapur in Nagaland to improve the flow of supplies to these regions. Considering the special problems in meeting the requirements of consumers in the North-Eastern region, mainly arising out of transport bottlenecks and logistics, special efforts are being made to ensure that adequate quantities are moved to the region by regular co-ordination between the producers and the Railways. A scheme has also been introduced by which the producers are reimbursed the actual cost of transportation by alternate routes like road/river by the JPC.

2.1.12 With a view to saving foreign exchange and increasing the off-take of indegenous items of steel, a new scheme has been introduced whereby HR Coils/Skelp, CR Coils/Sheets and Stainless Steel Sheets will be supplied at internationally competitive prices to those who surrender their duty free REP Licences and Advance Licences. It has also been made obligatory for the import licence holders enjoying facility for import of such canalised items under various facilities to first approach SAIL for the supply of such materials. Imports will be allowed to them only in cases where SAIL is unable to supply the material and issues No Objection Certificate.

2.1.13 With a view to encouraging off-take of indigenous material and stimulating demand by steel consumers, SAIL have announced a new steel distribution policy on 15th January, 1983 doing away with the concept of registered steel traders and throwing open the sale of steel to all those interested in steel trading. Under the new policy, any trader whether registered with SAIL or not, will be entitled to lift his requirement on first-cum-first served basis. The minimum quantity allotted, however, will not be less than one truck load. The details of steel materials available for sale will be exhibited on the notice boards of the branch sales offices of SAIL, out of which allocations will be made to the respective traders. No preference will be given to registered traders for this purpose.

2.1.14 With a view to ensuring better consumer satisfaction and to remove imbalances in regional availability, SAIL will undertake inter stockyard transportation of certain categories of steel at SAIL's cost, subject to prior sale. The new steel

distribution is expected to broadbase the steel trade and give a fillip to steel consumption.

2.1.15 The requirements of exporters of engineering goods have been given top priority. During 1981-82, 159,160 tonnes of pig iron and 220,443 tonnes of steel were supplied to these units by the main producers. A quantity of 160,000 tonnes of pig iron and 384,000 tonnes of steel is allocated to this sector from domestic sources to help in meeting the export target of Rs. 1550 crores of engineering goods for 1982-83, supplies against this were 76,359 tonnes of pig iron and 67,368 tonnes of steel upto November, 1982. Offers of steel were not accepted by certain units, if that quantity is also taken into consideration, actual supplies would have been higher.

2.1.16 Distribution of the products of mini steel plants, re-rollers and secondary producers is done by the producers themselves. Similarly, alloy steel products are distributed by the producers through their sales network.

2.2 *Pricing*

2.2.1 The year started with a major Government announcement on 1st April, 1982 to discontinue its informal regulation of iron and steel prices. The JPC revised the prices from 2-4-1982. The prices of categories of saleable steel representing 36% of total saleable steel production of integrated plants were increased. These are HR coils 2.55 mm and below, structurals, plates, HR Sheets 14G and thicker and railway materials. The prices of approximately 20% of the total production covering semis and skelp were reduced. No change was effected in the prices of categories representing 40% of total saleable steel production constituting mainly CR coils/Sheets, GP/GC sheets, bars and rods, tin bars etc.

2.2.2 On 23rd October, 1982 JPC again revised the prices. There was upward revision in respect of 58% of the products constituting pig iron, railway materials, plates and structurals, bars and rods, light rails etc. The prices of 40% of the products remained unchanged or marginally re-adjusted. These items included GP/GC Sheets, HR coils/Skelp, CR Coils/Sheets, etc. The prices of semis, mainly blooms and billets were reduced. In announcing this revision, JPC has taken into consideration the norms and guidelines suggested by the BICP.

2.2.3 The price revisions brought about stability in steel prices and considerably reduced the market premia of various items. Easy availability of steel has also contributed to price stability during the year.

2.3 *Imports/Exports*

2.3.1 The Import Policy for 1982-83 was formulated keeping in view the objectives of the "Productivity Year" and the need for ensuring easy availability of scarce raw materials required by genuine industiral users while ensuring that excessive imports do not take place to the detriment of indigenous production.

2.3.2 SAIL continued to be the canalising agency for the import of bulk of the prime steel items in the carbon steel grade covered in the canalised list. Stainless steel plates, sheets, strips and coils, however, continued to be canalised through MMTC. The MSTC continued to be the canalising agency for import of steel melting scrap as well as old ships for breakings. During the year, the MSTC has been given additional responsibility as canalising agency for import of sponge iron and re-rollable carbon steel scrap.

2.3.3 The canalising agencies continued to enjoy the facility for import of canalised items under OGL. The flexibility arrangement as was prevalent in the past for import of baned items was continued, and in addition the automatic licences were partially allowed to be utilised for import of even canalised items.

2.3.4 In the context of record production in 1981-82 and increasing inventories with the main producers, the Import Policy was constantly kept under review to ensure that excessive and avoidable imports do not take place. Certain changes in the Import Policy were made during the course of the year to reduce unregulated and avoidable imports. Such imports were taking place in an environment of world recession in steel and the consequent fall in international prices of steel. The important changes effected in the Import Policy during the year are:—

(i) High Speed Steel (40 to 100 mm rounds) which was importable under OGL has been placed in Appendix 7 of the Policy and made importable only under licences.

(ii) Tinplate waste which was importable under automatic licence has been placed in the list of Limited Permissible Items.

(iii) All seconds/second grades/defectives/cuttings/circles of uncoated plates/sheets/strips/coils in many shape/section/form (of carbon steel) which were in the Automatic Licensing List have been placed in the list of Limited Permissible Items.

(iv) Carbon Steel re-rollable scrap which was importable under OGL has been canalised through MSTC.

(v) Alloy Steel blooms, billets, squares and rounds of 18mm dia and above, have been placed in the list of Limited Permissible Items under Automatic Licence. Export houses will not be eligible to import these items.

(vi) Appendix-7 (List of Automatic Permissible Items) has been split into two lists i.e., for carbon steel and alloy steel. This will permit legitimate imports of each category of steel depending upon past imports but will not permit interchangeability between these two categories.

(vii) A new scheme has been introduced whereby HR Coils/skelp, CR coils/sheets and stainless steel sheets will be supplied at international competitive prices to those who surrender their duty free REP and Advance Licences. It has also been made obligatory for the import licence holders enjoying facility for import of such canalised items to first approach SAIL for the supply of such materials. Imports will be allowed to them only in cases where SAIL is unable to supply and issues No objection Certificate and such import licences are specifically endorsed by the licensing authority for the imports.

2.3.5 Certain changes in the tariff structure were also effected to curb those imports which threatened to affect indigenous production in the face of falling international prices. The steps taken are :—

(i) The duty on alloy steel was increased from 60% to 85%.

(ii) The import duty on tinplate was increased by 10%.

(iii) The countervailing excise duty for tinplate has been increased to be equal to the excise duty.

(iv) Import duty on stainless steel wire rods and wire has been adjusted to be equal so that if there are imports, this should be of the raw material (wire rods) and not of the finished products (wires).

2.3.6 The import plan for the year 1982-83 originally envisaged import of about 1.83 million tonnes of steel and 0.5 million tonnes of pig iron valued at Rs. 645.55 crores. After a re-assessment of the indigenous availability and revision of product-mix of the integrated steel plants to suit the changing demand pattern, the import plan has been curtailed to 1.24 million tonnes of steel and 0.5 million tonnes of pig iron valued at Rs. 538.8 crores. Thus, the revised import plan envisages a saving of Rs. 107 crores in foreign exchange outflow.

2.3.7 To meet the shortage of pig iron it was planned to import 5 lakh tonnes out of which SAIL imported 3.1 lakh tonnes during the period April—December, 1982 and shipments for 1.42 lakh tonnes are outstanding. The duty exemption on pig iron was continued during the year.

During April—December 1982, SAIL imported 1.12 million tonnes of steel valued at 437 crores. The imports were mainly of plates and structurals. The import ordering during April—December, 1982 by SAIL has been for import of 631,680 tonnes valued at Rs. 220.22 crores.

Export of iron and steel is canalised through SAIL. During the year 1982-83 exports have been negligible.

The data published by DGCI&S relating to import of iron and steel items is given in the statement.

ANNEXURE—2B

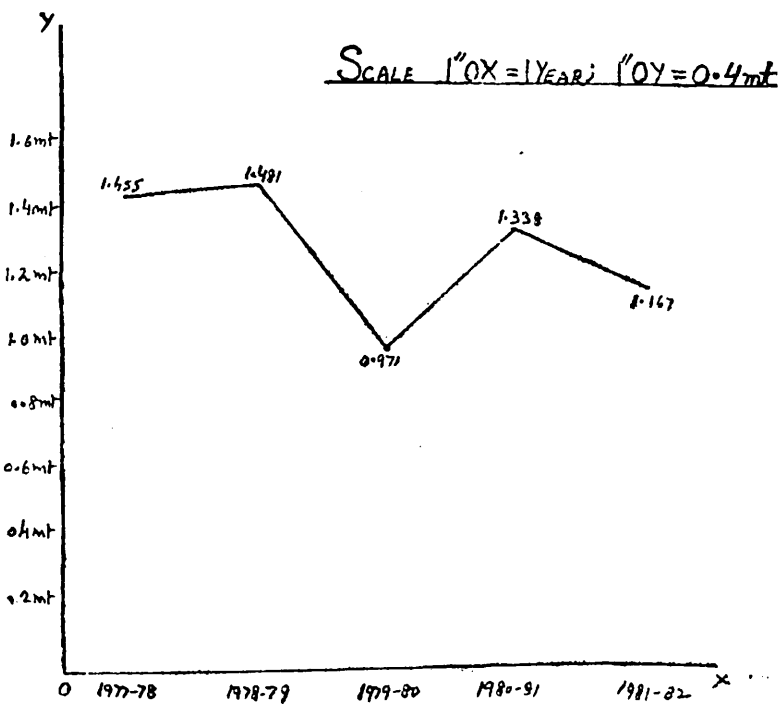
IMPORT OF IRON AND STEEL*

(Quantity in tonnes and value in Rs.'000)

Category.	Quantity		
	1978-79	1979-80	*1980-81 (Apr-Aug.)
1. Pig Iron Sponge Iron etc.	879	1422	746
2. Ferro Alloys	5172	4497	3596
3. Carbon Steel	795369	1699193	330089
4. High Carbon Steel	90037	188620	50150
5. Alloy Steel	164968	458681	12185
6. Rails & Rly. Materials	4947	155474	27853
7. Iron & Steel Scrap	206476	147355	44108
Total	1267848	2655242	578397
	Value		
1. Pig Iron Sponge Iron Etc.	4666	6070	4418
2. Ferro Alloys	60930	120591	40646
3. Carbon Steels	2386286	4048538	1366776
4. High Carbon Steels.	357344	804007	264647
5. Alloy Steel.	796536	2133399	754530
6. Rails & Rly. Materials	35348	209676	164561
7. Iron & Steel Scrap	237875	289776	100325
Total	3878985	7612057	2695904

*Items appropriate to the Department of Steel.
Source—D.G.C. & S.

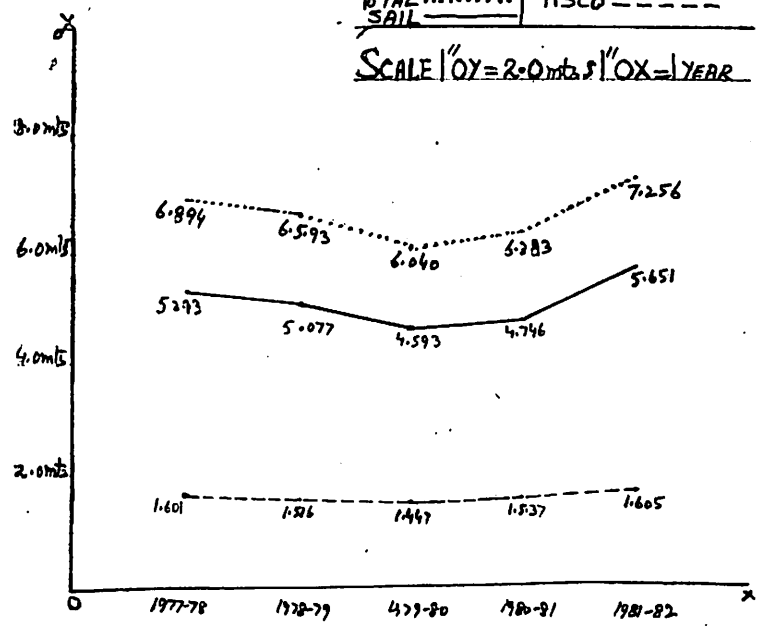
PRODUCTION PERFORMANCE OF SAIL (PIG IRON)



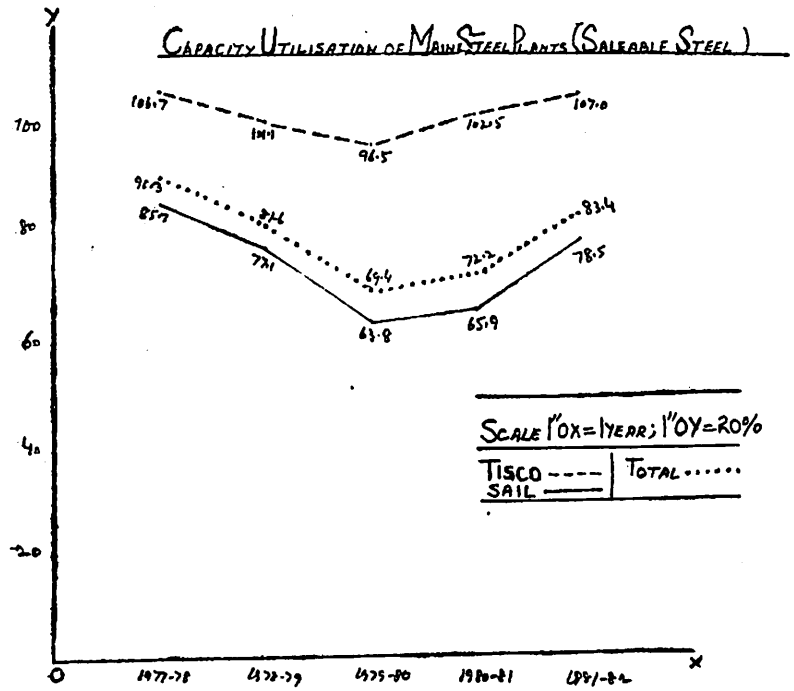
PROD. PERFORMANCE OF MAIN STEEL PLANTS (SALEABLE STEEL)

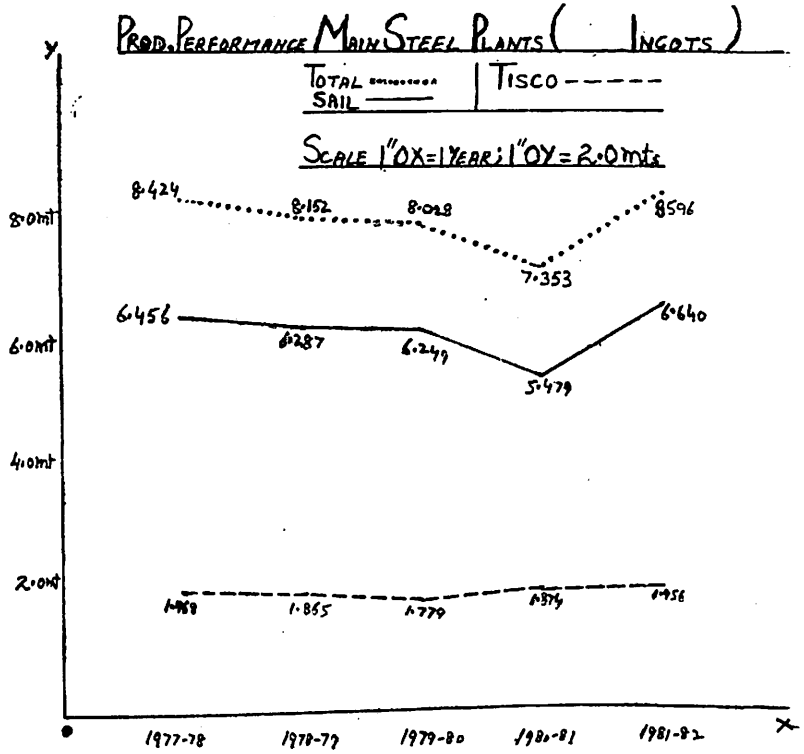
TOTAL SAIL ..... | TISCO _____

SCALE | "OY = 2.0 mts. | "OX = | YEAR



Capacity Utilisation of Main Steel Plants (Saleable Steel)




PROD. PERFORMANCE MAIN STEEL PLANTS (INGOTS)
TOTAL SAIL
TISCO
SCALE 1"OX=1YEAR; 1"OY=2.0mts
y
8.0mt
6.0mt
4.0mt
2.0mt
8.424
8.152
8.028
7.353
8.596
6.456
6.287
6.249
5.479
6.640
1.988
1.855
1.779
1.874
1.958
1977-78
1978-79
1979-80
1980-81
1981-82
x

CHAPTER III

THE PUBLIC SECTOR

3.1 STEEL AUTHORITY OF INDIA LTD.

3.1.1 Steel Authority of India Ltd. (SAIL) is the Flag ship of Indian steel industry. It is fully owned by the Government of India and is responsible for the management of five integrated steel plants at Bhilai, Rourkela, Durgapur, Bokaro and Burnpur and two alloy steel plants at Durgapur and Salem.

3.1.2 *Finance*

The authorised capital of SAIL is Rs. 4,000 crores. The paid up share capital of the company on 31st March, 1982 was Rs. 3177.16 crores. This excludes the share money of Rs. 43.93 crores pending allotment. The paid up capital as on 31st March, 1981 (excluding share money of Rs. 68.46 crores pending allotment) was Rs. 2733.25 crores.

3.1.3 During 1981-82 loans amounting to Rs. 21.80 crores were advanced to the Company by the Government. The total borrowing from Government of India as on 31st March, 1982 amounted to Rs. 1035.52 crores as against Rs. 1017.51 crores on the same day last year. The Company also received a loan of Rs. 250.84 crores from the Steel Development Fund (SDF). The total borrowing from SDF on 31st March, 1982 were Rs. 410.82 crores.

The amount of fixed and cumulative deposits with the Company under the Public Deposit Scheme at the close of the year 1981-82 was Rs. 23.31 crores.

Some of the major investments of the Company as on 31st March, 1982 were as follows :

Indian Iron & Steel Co. Ltd.	Rs. 7323 lakhs
Visvesvaraya Iron & Steel Ltd.	Rs. 1668 lakhs
Metal Scrap Trade Corpn. Ltd.	Rs. 50 lakhs
Almora Magnasite Limited	Rs. 28 lakhs

Shares in MSTC held by the Company have since been transferred to Government. MSTC thus ceased to be a subsidiary of SAIL with effect from 21st May, 1982.

The gross turn over of the Company during 1981-82 was Rs. 2641.25 crores compared to Rs. 2005.69 crores during the previous year. This includes sale of imported iron and steel amounting to Rs. 422.64 crores. The gross profit before providing for interest on fixed loans was Rs. 108.12 crores compared to Rs. 61.19 crores in 1980-81. SAIL earned a net profit of Rs. 39.17 crores in 1981-82 as against Rs. 101 crores in the previous year. The working results of the units of the Company are :

	(Rs. in crores)
1. Bhilai Steel Plant	(+)66·09
2. Durgapur Steel Plant	(+) 0·70
3. Rourkela Steel Plant (Including Fertilizer Plant)	(—)21·71
4. Bokaro Steel Plant	(+) 6·54
5. Alloy Steels Plant	(—) 6·64
6. Salem Steel Plant	(—) 0·13
7. Central Coal Washeries Organisation	(+) 2·75
8. Corporate Office	(—) 8·43
Total	(+)39·17
9. IISCO	(—)37.11

3.1.4 *Production performance*

The production performance and capacity utilisation of SAIL Plants during the last five years is at Annexure-3A and Annexure-3B respectively.

3.1.5 The year 1981-82 was a year of record achievements for SAIL Plants. SAIL achieved their highest production of ingot and saleable steel during that year. Growth rate for ingot steel and saleable steel in comparison to the previous year was 21.2% and 18.6% respectively. For ingot steel fulfilment of target was 82% and for saleable steel 90%. In terms of capacity utilisation production during 1981-82 represents 71% of capacity utilisation for ingot steel and 79% for saleable steel.

3.1.6 There was also a record production of 52,038 tonnes of saleable steel from Alloy Steel Plants during 1981-82. Salem Steel Plant which went into commercial production produced 3,210 tonnes of saleable steel against target of 2,180 tonnes.

Production performance of integrated steel plants during the first 9 months of the current year is as follows :

('000 tonnes)

	Ingot Steel	Saleable Steel	Pig Iron
Actual April-Dec.	4,853	4,086	829
Anticipated	7,155	5,800	1,180

3.1.7 SAIL Plants achieved a very high percentage of growth rate last year. It will, therefore, be a notable achievement for SAIL Plants to exceed last year's record production. The production performance of SAIL Plants would have been still better if they had not been subjected to severe power cuts in the first half of the year. SAIL Plants lost production of 3,65,900 tonnes of saleable steel during the first 9 months on account of inadequate supply of power as compared to 1,76,800 tonnes last year. Rourkela was the worst sufferer losing as much as 2.06 lakh tonnes of saleable steel production due to power cuts. The power situation improved appreciably after September and immediately there was a substantial improvement in the production performance of SAIL. In fact, SAIL Plants have achieved their highest ever production every month after September. With adequate supply of power this trend will continue and SAIL Plants are expected to achieve higher production of saleable steel as compared to the last year.

3.18 SAIL kept up its thrust towrads development of new products. At Bhilai, UTS-90 kg. rails are being developed and SAIL-MA continued to be produced in larger quantities. At Rourkela, successful rolling for Polar Satellite 11th Vehicle of ISRO (Steel with total alloy content of 35% rolled in Plate Mill) was done. The rolling of double clad steel is planned in January, 1983 in addition to continued rolling of steels developed earlier, such as boron treated stabilised steel, single clad steel, SAIL-MA and ROUCOR Steels. At Bokaro also development of BOKEL-40 steel and non-aging deep drawing/extra deep drawing steels using special de-oxidation technique specially for CR sheets for automobile industries was done. In addition, R&D projects were implemented in respect of use of heat resistant grate bars for sinter band, bottom steel band on ingot mould for increasing mould life, etc.

3.1.9 It has been possible to maintain the uptrend in production of SAIL Plants because of timely supply of inputs. The Plants and SAIL Corporate Office maintains close liaison with major inputs supplying agencies like Coal India Limited, DVC, State Electricity Boards and the Railways. Plant Level Infrastructure Coordination Committees were set up during the year to review and settle infrastructure problems at the local level. Government has also taken keen interest in monitoring supply of inputs to steel plants. The Cabinet Committee on Industrial Infrastructure has closely monitored the suplies and played a major role in removing bottlenecks in supply of critical inputs.

3.1.10 0.647 million tonnes of coking coal was imported during 1981-82 for use in SAIL Plants to improve the blend of coking coal and reduce its ash content. 1.1 *million tonnes* has been imported in 1982-83 till December, 1982.

3.1.11 *Personnel*

The total number of employees of the Company and its subsidiaries (including IISCO) as on 31st December, 1982 is given below :—

Group	Total No. of Employees as on 31-12-1982	Scheduled Castes	Scheduled Tribes	Women Employees**
A. SAIL				
Group 'A'	15311	285	133	244
Group 'B'	14987	341	199	744
Group 'C' (Ex. Sweepers)	163256	19238	16901	5937
Group 'C' (Sweepers)	4361	3448	232	1072
Total	197915	23312	17465	7997
B. SUBSIDIARIES (including IISCO)				
Group 'A'	1604	14	8	29
Group 'B'	2689	181	18	6
Group 'C' (Ex. Sweepers)	38952	5593	2137	952
Group 'C' (Sweepers)	847	831	1	223
Total	44092	6619	2164	1210
Grand Toal:	242007	29931	19629	9207**

**In addition to this, there are 2729 women employees in the Mines of Bhilai Steel Plant in work charged and piece-rated categories.

3.1.12 *Industrial relations*

Regular consultations with the representative of workers have led to better climate for industrial relations. The total man days lost during April—December, 1982 was 10,239 compared to 61,000 for the same period last year.

3.1.13 *Safety measures*

There are Standing Committees on Safety in each SAIL Plant. Each plant also has a Safety Engineering Department in providing safety training for workers, arranging safety seminars and safety competitions, accident investigations and follow-up measures. There are also Departmental level Joint Safety Committees. Comparative position of accidents in steel plants during 1981 and 1982 was as follows :—

	1981	1982
No. of reportable accidents	1644	1450
No. of fatal accidents	22	17

3.1.14 *Worker's participation in management*

SAIL Plants have established joint machineries at the plant and shop levels to secure closer association of employees in matters of mutual concern such as improvement in production and productivity, welfare, safety, punctuality and regular attendance etc. At the apex level there is a National Joint Committee on Steel (NJCS) which consists of representatives of steel plants and major unions. The last wage agreement for steel plant employees expired on 30th September, 1982 and the new wage agreement is being negotiated in the NJCS.

3.1.15 *Capital Schemes*

The progress of major capital schemes under SAIL was as follows :—

(i) *4 Million Tonnes Expansion of Bokaro Steel Plant* The annual ingot capacity of Bokaro Steel Plant is being expanded from 2.5 to 4 million tonnes at the approved revised cost estimate of Rs. 1637 crores. The expenditure on this project during 1982-83 upto December, 1982 was Rs. 98.38 crores against the annual plan outlay of Rs. 138.50 crores. Some of the important units under the expansion programme

commissioned during the year are, the raw material handling yard, coke oven battery No. 6 and Sinter Band 3. Steel Melting Shop No. 2 with 300 tonnes L.D. Convertors is expected to be commissioned in March, 1983. This will be a major land mark and will raise the ingot capacity of Bokaro Steel Plant to 4 million tonnes. The 4 MT expansion Programme is expected to be completed in December, 1984 with the Commissioning of the Cold Rolling Mill Complex by December, 1984.

(ii) *Captive Power Plant of Bokaro Steel Plant:* The captive power generation capacity at Bokaro Steel Plant is being expanded by setting up of the second captive power plant consisting of 3 units of 60 M.W. each at the approved revised estimate of Rs. 120.29 crores. The expenditure incurred on this project upto the end of December was Rs. 23.22 crores against the Plan outlay of Rs. 30 crores. The first unit of this project will be commissioned by September, 1983. The 2nd and 3rd units are to be commissioned by January and May, 1984 respectively.

(iii) *4 Million Tonnes Expansion of Bhilai Steel Plant:* The annual ingot capacity of Bhilai Steel Plant is being expanded from 2.5 to 4 million tonnes at the approved revised cost estimate of Rs. 1600.50 crores. The expenditure incurred on this project during the current year upto the end of December was Rs. 105.92 crores against the Plan-outlay of Rs. 156.73 crores. Among important units, the first unit of 30 MW of the 2nd captive power plant was commissioned during the year. The heavy plate section of the plate mill is likely to be commissioned during Fabruary. With the commissioning of this unit, 3200 mm plates will be rolled for the first time in this country. The first two convertors of steel melting shop-II and one bloom caster and one slab caster in the continuous casting shop are expected to be commissioned in June, 1983. The 2nd 30 MW units of captive power plant will be ready for commissioning by March, 1983. The 4 million tonnes expansion programme will be completed with the commissioning of 7th blast furnace complex by December, 1984.

Captive Power Plant at Durgapur

(iv) A scheme for setting up of thermal power generation facilities consisting of 2×60 MW sets for Durgapur Steel Plant and Alloy Steel Plant at a cost of Rs. 82.46 (revised) was sanctioned in September, 1978. The expenditure incurred during the current year up to December, 1982 on this project was Rs. 24.20 crores against the plan outlay of Rs. 25.00 crores. The first unit of this project is expected to be commissioned in December, 1983 and the second unit by May, 1984.

Silicon Steel Project

(v) A Silicon Steel Project for producing 37,500 tonnes of cold rolled grain oriented silicon steel (CRGO) and 36,000 tonnes per year of cold rolled non-grain oriented silicon steel (CRNO) at an estimated cost of Rs. 154.81 crores is under implementation at Rourkela.

The project is likely to be completed by August, 1983. The production of silicon steel will help in reducing the import of this category of steel to meet the requirement of our transformer industry. The expenditure incurred during the current year on this project upto December, 1962 was Rs. 14.59 crores against the plan outlay of Rs. 21.00 crores.

Slag Cement Plant

(vi) The Govt. has approved in principle a proposal for setting up a Slag Cement plant in Rourkela. This plant is expected to have a capacity of 0.710 million tonnes of cement per annum. A provision of Rs. 70.00 crores has been made in the Sixth Plan. Pre-construction activities like acquisition of land and raw material linkages have been completed Site levelling is going on.

3.1.16 *Salem Steel Plant*

Salem Steel Plant possessing the most sophisticated equipment for making cold rolled stainless steel sheets and coil commenced

production on 13th September, 1981. This plant has a capacity to produce 32,000 tonnes of cold rolled stainless/heat resisting steel sheets/coils. Approved outlay for this project is Rs. 181.19 crores.

3.1.17 *Alloy Steels Plant*

First Stage Expansion/Modernisation Programme of the Alloy Steels Plant increasing its capacity from 1,00,000 tonnes to 1,60,000 tonnes of ingot steel and 60,000 tonnes to 1,00,000 tonnes of saleable steel has been completed by addition of one Electric Arc Furnace and other facilities.

Second Stage modernisation programme of the Alloy Steels Plant has been sanctioned in July, 1981 at a cost of Rs. 65.98 crores. The programme envisages facilities of Continuous Casting, Vaccum Oxygen Decarbonisation and Vaccum Are Degassing, Slab Grinders and other ancillary equipment increasing the capacity to 2.6 lakh tonnes of liquid steel or 1.91 lakh tonnes of saleable steel. The expansion programme is expected to be completed in 42 months.

ANNEXURE 3.4

PRODUCTION PERFORMANCE OF STEEL PLANTS DURING THE YEARS 1977-78, 1978-79, 1979-80, 1980-81, 1981-82 and 1982-83

('000 Tonnes)

Plant / Products	1977-78	1978-79	1979-80	1980-81	1981-82	1982-83 (upto Jan. 1983)	Anticipated 1982-83
1	2	3	4	5	6	7	8
INGOT STEEL							
Bhilai	2371	2200	2108	2041	2115	1755·5	2202
Durgapur	1092	945	882	741	930	782·6	1056
Rourkela	1409	1319	1268	1165	1203	938·0	1285
Bokaro	933	1195	1426	923	1792	1494·2	1956
IISCO	651	628	565	609	600	498·1	656
SUB-TOTAL SAIL	6456	*6287	6249	5479	6640	5468·4	7155
TISCO	1968	1865	1779	1874	1956	1612·0	1940
TOTAL	8424	8152	8028	7353	8596	7080·4	9095
SALEABLE STEEL							
Bhilai	1930	1846	1706	1818	1819	1501·9	1865
Durgapur	865	778	605	598	782	670·8	868
Rourkela	1178	1042	1045	985	1091	773·1	1001
Bokaro	815	931	849	844	1472	1252·6	1534
IISCO	506	481	430	523	488	398·0	532
SUB-TOTAL SAIL	5293*	5077*	4593**	4746**	5651*	4596·4	5800
TISCO	1601	1516	1447	1537	1605	1323·4	1550
TOTAL	6894	6593	6040	6283	7256	5919·8	7350

1	2	3	4	5	6	7	8
SALEABLE PIG IRON							
Bhilai	699·0	606·2	519·3	430·3	504	377·6	450
Durgapur	101·9	146·5	120·9	102·2	88	83·4	111
Rourkela	6·7	3·6	0·2	12·4	64	25·9	43
Bokaro	511·5	607·6	280·0	729·8	452	336·3	450
IISCO	136·1	117·8	51·5	64·2	59	96·3	126
TOTAL	1455·2	1481·7	971·9	1338·9	1167	919·5	1180
ASP							
Ingot Steel	97·24	97·33	76·65	70·36	86·1	67·29	86·00
Saleable Steel	48·82	48·84	45·68	41·73	52·04	38·86	52·00
SSP							
Saleable Steel	—	—	—	—	3·21	5·73	6·50

*rounded off
**excludes inter-plant transfer.

ANNEXURE 3B

CAPACITY UTILISATION PERCENTAGE OF STEEL PLANTS DURING THE YEARS 1977-78, 1978-79, 1979-80, 1980-81, 1981-82 and 1982-83

Plant Products	1977-78	1978-79	1979-80	1980-81	1981-82	1982-83 (upto Jan. 1983)
INGOT STEEL						
Bhilai	94·8	88·0	84·3	81·6	84·6	84
Durgapur	68·3	59·1	55·1	46·3	58·1	59
Rourkela	78·3	73·3	70·4	64·7	66·8	63
Bokaro	—	70·3	57·0	36·9	71·7	72
IISCO	65·1	62·8	56·5	60·9	60·0	60
SUB-TOTAL SAIL	80·0**	73·1	66·5	58·3	70·6	70
TISCO	98·4	93·3	89·0	93·7	97·8	96·5
TOTAL	84·2**	76·9	70·4	64·5	75·4	75

SALEABLE STEEL								
Bhilai	98·2	93·9	86·8	92·5	92·6	92		
Durgapur	69·8	62·8	48·8	48·3	63·1	65		
Rourkela	96·2	85·1	85·3	80·4	89·1	76		
Bokaro	—	68·7	43·1	42·8	74·7	76		
IISCO	63·3	60·1	53·8	65·4	61·0	59		
SUB-TOTAL SAIL	85·7**	77·1	63·8	65·9	78·5	77		
TISCO	106·7	101·1	96·5	102·5	107·0	106		
TOTAL	90·3**	81·6	69·4	72·2	83·4	82		
ASP								
Ingot Steel	97·0	97·0	76·7	70·4	86·0	50		
Saleable Steel	81·4	81·4	76·1	69·6	86·7	45		

**Excluding BSL under erection/gestation.

3.2 Visvesvaraya Iron and Steel Limited, Bhadravati

3.2.1 The Mysore Iron and Steel Works, Bhadravati, was started in 1923 as a departmental undertaking of the then Government of Mysore with a small blast furnace to produce about 24,500 tonnes of pig iron annually. It was converted into a company on the 30th of June, 1961 with the name of Mysore Iron and Steel Limited. In February 1976, its name was changed to Visvesvaraya Iron and Steel Limited (VISL). It is now jointly owned by the Government of Karnataka and the Government of India (through SAIL). It is one of the main producers of alloy and special steel in the country. Other products of the Company are mild steel, ferro-silicon, cement, castings, spun pipe and ferro-alloys.

3.2.2 The present authorised capital of the Company is Rs. 75 crores made up of 75 lakhs Equity Shares of Rs. 100 each. The subscribed and paid up capital of the Company is Rs. 43.25 crores. Of this 60% is held by the Government of Karnataka and 40% by the Govt. of India through the Steel Authority of India limited.

3.2.3 The installed capacity of Visvesvaraya Iron & Steel Limited, production during 1981-82, production during the first nine months of 1982-83 and anticipated production during the last quarter of 1982-83 are as follows :

(In tonnes.)

	Installed	Production during		
		1981-82	April Dec. 1982	Jan. March, 1982
1. Mild Steel.	48,000	9,890	12,984	8,290
2. Special & Alloy Steel	77,000	61,837	34,066	10,378
3. Steel Ingots	1,80,000	—	75,544	26,800
4. Ferro Silicon	20,000	5,639	3,069	550
5. Cement	96,000	58,519	58,720	20,680
6. Pig Iron.	1,80,000	86,584	49,156	18,850
7. Ferro Alloys	3,800	—	4,292	7,909
8. Steel Castings.	2,500	—	394	185
9. Gray Iron Castings	15,600	—	5,681	1,500
10. Cast Iron Spun Pipes	17,000	10,463	7,271	2,830
11. Cast Iron Plate Sleepers	15,000	—	—	—
12. Refractories	9,600	—	5,520	985

3.2.4 Production of this unit cintinues to be affected by power cuts imposed. There was a power cut of 45% upto 23-6-1982 and 1/3 power cut has been imposed from the 1st October, 1982. Thus there has been average power cuts of 26%.

3.2.5 *Working Results*

For the year ended 31-3-1982 the Company had made a loss of Rs. 93.74 lakhs as against a net profit of Rs. 520.20 lakhs during the previous year. The accumulated profit as on 1-4-1982 was Rs. 41.42 lakhs.

3.2.6 This unit is also affected by the marketing problems faced by the alloy steels producers in the country due to temporary decline in the demand as well as availability of imported alloy steels materials at relatively cheaper price. The change in import policy affected by Government are expected to provide relief to the unit.

3.2.7 *Capital Schemes under implementation*

(i) *Ferro Vanadium Project*

A Ferro Vanadium Project for the production of 100 tonnes Ferro Vanadium Ore is being implemented by the Plant based on the process developed in collaboration with the National Metallurgical Laboratory. Government of India have sanctioned a loan of Rs. 1.2 crores for this Project. The slag production shop has already been completed in May, 1982 and the slag crushing, slag mixing and grinding unit is expected to be completed by March, 1983. The slag production shop has already produced 50 tonnes of slag.

(ii) *Optimisation Scheme-State I of Phase I*

The scheme has been sanctioned in September, 1981 at an estimated cost of Rs. 13.92 crores. It envisages optimisation of steel production in the existing LD Converter Shop by the installation of one Continuous Casting Machine, an Oxygen Plant and other related facilities for Rolling Mills and the Treatment Shop. The Continuous Casting Machine is likely to be commissioned by March, 1983 and the Oxygen Plant in 1984. This will increase production of alloy and special steels by about 25,000 tonnes.

With the commissioning of the Stage I of Phase I modernisation programme, it will be possible to produce alloy and special steels in the LD Converter Shop with a reduced cost of production.

3.3 SPONGE IRON INDIA LTD.

3.3.1 India has been keenly interested in the developments in the field of sponge iron technology, particularly in the production using non-coking coal of which the country has abundant reserves distributed widely and throughout the country. This is expected to provide a welcome relief from the pressures faced in steel making due to scarcity of coking coal.

3.3.2 Government set up a Demonstration Plant with a capacity of 30,000 tonnes per annum of sponge iron at Kothagudem in Adhra Pradesh. The Plant has been commissioned in 1980. In 1981-82 it produced 27,203 tonnes of sponge iron which represented 91% of capacity utilisation. This Plant, which has been assisted by UNDP/UNIDO has successfully demonstrated manufacturing of sponge iron using non-coking coal and lump iron ore. The Plant has also been accepted as a regional research and testing centre in this field for South East Asian region. The Plant is now being expanded by doubling its capacity to 60,000 tonnes per annum at an estimated cost of Rs. 8.55 crores. The expansion project is expected to be completed in December 1984.

3.3.3 *Finance*

The revised project cost of the Demonstration Sponge Iron Plant is Rs. 16.45 crores. The share capital subscribed by the Government of India and the Government of Andhra Pradesh is Rs. 4.36 crores and Rs. 0.84 crores respectively. The UNDP has provided a grant of Rs. 3.70 crores.

3.3.4 *Production*

The plant produced 27,203 tonnes of sponge iron against a target of 27,000 tonnes representing a capacity utilisation of 91% in 1981-82. In 1982-83, it expects to produce 28,000 tonnes of sponge iron representing a capacity utilisation of more than 93%.

3.3.5 *Sales and Profitability*

Sales amounted to 25,297 tonnes recording a revenue of Rs. 3.72 crores in 1981-82 and the Company made a net profit of Rs. 0.05 crores, after providing for interest and depreciation. In year 1982-83 the sales are expected to be 27,000 tonnes.

3.3.6 *Efforts made towards indigenisation*

The plant has an Engineering and Project Division to systematically develop indigenous substitutes for spare parts, consumables and refractories and also to make modifications to the plant and equipment to adapt them to local conditions.

3.3.7 The Engineering and Project Division has, with the assistance of UNDP/UNIDO, developed designs for continuous feeding of sponge iron into Electric Arc Furnaces and equipment based on this design has since been successfully installed in the electric arc furnaces of Tamil Nadu Steels at Arakkonam and Andhra Pradesh Steel Limited at Paloncha.

3.3.8 The Company has also undertaken test work on various Iron Ores for determining their suitability for production of sponge iron. UNIDO has recently assigned to the Company the test work for production of sponge iron using Pakistan's coal and Indian Iron Ore and for establishing melting practice for sponge iron in the Electric Arc Furnaces of Pakistan.

3.3.9 *Participation of Workmen in Management*

The Company has been actively encouraging participation of workmen in the Management. A works Committee with equal representation of workmen and Management was set up in 1980-81 with sub-committees for Canteen Management, Welfare and Safety. A grievence Committee has also been set up recently to redress the grievances of workmen. A suggestion scheme has also been introduced during the year for rewarding employees putting forward useful suggestions. During 1983-84, it is proposed to introduce Shop Floor Councils and Production Committees.

3.3.10 The total number of employees of the Company as on 30-11-1982 and persons belonging to Scheduled Castes, Scheduled Tribes, Ex-Servicemen, Physically Handicapped and Women is as follows :

Group	Total	SC	ST	Ex-service-men	Physi-cally Handi-capped	Women
Group A . .	61	3	—	—	—	1
Group B . . .	17	1	—	—	—	—
Group C . .	177	12	7	2	1	13
Group D . . . (excluding sweeper)	140	30	15	1	4	2
Group D . . . (sweepers)	4	2	—	—	—	2
Total . .	399	48	22	3	5	18

3.3.11 *Research and Development*

The Company is engaged in Research and Development work aimed at adapting the coal based Direct Reduction technology to local conditions and developing economic proto-types of equipment for briquetting of sponge iron fines, so that they can be processed in the electric arc furnaces. Utilising the UNIDO assistance the sludge arising from scrubbing the waste gases of the plant can be successfully converted to Ceramic Tiles. UNIDO has agreed to assist in the preparation of a techno-economic feasibility study for a commercial Tile making unit utilising this waste material.

3.4 METAL SCRAP TRADE CORPORATION LIMITED

3.4.1. The Metal Scrap Trade Corporation Limited, a Government of India Undertaking, is the canalising agency for export and import of ferrous melting scrap; import of re-rollable scrap, old ships and sponge iron. The Company has an authorised capital of Rs. 2 crores and paid up capital of Rs. 56 lakhs, of which 84% is held by Government of India and 16% by Steel Furnace Association of India and Iron & Steel Scrap Association of India.

3.4.2 During the year 1981-82, MSTC imported 2,82,930 metric tonnes of carbon steel melting scrap valued at Rs. 42.44 crores and 316,395 MT of melting scrap valued at Rs. 48.14 crores were imported by electric arc furnace units directly under NOC procedure. In addition, 8467 MT of stainless steel scrap valued at Rs. 8.16 crores was imported. MSTC purchased 46 old ships for breaking aggregating to 1,96,654 LDT valued at Rs. 25.91 crores.

3.4.3. The comparative figures for the year 1982-83 (upto December, 1982) are as under:—

Sl No.	Item	Qty (t)	Value (Rs. in lakhs)
1.	Carbon steel scrap	3,05,645	3,780
2.	Stainless steel melting scrap	5,485	524
3.	Ships for breaking (31 Nos.)	1,30,964 (LDT)	1,380

Further, under the NOC procedure, MSTC have allowed import of carbon steel scrap aggregating to 1,68,638 tonnes valued at Rs. 21.55 crores upto December, 1982. Metal Scrap Trade Corporation is also the canalising agency for export of ferrous scrap. During 1982-83 (upto December 1982) 75,729 tonnes of surplus items valued at Rs. 140 lakhs were exported.

3.4.4 Government took a number of steps in 1982 to promote ship breaking activity in the country. Consequently the coastal States have now nominated nodal agencies in their States to coordinate and undertake infrastructural development work for setting up ship breaking yards in these States. Metal Scrap Trade Corporation Limited has been asked to render necessary guidance and technical support to these States. Some incentives have also been offered for setting up new yards like giving soft loan from the Ferrous Scrap Development Fund to the agency undertaking infrastructure development offering ships at new ship breaking sites on allotment basis instead of tender basis, concessional rate of contribution to Scrap Development Fund viz. Rs. 50 per LDT in place of Rs. 100 per LDT, at new locations.

During 1981-82, the Corporation recorded an all round [illegible] and showed a profit of Rs. 246.99 lakhs

(before tax) as against Rs. 121.54 lakhs during 1980-81. In the year, 1982-83 (upto December, 1982) the Company has made a profit of Rs. 146.12 lakhs (before tax).

3.4.5. *Ferro Scrap Nigam Limited*

The Ferro Scrap Nigam Limited is a joint sector Company, in which MSTC has 60% equity participation, the remaining 40% being held by Messers Harso Corporation Inc., U.S.A. The Company undertakes recovery and re-cycling of scrap from the slag/refuse dump in the steel plants at Jamshedpur, Rourkela and Burnpur. It has now get the licence to take up the recovery work at Bhilai Steel Plant also. During 1981-82, the recovery of scrap was 375,578 tonnes and during 1982-83 (upto December, 1982), the recovery was 278,189 tonnes. The Company made a profit of Rs. 1.35 crores (before tax) during the year, 1981-82. The profit for 1982-83 (upto December-1982) is Rs. 115 lakhs (before tax).

3.5 NATIONAL MINERALS DEVELOPMENT CORPORATION LIMITED

3.5.1 National Mineral Development Corporation Limited (NMDC) was incorporated on November 15, 1958 for developing and exploiting the mineral resources of the country (other than coal, oil, natural gas and atomic minerals). Presently, on the production side, the activities NMDC are confined to iron ore and diamond. On the exploration, Planning and Development sides its investigation and consultancy wings are dealing with various minerals—iron ore, diamond, limestone, dolomite, rock phosphate, gypsum, bentonite, slate, beach sands containing rare earths etc.

3.5.2 NMDC presently has the following units :

	State in which located
(a) Production Projects	
Iron Ore	
Bailadila—14	Madhya Pradesh
Bailadila-5	Karnataka
Donimalai	
Diamond	
Panna Diamond Mining Project (Majhgawan Mine)	Madhya Pradesh
	State In which located
(b) Projects under construction	
Iron Ore	
Bailadila-14 Expansion and Modification Scheme (Bailadila-11C)	Madhya Pradesh
Fine Ore Handling Scheme (Bailadila-5)	

3.4.2 During the year 1981-82, MSTC imported 2,82,930 metric tonnes of carbon steel melting scrap valued at Rs. 42.44 crores and 316,395 MT of melting scrap valued at Rs. 48.14 crores were imported by electric arc furnace units directly under NOC procedure. In addition, 8467 MT of stainless steel scrap valued at Rs. 8.16 crores was imported. MSTC purchased 46 old ships for breaking aggregating to 1,96,654 LDT valued at Rs. 25.91 crores.

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During 1981-82, the Corporation recorded an all round growth in its activities and showed a profit of Rs. 246.99 lakhs

(before tax) as against Rs. 121.54 lakhs during 1980-81. In the year, 1982-83 (upto December, 1982) the Company has made a profit of Rs. 146.12 lakhs (before tax).

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3.5.2 NMDC presently has the following units :

	State in which located
(a) Production Projects	
Iron Ore	
Bailadila—14	Madhya Pradesh
Bailadila-5	Karnataka.
Donimalai	
Diamond	
Panna Diamond Mining Project (Majhgawan Mine)	Madhya Pradesh
	State in which located
(b) Projects under construction	
Iron Ore	
Bailadila-14 Expansion and Modification Scheme (Bailadila-11C)	Madhya Pradesh
Fine Ore Handling Scheme (Bailadila-5)	

Dolomite	
Machkot Dolomite Project	Madhya Pradesh
Diamond	
Majhgawan Expansion Scheme	Madhya Pradesh
(c) Projects under Investigation/Planning	**State in which located**
Iron Ore	
Bailadila Deposits No. 11B, Fine Ore & Blue Dust Handling Scheme (Bailadila-14/11C Complex)	Madhya Pradesh
Bababudan, Kumaraswamy West Coast Deposits (in collaboration with Mysore Minerals Ltd.)	Karnataka
Malangtoli	Orissa
Ongole	Andhra Pradesh
Diamond	
Hinota Development Scheme	Madhya Pradesh
Exploration of diamond deposits of Andhra and Madhya Pradesh (in collaboration with GSI & MEC)	Andhra Pradesh and Madhya Pradesh

NMDC was functioning as the canalising agency for the import of sponge iron, consumed by the electric arc furnace units in the country upto September, 1982. Thereafter Metal Scrap Trade Corporation has been made the canalising agency for this item.

3.5.3 *Finance*

The authorised capital of the company is Rs. 150 crores. The equity capital paid by Government upto 30-11-1982 was Rs. 81 crores. Govt. loans outstanding as on 30-11-1982 were Rs. 43.20 crores.

3.5.4 *Production*

The production in the units of NMDC during 1981-82 and 1982-83 is given below :—

(In lakh tonnes)

Name of the Project	1981-82 (Actuals)		1982-83 Target		April Nov. (Act.)		Dec. 82 Mar 83 (Anticipated	
	Lumps	Fines	Lumps	Fines	Lumps	Fines	Lumps	Fines
Bailadila-14	26·02*	8·75	25·00	10·26	15·91	6·38	8·80	3·75
Bailadila-5	31·10	13·35	32·00	15·00	16·51	7·48	11·90	5·58
Donimalai	5·57	4·92	8·00	7·00	3·12	2·84	2·21	2·94

*Including 0·36 lakh tonnes of float ore.

Panna Diamond Mining Project (in carats)	14543	15000	9100	5900

3.5.5 During 1981-82, the Corporation earned foreign exchange of Rs. 136.93 crores from the export of iron ore, the estimated cumulative foreign exchange earnings upto 31-3-1982 on this account being Rs. 791.64 crores. During 1982-83 (upto November 1982) the estimated foreign exchange earnings by NMDC from the export of iron ore amounted to Rs. 97.55 crores.

3.5.6 The total targetted production of lump plus fines from Bailadila-14 during April to November 1982 has been practically achieved with production of 22.29 lakh tonnes as against the Corporate plan target of 22.71 lakh tonnes. The marginal shortfall during the period was mainly due to the failures/interruptions in power supply from Madhya Pradesh Electricity Board and adverse weather conditions in August, 1982.

3.5.7 Production at Bailadila-5 in the first half of 1982-83 suffered due to the saturation of mine stockpile for a few days

in April, 1982 resulting from suspension of movement due to derailment on Bailadila-Vizag line and adverse weather conditions in the mine during August and September, 1982.

3.5.8 No long term contract has been secured for the Donimalai ore so far. The quantity contracted for 1982-83 is only 6 lakh tonnes of lump fines to be shipped to Japan. Despatches from the mine during the period April to November 1982 were 4.97 lakh tonnes against the Corporate plan target of 10.80 lakh tonnes. The total production during the period was 5.96 lakh tonnes against the Corporate plan target of 10.05 lakh tonnes. This is mainly due to poor off-take and consequent saturation of stock-pile at the mine.

3.5.9 The actual production of diamonds in Majhgawan mine during the period April-November 1982 was 7385 carats against the target of 9100 carats. The shortfall in production was due to power supply interruptions. The total quantity of diamonds auctioned/disposed of during the year till November 1982 is 5,431.86 carats for Rs. 66.52 lakhs.

3.5.10 *Working Results*

During 1981-82, the Corporation earned a net profit of Rs. 3.80 crores as against a loss of Rs. 3.05 crores during the previous year. The improvement in the operating results in 1981-82 is mainly due to the following:—

(i) Higher production of lump ore in Bailadila-5 by 2.27 lakh tonnes, an increase of about 8% over the production in the previous year.

(ii) Higher despatches of lump ore in Bailadila Sector by 4.38 lakh tonnes, an increase of about 8% over the despatches in the previous year.

3.5.11 *New Schemes*

A new mine is being developed in deposit Bailadila-11C, to supply iron ore to VSP and also to maintain export operations at the current level, at a cost of Rs. 19.70 crores. (The RCE of Rs. 19.70 crores is under consideration for Govt. approval) as the existing Bailadila-14 mine is expected to last only till 1991. Some mining equipment and infrastructure available in Bailadila-14 will be utilised in this project, which is scheduled to be completed by May, 1984.

Fines generated in the production of lump ore in the Bailadila sector used to be dumped for want of demand. From 1980-81,

Japanese Steel Mills indicated their willingness to accept some quantity of fines and VSP also will need about 1.90 m. tonnes of lump ore and 3.39 million tonnes of fines per year. In order to meet these demands, a proposal made by NMDC for reclaiming fines in Bailadila-5 (Fire Ore Handling Scheme) at a cost of Rs. 25.94 crores has been approved by Govt.

The development of a mine at Machkot, near Jagdalpur in M.P. for supply of about 7 lakh tonnes of dolomite per year to VSP at an estimated cost of Rs. 20.36 crores excluding the Rail-way siding was entrusted to NMDC in May 1982. NMDC have applied to the State Government for a mining lease.

3.5.12 *Investigation/Planning*

The position of the more important feasibility studies/investigations taken by NMDC is indicated below:—

(a) *Bababudan Magnetite Deposit*

The second phase investigation report was completed and was scrutinised by an Experts Committee. The Committee were of the opinion that sufficient data have been collected to evaluate the potentiality of Attigundi Deposits for an investment decision.

Department of Environment had sponsored a project on measures to be taken to minimise/prevent adverse impact of large scale mining operations on the ecology of the area. The first phase studies on forestry and geomorphology have been completed and TEFR is under finalisation.

(b) *West Coast Iron Ore Investigation*
(in collaboration with Mysore Minerals Ltd)

The field works and laboratory tests on Karekurchi deposit have been completed and the report is under finalisation.

(c) *Malangtoli and Kumaraswamy Iron Ore Investigation*

Field works and geological reports and ore dressing tests have been completed. TEFR's will be completed to suit the time schedules for construction.

(d) *Diamond Exploration Scheme*

Under the National Diamond Exploration Scheme taken up jointly by GSI, MEC and NMDC, National Mineral Development Corporation has set up three diamond processing plants at Racherla in Andhra Pradesh and two at Panna in M.P.

3.5.13 *Industrial Relations & Workers' Participation*

Industrial Relations during April-December, 1982 were peaceful and cordial. The scheme for workers' participation evolved in the Company continued to function effectively.

3.5.14 *Mandovi pellets Limited*

National Mineral Development Corporation is also participating (on behalf of Government) in Mandovi Pellets Limited, a joint sector project set up in Goa with a capacity to produce 1.8 million tonnes of blast furnace grade iron ore pellets. NMDC and M/s Chowgule and Company Private Limited have each contributed to the extent of 1/3rd of the equity capital of this Company. The remaining 1/3rd had been contributed by the General Public/Financial Institutions.

The Plant, approved in 1975, was completed and started production in 1979. The plant has, however, not been able to receive adequate supply of power. Further, due to the recession in the steel industry, the demand and prices of blast furnace grade pellets have gone down substantially. As the Mandovi Pellets Limited could not, therefore, get remunerative prices for their pellets, the company decided to close down the plant in April, 1981 for one year. It has also decided to continue this closure for a further period of two years. The company has entered into an agreement with the Japanese Steel Mills to accept iron ore lumps and fines in lieu of pellets during this closure.

3.5.15 *Personnel*

The total number of personnel of NMDC as on 30-11-1982 is given below :

Group	Total No. of Regular Employees as on 30-11-82	No. of Scheduled Caste Employees (Out of Col. 2)	No. of Scheduled Tribes Employees (Out of (Col. 2)	No. of Women Employees (Out of Col. 2)
A	507	19	3	10
B	606	31	4	15
C	3406	406	365	126
D (Excl. Sweepers)	1769	305	582	112
D (Sweepers)	115	93	1	27
Total	6403	854	955	290

3.6 Manganese Ore India Limited

3.6.1 Manganese Ore (India) Limited (MOIL) is a fully owned Government Company. The shares are held by the Government of India and the Governments of Maharashtra and Madhya Pradesh in the ratio of 51%, 24.5% and 24.5% respectively. OIL is the largest producer of manganese ore in the country. Manganese is a strategic mineral having wide ranging applications in metallurgical and chemical industries. The ferro alloy sector is the largest consumer of manganese ore in the country and uses it for production of ferro manganese. Considering the strategic nature of the mineral and the limited proven reserves in the country, Government's policy has been against permitting of export of high quality ore and for restricting exports of low grade ore too to a minimum level consistent with the need for earning foreign exchange and manufacturing employment in this industry. Till 1978-79, MOIL's operations were confined to Madhya Pradesh and Maharashtra. Since then the Company has extended its operations to Orissa, Andhra Pradesh and Karnataka.

3.6.2 *Finance*

The authorised capital of the Company is Rs. 6 crores and the paid up capital as on 31st December, 1982 was Rs. 2.15 crores.

3.6.3 *Production*

In 1981-82, MOIL produced 4,47,625 tonnes of manganese ore of various grades as compared to 4,43,329 tonnes during 1980-81, and the target of 4,35,000 tonnes. From April to December, 1982 the Company produced 3,37,589 tonnes of manganese ore against the target of 3,42,408 tonnes. The target for 1982-83 is 4,75,200 tonnes. It has exported 70,442 tonnes of ore during this period and 33,000 tonnes of ore are likely to be exported during the remaining period of the year. The total sales during the period were 3,62,506 tonnes valued at Rs. 1266.90 lakhs, against the target of 3,80,772 tonnes. The sales during the remaining period is anticipated to be 1,45,200 tonnes valued at Rs. 461.55 lakhs.

3.6.4 *Working Results*

MOIL has been consistently making profits and declaring dividents. In 1981-82, the Company made a gross profit of

Rs. 59 lakhs. It is expected to make a gross profit of Rs. 24 lakhs in 1982-83.

3.6.5 *Capital Schemes*

The domestic and external demand is only for manganese ore in the form of lumps. The ore fines which are generated in the process of production are presently being dumped. MOIL have prepared a scheme for setting up of (i) Beneficiation and Agglomeration Plant; and (ii) Ferro Manganese Plant. The Company has also a proposal to set up a plant for production of Electrolystic Manganese Metal/Electrolytic Manganese Dioxide and is examining details of the latest technology available on this.

The Company has also planned to redesign the Ukwa Mines and optimised production from all its mines on the basis of a report of M/s Seltrust Engineering Ltd.—a U.K. based consultants.

3.6.6 *Safety Measures*

The Company is aware of its responsibility in ensuring safety of workers especially as most of the mining is done in under ground mines. Apart from observing the rules and regulations procedures framed by Government, a Pitt Safety Committee is functioning at every mine. The Committee holds monthly meetings to analyse all cases of accidents etc. and decide remedial measures. The Company has an Internal Safety Organisation headed by a Chief Mining Engineer who also works as Chief Safety Officer.

3.6.7 *Efforts made towards cost reduction*

The Company has taken the following steps for cost reduction:—

(i) Phased mechanisation wherever possible is being introduced to reduce operation time as well as man power. Replacement of labour against retirement, resignation etc. has not been made as a measure of cost of reduction, during the year.

(ii) The U. K. based Consultants M/s Seltrust have suggested suitable methods of optimising the production and productivity to minimise the operating costs on various operations. The Company is taking action on these recommendations.

(iii) Waste materials taken out from the mine without manganese content is again used as filling material to avoid the extra expenditure of filling material.

(iv) Effective maintenance staff take care of preventive maintenance to reduce the down time of the machines.

3.6.8 *Workehs Participation in Management and Contract Labour Position*

Joint Management Council functions at all the mines and Apex Body at the Corporate Office. Both these forums have equal number of employers and employees representatives and decisions taken at the meeting are implemented by the management. Contract labour has been abolished at all the mines except two mines at Miragpur and Adilabad where the deposits are limited and scattered. About 300 workers are employed at these 2 mines.

3.6.9 *Personnel*

The details of employees in the Company as on 30-11-1982 are indicated below :—

GROUP	SC	ST	OTHERS	TOTAL
A	1	5	127	133
B	2	3	80	85
C	238	241	1056	1535
D	1918	4104	4837	10859
Total	2159	4353	6100	12612
SWEEPERS	126	—	—	126

3.7 BHARAT REFRACTORIES LIMITED AND ITS SUBSIDIARY—INDIAN FIRE-BRICKS AND INSULATION COMPANY

3.7.1 Bharat Refractories Limited became a Government Company w.e.f. 1-5-78. It presently consists of the following units :—

(i) The Bhandaridah Refractories Plant at Bhandaridah near Bokaro Steel City;

(ii) The Ranchi Road Refractories Plant at Marar, near Ranchi;

(iii) The Bhilai Refractories Plant at Bhilai; and

(iv) Silimanite Mines at Sonapahar in Meghalaya.

It also has a subsidiary company, namely, India Firebricks and Insulation Company Limited with works at Ramgarh near Ranchi.

3.7.2 *Finance*

The authorised capital of Bharat Refractories Limited is Rs. 30 crores with paid up capital at Rs. 22.85 crores on 31-12-82. The cumulative capital expenditure upto December, 1982 was Rs. 57.95 crores.

3.7.3 *Production Performance*

The production performance of the various units of the Company as well as its subsidiary Company IFICO during 1981-82 and during 1982-83 (till December, 1982) is given below :

Name of the Unit	Prodn. 1981-82 (M.T.)		1982-83					
			Target for 1982-83		Prodn. Apl. Dec. 82		Anticipated prdn. Jan-Mar. '83	
	Bricks	Mortar	Bricks	Mortar	Bricks	Mortar	Brks	Mortar
Bhandaridah	10496	3169	12000	4170	8007	2856	3990	1200
Ranchi Road Ref. Plant	4196	219	4634	—	3027	110	1260	—
Bhilai Ref. Plant	8689	—	26736	—	11450	102	12436	—
IFICO	31841	—	28281	2610	18062	1768	8981	950

Bharat Refractories Limited is expected to incur a loss of Rs. 442.01 lakhs in 1982-83 as compared to a loss of Rs. 344.44 lakhs in 1981-82 (after providing for depreciation and interest). India Firebricks & Insulation Company Limited is expected to incur a loss of Rs. 18.63 lakhs in 1982-83 as against a profit of Rs. 6.25 lakhs in 1981-82.

3.7.4 The main reasons for continuing losses at Bhandaridah Refractories Plant is the low volume of production due to frequent breakdown of plant and equipment. Due to the difference in temperature at the top and bottom of the tunnel kiln, the unit

was forced to make low value standard bricks. The problem is being taken care of by undertaking major overhauling of equipments. The temperature difference in the tunnel kiln has been partially corrected, based on the suggestion of Polish experts. The production of the plant has since picked up. The position is expected to improve further after the expansion of the plant from 15,000 tonnes to 26,000 tonnes per annum capacity which is to be completed by March, 1983. In Ranchi Road Refractories Plant the main reasons for the higher losses, besides lower production, are high cost of firing as firing is done by using fuel oil, and high interest burden. A proposal for modernisation of the Plant to substitute oil firing with gas firing is under implementation of the Company. In IFICO a rehabilitation scheme has been completed and the production capacity has increased from 36,000 mt. per annum to 42,000 mt. per annum.

In Bhilai Refractories Plant, commercial production of basic bricks commenced from November, 1981. The silica shop was commissioned in October, 1982 and the fireclay shop in December, 1982.

3.7.5 *New Schemes*

Pithoragarh Magnesite Project : One of the principal raw materials for production of basic referactories is dead burnt magnesite (DBM). With a view to having a captive source of dead burnt magnesite for the Bhilai Refractory Plant and to substitute for imports, Government sanctioned the setting up of a Rotary Kiln Complex for dead burning of magnesite at Dewalthal, Distt. Pithoragarh (U.P.) at a total Cost of Rs. 14 crores in October 1982. The plant will have a production capacity of 25,000 tonnes of DBM per year. Preliminary works such as land acquisition, water and electricity supply etc. have been taken up. The Plant is scheduled to be completed in 4 years.

3.7.6 *Industrial Relations*

The industrial relations situation in all the units including the subsidiary has been generally peaceful.

3.7.7 *Personnel*

The manpower position as on 30-11-82 in different units and subsidiary of the company was as follows :

	SC	ST	Women	Physically Handicapped	Total
Bhandaridah Ref. Plant	106	61	82	1	8 18
Ranchi Road, Ref. Plant (including 242 in NS Mines)	34	149	25	4	596
Bhilai Ref. Plant	154	228	6	8	1257
Registered Office	4	4	—	1	93
India Firebricks and Insulation Co. Ltd.	60	151	—	12	12
	358	593	113	26	3866

3.8 KUDREMUKH IRON ORE PROJECT

3.8.1 The Kudremukh Iron Ore Co. Ltd. (KIOCL) was set up to produce iron ore concentrates to meet the long term requirements of Iron. The Sale & Purchase Contract with Iran envisaged supply of 150 million tonnes of concentrates over a period of 21 years. Iran also entered into a Financial Agreement with India for grant of a credit not exceeding US $ 630 million for construction of the Project and the related infrastructure. Against the credit of $ 630 million, Iran has paid a sum of $255 million. The project has, however, been implemented with the funds provided by the Government of India. But for the inability of Iran to lift the material, the supply of concentrate under the Sale & Purchase Contract would have commenced from the end of August, 1980. The present indications are that Iran will not be in a position to take more than 4 to 5 million tonnes of concentrate out of the contracted quantity of 7.5 million tonnes per year. Negotiations are being held with Iran to solve the various issues connected with the agreements with Iran.

Progress of Work

3.8.2 All the works on the Kudremukh Project proper except the commissioning of the Mill Line Nos. 1 & 2 in the concentrator plant had been completed and the plant went into commercial production from 1st October, 1981. Line Nos. 1 & 2 which have

been mechanically completed, are undergoing adjustments and trials for commencement of commercial production.

3.8.3 *Capacity Utilisation*

Kudremukh Project has been designed for an annual production of 7.5 m.t. of concentrate for supply to Iran. With the uncertainty created by Iran, KIOCL are making vigorous efforts to locate alternated buyers. Keeping in view the contract entered into with M/s. Mineral-import-export of Romania for the supply of 3.5 m.t. of concentrate and the likelihood of the sale of concentrate to other buyers the targets and actual production of the concentrate by the Kudremukh Project has been as follows :

Year	Million tonnes (Target)	Actual Production upto January, 1983
1982-83	1·03	937676 DMT
1983-84	1·50	

3.8.4 *Authorised Capital/Project Cost*

The authorised capital of the Kudremukh Iron Ore Co. Ltd. as on 31-3-81 was Rs. 200 crores. This was fully subscribed and paid up by 31-3-81. The debt equity ratio of the Company was revised from 2 : 1 to 1 : 1. Consequently the authorised capital has been increased from Rs. 200 crores to Rs. 300 crores. The subscribed and paid up capital of the company stood at Rs. 269.47 crores on 30-11-1982. A sum of Rs. 48.11 crores of loans sanctioned to the company in 1980 and 1981 was converted into equity in the year 1982. Accordingly Government loans on capital account stood at Rs. 236.96 crores as on 30-11-1982.

The sanctioned capital cost of the project is Rs. 647.33 crores, including Rs. 546.80 crores for the Kudremukh Project proper. The total capital expenditure incurred on the project proper as on 30-11-1982 was Rs. 488.16 crores.

3.8.5 *Personnel*

The total number of employees as on 30-11-1982 and the number belonging to the scheduled castes, scheduled tribes and women are given below :—

Group	Total No. of employees	Scheduled Castes	Scheduled Tribes	Women
A	365	16	2	9
B	88	4	—	4
C	1162	113	11	78
D (excluding sweepers)	222	49	2	11
D (sweepers only)	35	24	3	6

Presently, the Company has 5 and 65 ex-service men in the cadres of executive and non-executives, respectively. The need of the project is mainly in the category of Operator-cum-Mechanic, Mechanics, Auto-electricians with a high degree of skill and education.

3.8.6 *Worker Participation in Management*

The Company has set up 7 shop level council and a Joint council at the Apex level. The representatives of workmen are nominated by the recognised Union of the Company. The shop level council and the joint council have been meeting periodically to take measures for improving the production and productivity.

3.8.7 *Contract Labour*

No contract labour has been engaged for plant/mining operations. However, for the purpose of maintenance of office building, a job contract has been awarded as the work does not need engagement of labour on a continuous basis.

3.8.8 *Safety Measures*

Every department of the company has a Safety Committee which meets once in a month to analyse the accident and safety aspects of the working. Safety compaign is organised for a week every year wherein the safety awareness, is brought to the notice of the employees. Refresher courses are also conducted for the

benefit of the employees and periodical in-plant training is also being given to the employees.

3.8.9 *Pelletisation Plant*

According to the present indications Iran may eventually take 4.5 to 5 million tonnes of concentrate out of the annual contracted quantity of 7.5 million tonnes. The commencement of the off-take by Iran is, however, uncertain. To find a long-term solution to the problem, Government have sanctioned the setting up of the pelletisation plant at Mangalore of 3 M.T. capacity per year to convert Kudremukh Concentrate into pellets. The Kudremukh Iron Ore Co. had signed on 12-9-1981 a contract with M/s. Uzinexport-import, Romania for the setting up of the plant which is expected to go into production by August, 1984. The work of the setting up of the plant is progressing according to the schedule.

3.9 METALLURGICAL & ENGINEERING CONSULTANTS (INDIA) LIMITED

3.9.1 Metallurgical & Engineering Consultants (India) Limited (MECON) was set up in 1959 as Central Engineering & Design Bureau under Hindusthan Steel Limited. It became a subsidiary of Steel Authority of India Limited in 1973 and subsequently emerged as an independent Company in May, 1978. It is a premier consultancy and design organisation in the public sector for metallurigcal industry. Its business includes the following :

(a) rendering technical consultancy, design & engineering and other technical project management services for setting up plant and machinery in—

(i) ferrous and non-ferrous metallurgical industries;

(ii) chemical industries;

(iii) Power plants;

(iv) Refractory; and

(v) Mining.

(b) Design and setting up of Coke Oven Batteries (including 7 Metre high Coke Ovens) and dry Coke Cooling Plants.

(c) Design and supply, including erection and commissioning of Rolling mills and Auxiliary Equipments for ferrous and non-ferrous metal rolling plants; and

(d) Design and Engineering of processing lines for ferrous and non-ferrous metals.

3.9.2 The important assignment which this Company is handling and the progress of work on them are as follows :

In India

(i) Services for design, engineering and supply of equipment for cold rolling mill complex under 4.0 MT expansion scheme for Bokaro Steel Plant are in progress.

(ii) Detailed engineering work for 4.0 MT expansion of Bhilai Steel Plant is in progress.

(iii) MECON has been setting up Coke Oven Batteries of its own design and engineering in various Public Sector Steel Plants. MECON has entered into a licence agreement with V/O Tiaxjpromexport for 7M tall Coke Oven Batteries and Dry Coke Cooling Plants. Orders have been secured for the same for Visakhapatnam Steel Project and Bhilai Steel Plant.

(iv) Substantial progress has been made in the supply of mechanical and electrical equipment for Cold Rolling mill complex of Bokaro Steel Plant.

(v) Supply, erection and commissioning of equipments for Silicon Steel Project of Rourkela Steel Plant is near Completion and is expected to be completed within March, 1983.

(vi) The work relating to Detailed Engineering for Ore fines handling plant of National Mineral Development Corporation in Bailadila is in progress.

(vii) MECON have received an order for Design and Supply of Light and Medium Merchant Mill from Rashtriya Ispat Niagam Limited, Visakhapatnam Steel Project.

(viii) MECON has received an assignment for preparation of Detailed Project Report for modernisation of

Durgapur Steel Project and for rendering detailed engineering services for re-habilitation scheme. Both the works are in progress.

(ix) MECON has received an assignment for preparation of a Detailed Project Report for setting up the Vijayanagar Steel Plant in Karnataka based on direct reduction technology. The report is expected to be completed by March 1983.

(x) MECON has been entrusted with the task of preparation of a Detailed Project Report for an integrated steel plant in Orissa at Diatari following submission of a feasibility report by them. The Detailed Project Report is expected to be submitted by the end of the year 1983.

3.9.3 *Abroad*

(i) MECON's work in the international field is at present concentrated in Nigeria. The work relating to township project of the Delta Steel Company, training of the personnel and setting up of the design bureau of the steel plant at Warri are in progress. Substantial progress has been made in project monitoring and consultancy services for setting up of a 1.3 MT integrated steel plant in Ajaokuta. MECON in association with Nigerian associates is setting up a joint venture company in Nigeria. MECON's earnings of foreign exchange (on cash basis) from the assignments abroad during 1981-82 were Rs. 3.93 crores. The estimated earnings during 1982-83 are Rs. 5.67 crores.

3.9.4 *Finance*

The authorised capital of the company is Rs. 4 crores. Issued and paid up capital on the 31st March, 1982 was Rs. 2.02 crores. As against paid up capital of Rs. 2.02 crores it has reserves and surplus amounting to Rs. 17.82 crores as on 31st March, 1982.

3.9.5 *Working Results*

The turnover of the company in 1981-82 was Rs. 38.91 crores and the estimated turnover for 1982-83 is Rs. 77.38 crores. The company earned a pretax profit of Rs. 5.83 crores in 1981-82. The estimated profit for the year 1982-83 is Rs. 5.98 crores.

3.9.6. *Personnel*

The total number of emlpoyees of MECON as on 31-12-1982 including those belonging to Scheduled Castes and Scheduled Tribes etc. are given below :

Group of posts	Total No of employees	S.C.	S.T.	Women	Ex-service men	Handicapped
'A'	1758	36	17	18	—	2
'B'	580	4	16	15	12	—
'C'	717	91	143	99	54	2
'D' excluding sweepers	449	66	249	20	46	11
'D' sweepers	97	61	35	18	—	3
Total	3601	258	460	170	112	18

3.9.7 *Industrial Relations*

The industrial relations in the company during the year have been satisfactory. The company has a number of bi-partite forums which look after various matters relating to education, health, housing, social and cultural activities, canteen and other welfare measures for the employees.

3.9.8 *Installation of Computer*

A modern computer system (UNIVAC 1100/60) having powerful capabilities for carrying out design calculations and capabilities for graphics was installed in November, 1982. This computer is mostly busy in engineering design calculations. In addition, Project Planning and Monitoring, Management Information Service, Techno-Economic Evaluation and Technical information processing are also carried out.

3.10 HINDUSTAN STEEL-WORKS CONSTRUCTION LIMITED

3.10.1 Hindustan Steelworks Construction Limited (HSCL) was incorporated in June 1964, to mobilise indigenous capability for undertaking construction work of modern integrated steel

plants in the country. Apart from developing indigenous capability in construction of steel plants, HSCL has also handled work relating to construction of steel plants, bridges, soils, power plants, industrial plants, mining complexes, metro railway, township/ancilliary buildings etc.

3.10. 2 The Company has expertise in civil engineering; structural fabrication and erection; mechanical, electrical, instrumentation, and technological equipment erection works including testing and commissioning; outdoor pipelines; underground communication; railways; chemical protection work; refractory works; hot and capital repair works; re-building of Coke Oven Battery and repair of blast furnaces. The Company has a fledged Design Wing and also a specialised team to undertake soil investigation, geodetic survey, quality control and structural inspection.

3.10.3 *Finance*

The Authorised Capital of the Company is Rs. 20 crores and the paid up capital as on 31st December, 1982 was also Rs. 20 crores. Government loans outstanding on 31st December, 1982 amounted to Rs. 15.26 crores.

3.10.4 *Works in hand*

The Company has a number of construction projects, the more important of which are the following :—

In India:	
Bokaro Steel Plant	Expansion to 4·00 MT Stage including Captive Power Plant and Benzol Rectification Plant. on turnkey basis..
Bhilai Steel Plant	Expansion to 4 MT Stages.
Vizag Steel Plant	Site levelling and Civil Engineering works of Blast Furnace No. 1, Steel Melting Shops and Raw Material Handling System.
Durgapur Steel Plant	Captive Power Plant, Rebuilding of Coke Oven Battery No. 2.
Rourkela Steel Plant	Capital/Running repairs to Coke Oven Batteries, Civil Works of Ferro-Alloy Bunkers.
Salem Steel Plant	Cold Rolling Mill Complex, Township.
IISCO/Burnpur	Hot repair and Commissioning of Coke Oven Battery No. 9.

Karnataka Power Co-operation Ltd.	Concrete gravity dam at Supa.
National Thermal Power Corporation	Coal Handling Plant on turnkey basis for Super Thermal Power Plant at Korba.
Uttar Pradesh State Electricity Board	(i) Site levelling, 220M High RCC Chimney and Ancilliary Building works for Super Thermal Power Plant at Anpara.
	(ii) C. W. Pump House, Raw Water Storage Reservoir finishing works for Tanda Thermal Power Plant.
Fertilizer Corporation of India/Durgapur	Captive Power Plant Structural Work.
Metro Rail/Calcutta	Sub-way structures for different sections including station.
Gujarat State Electricity Board	Design and construction of RCC Chimney for Wanakbori Thermal Power Station.
Betwa River Board/Jhansi	Earthen Dam at Rajghat.
National Aluminium Co./Bhubaneswar	(i) Enabling work and other facilities for Smelter Plant.
	(ii) Site grading, construction of roads, drainages etc. for Captive Power Plant.
	(iii) Water Scheme for Aluminium Plant at Angul.
Cement Corporation of India/New Delhi	Foundations/Structures for 3000 TPD Dry Process Cement Plant at Tandur, Andhra Pradesh.
Overseas:	
Libya	Works of a total value of Rs. 114·65 crores for construction of 109 school buildings and some other buildings have been secured by HSCL in Libya out of which works of the value of about Rs. 54·63 crores have been completed as in October, 1982.

3.10.5 *Turnover and Working Results*

The Company's turnover during 1981-82 was Rs. 158.93 crores as against Rs. 157.38 crores during 1980-81. The provisional budgetted turnover for the year 1982-83 is Rs. 173.76 crores. The Company suffered a loss of Rs. 12.37 crores during 1981-82 as against a loss of Rs. 33.97 crores during 1980-81. One of the main reasons for the loss is large surplus labour force at Bokaro.

3.10.6 *Personnel*

The personnel position as on the 31st December, 1982 is indicated below :—

Category	Total No. of employees	S.C.	S.T.	Female employees	Physically Handicapped Persons
1	2	3	4	5	6
Group A	1820	28	8	5	1
Group B	623	38	4	6	1
Group C	15890	1700	800	120	26
Group D (Excluding Sweepers)	5684	1312	2242	1313	10
Group D (Sweepers)	158	83	23	—	NIL
TOTAL	24175	3161	3077	1444	38

General

HSCL has its own Safety Code and various steps have been taken by it to ensure its implementation. The employees of the Company participate in the management of its affairs through various committees which look after their problems and welfare.

3.11 VISAKHAPATNAM STEEL PROJECT

Project Profile

3.11.1 Visakhapatnam Steel Project is the first shore based integrated steel plant being set up in India away from the major raw material source i.e. metallurgical coal and iron ore. Being shore-based it would have advantage in the matter of import of coking coal needed for augmenting the limited reserves of the country, as well as for export of finished products. The project is also expected to help industrialisation of the region.

3.11.2 The project is being implemented in collaboration with the Government of U.S.S.R. in 2 over-lapping stages. In the first stage, it would produce 1.2 million tonnes liquid steel; and in the second stage, a total of 3.4 million tonnes molten steel. The first stage will be completed by 1st February, 1986 and the second stage by end of 1987. This is the first time that a project of this magnitude is being constructed in India within such a tight time schedule. M/s. M. N. Dastur & Co. (Pvt.) Ltd. are the principal consultants for the Project.

3.11.3 VSP will have the most modern technology of coke, iron and steel production. It will have 7 meter tall coke oven batteries, dry quenching facilities, bigger furnaces of 3200 Cu. M. each, with Bell-less charging and 100% continuous casting facilities. For production of finished products it would have 4 most modern Rolling Mills. In the first stage 1.2 million tonnes molten steel will be rolled into billets, rounds, bars, squares, angles and channels. When completed the project will produce 710,000 tonnes of light and medium merchant products; 600,000 tonnes of wire rods; 700,000 tonnes of medium merchant and structural products; 800,000 tonnes of universal beam mill products. In addition, there will be 173,000 tonnes of billets and 215,000 tonnes of pig iron for sale. The project will also produce by-products like tar, benzole etc. 1.4 million tonnes of granulated slag will also be available for making of cement.

3.11.4 The total cost of the project is estimated at Rs. 3897.28 crores with a foreign exchange component of Rs. 679.59 crores. The budget provision for 1982-83 was Rs. 250 crores against which the expenditure was Rs. 217.21 crores upto 31-12-1982.

3.11.5 *Progress of construction*

75.39 lakh Cu. M. of excavation work has been completed out of the total of about 131 lakh Cu.M.

3.11.6 22 million Cu.M. of earth work in site levelling has been completed out of a total of 23.8 million Cu.M.

3.11.7 Civil construction works have been taken up in all major production units. Orders for 148,521 tonnes of equipment out of a total of 358,696 tonnes and 91,537 tonnes of refractories out of a total of 1,69,000 tonnes have been issued. Out of total equipment of 4,49,840 tonnes, 3,09,101 tonnes (i.e. 68.7%) will be obtained from indigenous sources. Rest will be imported half from Soviet Union and the remaining half from

other countries. Entire supply of 4,29,700 tonnes of structurals is planned from indigenous supplies. Necessary transport and port facilities, water and power supplies have been planned. The construction work on the project is progressing satisfactorily.

3.12 New Steel Plant in Orissa

3.12.1 In October, 1980, the Government of India decided to set up a new steel plant at Paradip in Orissa. After evaluating various offers, on 24th September, 1981, a letter of intent was issued in favour of M/s Davy Mckee of U.K. for construction of this plant on turn-key basis subject to satisfactory settlement of terms and conditions.

3.12.2 An Expert Committee was set up to conduct negotiations with M/s Davy Mckee for the finalisation of terms and conditions. While the negotiations were in progress it was found that the meteorological conditions of Paradip were unsuitable for the location of a steel plant. Government therefore, decided to change the site to a place in Daitari region about 120 Km. inland in Orissa state based on consideration of logistics and safety, substantial savings in infrastructural costs, economies in cost of site preparation and recurring cost over the life of the plant.

3.12.3 In the final stage of negotiations. M/s Davy Mckee rescinded from their original commitment on the construction of the plant. The letter of intent was therefore cancelled.

3.12.4 Government have set up a wholly owned Central Government Company (Neelachal Ispat Nigam Ltd) on 27th March, 1982 to implement this project. MECON has completed the Feasibility Report for this project which is under examination by Government. MECON are also preparing a Detailed Project Report which is likely to be completed by the last quarter of 1983. Possibilities of raising external resources for imported equipment as well as the local cost are being explored. A number of countries like U.K., USSR, France, Japan etc. have evinced interest in this project.

2.12.5 Work on the development of infrastructural facilities like acquisition of land, railway facilities, power lines, water facilities etc. is in progress. The State Government has been requested to acquire 6000 hectares of land for the plant and township. State Government has already initiated action for the acquisition of land. Grid survey, soil testing, ore testing etc.

are in progress. Development of infrastructure facilities will proceed simultaneously with procurement and erection of plant and equipment and related construction activities so as to meet the commissioning schedule of this project.

3.13 Vijayanagar Steel Project

A new company—Vijayanagr Steel Limited, has been set up to implement the Vijayanagr Steel Project. MECON has been entrusted with the work of preparation of the detailed project report which is likely to be completed by March, 1983. Separately, Sponge Iron India Limited have conducted bench-scale tests with three types of iron ore from Bellary-Hospet sector, and coal samples from Western Coalfields, Singareni collieries; and lignite from Neyveli Lignite Corporation. Further tests considered necessary for design engineering etc. are being conducted by the Sponge Iron India Limited at their plant in Kothagudem, Andhra Pradesh.

3.14 Companies of the Bird Group

3.14.1 The assets and undertakings of Bird & Company were acquired by the Government under the Bird & Company Limited (Acquisition and Transfer of Undertakings and other Properties) Act, 1980. The administrative Control of four companies of the Bird Group has been entrusted to the Department of Steel.

The names of these companies and the Government's direct and indirect shareholding in them are indicated below :—

Name of Company	Govt. shareholding (as % age of total)
1. Orissa Mineral Development Company Limited.	47·50
2. Karanpura Development Co. Ltd.	51·53
3. Kumardhubi Fireclay & Silica Works Limited	37·35
4. Bisra Stone Lime Company Ltd.	40·45

There are also seven Investment Companies of the Bird Groups. Government is taking action to amalgamate them into one company. The amalgamated company will also come under the Administrative control of the Deptt. of Steel.

3.14.2 Orissa Mineral Development Company Limited is engaged in the mining of iron ore and manganese ore. The iron ore and manganese ore are supplied to the steel plants, mainly

Durgapur Steel Plant and IISCO and some quantity is also exported through MMTC. In 1981-82, the Company's output was 5.7 lakh tonnes of iron ore and 0.56 lakh tonnes of manganese ore. The Company made a profit of Rs. 2.28 lakhs (Provisional) in 1981-82.

3.14.3 Karanpura Development Company Limited is engaged in the mining of limestone and fireclay and has a refractory plant to 5000 MT per year capacity for manufacture of firebricks. The factory and mines are at Sirka, District Hazaribagh in Bihar. The limestone is mainly supplied to various cement plants and DSP. In 1982—(upto November, '82), the Company produced 9148 tonnes of limestone, 441 tonnes of Fireclay, 105 tonnes of calcined clay and 128 tonnes of firebricks, and made a marginal loss of Rs. 1.45 lakhs.

3.14.4 Kumardhubi Fireclay & Silica Works Limited is one of the major producers of refractories in the country. It has an installed capacity of 1,35,000 tonnes of refractories mainly firebricks high alumina and silica bricks. In 1982 (upto November, 1982) the Company produced 67170 tonnes of refractories valued at Rs. 10.25 crores and earned a profit (before tax) of Rs. 30 lakhs.

3.14.5 Bisra Stone Lime Company is engaged in mining of limestone and dolomite. The production capacity is 15 lakh tonnes per annum. The Company supplies about 60% of the requirements of limestone and dolomite of the steel plants at Durgapur, IISCO and TISCO. In 1981-82, the Company's total despatches of limestone and dolomite were 14.65 lakh tonnes. The Company suffered a net loss (after depreciation) of Rs. 1.10 crores during 1981-82.

AUTONOMOUS BODIES

3.15 Mineral Development Board

Organisation and functions

3.15.1 The Iron Ore Board was registered as a Society in January, 1973, as a nodal agency for ensuring systematic, coordinated and integrated development of Iron Ore deposits in the country and to ensure conservation and optimum utilisation of iron ore. In 1978, it was considered necessary to enlarge its scope to cover some other minerals. Consequently the Board was renamed as Mineral Development Board from 15th June, 1979. At present its activities cover 27 minerals. The Board,

besides functioning as Adviser to Government on mineral development, is also engaged in preparing perspective plans for resource development and conservation; undertaking/sponsoring exploration, analysis, market surveys or other special studies for best possible utilisation of scarce mineral resources in the country.

Composition of the Board

3.15.2 The constitution of the Board provides for a total membership not exceeding 15 including Chairman and Member Secretary, nominated by the Government of India. At present it has a Chairman and 12 members representing various Ministries and organisations involved in mining industry. The Board's expenses are met entirely by grants from Central Government.

Activities

3.15.3 Mineral Development Board continued and intensified its efforts in collaboration and cooperation with agencies engaged in the mineral development, extraction and distribution. The Board has acted mainly as a cooperative and catalytic force to give the requisite thrust to the programme of resource conservation, augmentation, development and utilisation especially for Tungsten, Vanadium and other crucial strategic materials.

3.15.4 *Iron Ore*

MDB had taken studies on the beneficiation of iron ore slimes from different mechanised mines in the country for promoting the interests of conservation through utilisation of all fractions of R.O.M. and to abate the pollution effects of ore washing. The study by SALA International, Sweden which has given very encouraging results has established that the iron ore slimes from the mechanised mines of Bailadila can be successfully beneficiated using high gradient magnetic separation method yielding a very high grade ore concentrate with appreciable weight percentage recovery of iron. The Regional Research Laboratory (RRL), Bhubaneswar has also completed its tests except for Donimalai slimes. The results indicate that the slimes are amenable to beneficiation.

3.15.5 A study commissioned by MDB and carried out by National Mineral Development Corporation showed that the slimes of Bailadila and Donimalai are amenable to beneficiation by methods, viz. cyclone followed by spiral and cyclone followed by tabling. They have found that the wet magnetic separation does not yield satisfactory results.

3.15.6 As an extension of the slime beneficiation study, SALA International was asked to study the feasibility of utilising the beneficiated concentrates in conjunction with blue dust and iron ore fines for making cold bonded pellets that could be used in BF/DRI processes of iron making. The results are not conclusive and further work is in progress. SALA had also tested the suitability of Kudremukh concentrates for cobo pellet making. The results are encouraging.

Manganese

3.15.7 The feasibility of reducing the iron content in high iron manganese ores of South Orissa was investigated by RRL, Bhubaneswar at the instance of MDB to yield a product of battery grade through physical beneficiation methods. The study revealed that while it has not been possible to reduce the Fe content to the required level (-4%) by physical beneficiation method, it is possible to reduce the iron content from about 20 per cent to 13%. It was also proved that substantial gauge material can also be removed by rejecting the 5 mm size fraction from the crushed material.

3.15.8 The overburden material of the Sukinda Chromite area was tested by RRL, Bhubaneswar for separation of Nickel cobalt rich fraction from chrome mine over burden. The study has proved that the nickel contained in the overburden can be beneficiated from around 0.5 to 0.9 and even up to 1.5 per cent level by using physical size classification followed by magnetic separation.

Vanadium

3.15.9 The drilling work in the Khursipar Vanadium area has been completed. In 33 boreholes 1769 mts. of drilling was done. The core samples at one meter interval in the ore zone have also been analysed. The drilling has proved the extension of the ore body upto 60 metres and possibility upto 100 metres depth. The original report made a provisional estimate of 30 meters depth only. The width vary from 50 to 100 meters. The grade is found to be around 0.8 to 0.9 per cent Vanadium pentotide. The final report is awaited.

Tungsten

3.15.10 The exploration and beneficiation studies for tungsten in Degna and Almora are in Progress.

Tungsten Analysis Problems

3.15.11 MDB convened a meeting in Jaipur with the help of Rajasthan State Mineral Development Corporation in September 1982 for discussing the sampling and analysis of Tungsten ore. This was attended by all concerned agencies like Geological Survey of India, Indian Bureau of Mines, BARC, DMRI., State Directorates and other laboratories. Decisions were taken by all participating agencies to follow a standardised procedure for picking the samples as well as for their analysis in labs.

Employment Study

3.15.12 Mineral Development Board has sponsored a study on 'Employment, Cost efficiency and limits to choice of Technology : Some case studies in Mining Industry'. Indepth case studies have been completed and the final report is expected shortly.

Resource Audit

3.15.13 A new approach is being attempted by MBD in cataloguing the mineral resources of Rajasthan in all its quantitative and qualitative aspects against the background of available infrastructure of the state. This resource audit would bring into relief the mineral development potential, information gaps, infrastructural needs and rough investment magnitudes needed for attaining the production potential. The study would be completed in early 1983-84.

CHAPTER IV

PRIVATE SECTOR

4.1 *Tata Iron and Steel Company Limited*

4.1.1 The Industrial Complex of Tata Iron and Steel Company Limited (TISCO) consists of the integrated steel plant at Jamshedpur, captive Collieries at Sijua, Jamadoba and West Bokaro and an iron ore mine at Noamundi. The TISCO Steel Plant is the oldest in the country and has presently an installed capacity of 2 million tonnes per year of steel ingots equivalent to 1.5 million tonnes of finished steel. The plant produces a number of semi-finished and finished steel items.

4.1.2 *Production*

The steel plant has been operating at over 90% of installed capacity for several years. The production during the last three years and the current year is as follows :—

Year	Steel ingots	Saleable Steel ('000 tonnes)
1979-80	1,779	1,448
1980-81	1,875	1,537
1981-82	1,962	1,606
1982-83		
(April-December, 1982)	1,437	1,178

Out put of saleable steel at 1.606 million tonnes in 1981-82 was record for Tata Steel. Production of saleable steel in 1982-83 is expected to be around 1,550 million tonnes.

4.1.3 *Financial Performance*

M/s. Tata Iron and Steel Company Limited has reported a profit of Rs. 15.43 crores (before tax) for the half year—April to September, 1982 as against a profit of Rs. 46.60 crores for the corresponding period of 1981. The fall in the profit has been attributed by the company to the recessionary trends in the economy aggravated by liberal imports, increase in cost of inputs and

the interest burden on the loans obtained for their first phase of the modernisation programme, benefits of which will start flowing only from 1983-84.

Important Capital Schemes

(a) *Five Year Programme*

4.1.4 The Company has a continuous five year rolling programme of capital expenditure for undertaking major replacements and renewals in order to maintain the productivity and efficiency of the plant and the facilities at the company's collieries and mines. This programme is reviewed by the Board of Directors of TISCO every year. In the present capital expenditure programme for the five year period 1982-83 to 1986-87 a capital expenditure of approximately Rs. 265 crores has been sanctioned. The two major schemes under execution are West Bokaro Colliery Expansion Project and a project for augmenting captive power generation by 25 MW. While the facilities in respect of the first project have been installed and commissioned operations have been severely hampered by power shortage. The second project is due for completion in the later half of the 1983-84.

(b) *Modernisation Programme*

4.1.5 First phase of M/s. TISCO's modernisation programme undertaken at a total cost of about Rs. 220 crores is being implemented according to schedule and the major units such as the basic oxygen furnace (LD) shop, continuous casting plant and VADR Unit, Bar Forge Shop, the Oxygen Plant etc., are expected to be completed by March 1983. The Modernisation Programme will enable the company to replace 50% of its steel making capacity by a new steel melting shop using the modern oxygen steel making process and increase the liquid steel output from 2.0 million to 2.16 million tonnes per annum.

4.2 *Mini Steel Plants*

4.2.1 The electric arc furnace units, popularly known as mini steel plants, produce steel based on steel scrap/sponge iron. These units constitute an important segment of the steel industry in the country. While the integrated steel plants mainly produce mild steel in bulk quantities, the ministeel plants produce mild steel as well as alloy steel which could not be economically produced by the integrated steel plants.

4.2.2 At present, there are 165 ministeel plants with a total licensed capacity of over 41 lakh tonnes per annum of which 144 units have been in production. The other units are at various stages of implementation. Besides these units, there are some electric arc furnace units licensed for manufacture of castings which have been allowed to diversify their production into steel ingots.

4.2.3 These units have been operating at an average capacity utilisation rate of 70%-75%. In order to enable the mini steel plants increase their production, Government have permitted liberal import of melting scrap and sponge iron. Additionally, they have also been allowed to diversify their production within their licensed capacities into all other grades of steel. In appropriate cases, they are also being encouraged to improve their economic viability by setting up rolling mills as a measure of forward integration. Also, adoption of new technologies which enable improving productivity and lower consumption of inputs like electrical energy is also being encouraged. These facilities have resulted in improved production and capacity utilization in the industry and it is expected that production would reach a level of 26 lakh tonnes by the year 1984-85. The table below indicates the production achieved by Electric Arc Furnace units during the past three years.

Year	Production (in lakh tonnes)
1979-80	16·63
1980-81	19·53
1981-82	20·31
1982-83 (April-Nov., 1982)	13·71 (Provisional)
1982-83 (Estimated)	21·10

4.3 *Rerolling Industry*

4.3.1 The Rerolling Industry is the major source of supply of bars and rods. About 75% of country's production of bars and rods comes from the rerolling mills. To produce these items, the rerolling mills utilise billets, blooms, slabs from the integrated units and also rerollable scraps. This industry is helping the economy by rolling scrap materials as well as blooms and slabs which could not be utilised by the integrated steel plants. These mills are also producing some special sections like window section, Z section etc. which cannot be rolled in the integrated steel plants.

4.3.2 A technical committee set up by Government reassessed the capacity of the rerolling units. As per the norms adopted by this Committee (1980), capacity of 1049 rolling mills has been reassessed at 206.8 lakh tonnes as follows :

	No. of rerolling mills	Capacity (lakh tonnes)
Mills in the medium large scale sector	188	78·1
Mills in the small scale sector	861	128·7
	1049	206·8

In order to ensure a proper development of the rerolling industry, this industry has now been brought fully under the purview of the licensing provisions of the IDR Act, 1951. As such those units who do not possess a licence have been required to obtain COB licences.

4.3.3 The production of the reporting mills registered with the Iron & Steel Controller, during the last three years was as under :

Year	Production (in lakh tonnes)
1980	13·38
1981-82	14·22
1982 (April-Sept.,)	07·35
1982-83 (Estimated)	14·80

4.4 Wire Drawing Industry

4.4.1 There are 71 wire drawing units at present with a total licensed capacity of 8.2 lakh tonnes per annum in the organised Sector. Since inadequate availability of wire rods—the raw material for wire drawing was affecting the production of wires, import of carbon steel wire rods was kept under OGL upto 5-12-1981. With the improved indigenous availability of High carbon steel wire rods since then, the wire drawing units are in a position to meet their raw material requirements from indigenous sources. However, there is still some shortage of mild steel, Rimming quality steel and stainless steel wire rods.

4.4.2 In order to augment the availability of wires in different grades, Government have permitted the existing wire drawing units to freely diversify their production within their licensed capacities into all grades of steel except for mild steel wires thicker than 12 SWG. The production of wires (by units borne on the list of Iron & Steel Control) during the past three years was as under :

Year	Production (in lakh tonnes)
1980-81	3·32
1981-82	3·57
1982-83 (April-Sept., 82)	1·37
1982-83 (Estimated)	3·04

4.5 Tinplate Industry

4.5.1 Apart from the Rourkela Steel Plant, there are two units licensed to produce tinplates/tinfree steel. The total licensed capacity of these two units is 1,50,000 tonnes per annum of electrolytic tinplates/tinfree steel and 20,000 tonnes per annum of Hot dipped tinplates. In the current year, one of the units licensed to manufacture hot dipped tinplate has discontinued production of this item on the ground of uneconomical operation.

4.5.2 This industry has faced some marketing problems due, *inter alia*, to import of tinplates, both prime & waste from abroad at substantially lower prices. The main raw material namely, TMBP Coils and Tin Ingots used by this industry have also to be imported.

To help indigenous industry to become economically viable, Government have allowed the following concessions :

(i) Import-duty on the TMBP coils has been waived;

(ii) Import duty on finished tinplates both prime and waste/waste has been stepped up;

(iii) Restrictions have been imposed on the import of tinplate waste/waste.

Production of Tinplates by these units, excluding Rourkela Steel Plant, during the last three years was as under :

('000 tonnes)

Period	Oilcan Size	Non-Oilcan Size	Total
1980-81	28	22	50
1981-82	33	25	58
April-Sept., '82	19	11	30
1982-83 (Estimated)	38	23	61

4.6 Steel Strips Industry

There are 31 cold rolling units at present with a licensed capacity of 2.4 lakh tonnes per annum. Of them, 28 units with a capacity of 2.2 lakh tonnes have been in production. The table below indicates production of Cold Rolled Strips in private sector during the past three years :

Year	Production (in lakh tonnes)
1980-81	1·20
1981-82	1·42
1982-83 (April-Sept., '82)	0·64
1982-83 (Estimated)	1·36

4.7 Ferro Alloys

At present, there are 21 ferro alloy units with a total licensed capacity of 5.25 lakh tonnes per annum in the organised sector. Ferro Manganese, Ferro Silicon and High Carbon Ferro Chrome are presently being exported after meeting the indigenous demand. The production of ferro alloys during the past three years has been as under :

Year	Production (in lakh tonnes)
1980-81	2·71
1981-82	3·05
1982-83 (April-Sept., '82)	1·23
1982-83 (Estimated)	2·50

4.8 Sponge Iron

Sponge Iron is mainly used as a substitute raw material for steel melting scrap in ministeel plants. At present only one unit set up by Sponge Iron India Limited with a capacity of 30,000 tpa is in production. Besides, there are three units in Joint Sector with a total licensed capacity of 5.10 lakh tpa and these are at various stages of implementation. Of these one unit of M/s Orissa Sponge Iron Ltd., is expected to go into production this year. So far there has been no production of sponge iron in private sector.

Seeing the need of the sponge iron production for alternative and better raw material feed for electric arc furnace units and the successful operations of the demonstration sponge iron plant, Government has already decided to promote establishment of further sponge iron making capacities in the country. In view of the sophisticated technology, this industry is also open for M.R.T.P. houses by its inclusion in Appendix-I of the Press Note of 21st April, 1982. The Policy and the Guidelines for consideration of applications for grant of industrial licences for sponge iron making capacities have been announced and proposals in accordance with these Guidelines will be considered favourably.

4.9 Pig Iron

In addition to the Integrated Steel Plants, there are 3 units which are engaged in production of pig iron. There total licensed capacity is 0.20 million tonnes per year. One of these units have started production only in November, 1981. Production of these 3 units during the last three years was as under :

('000 tonnes)

Year	
1980-81	99
1981-82	105
April-Sept., '82	44
1982-83 (Estimated)	90

CHAPTER V

RESEARCH & DEVELOPMENT CENTRE IN STEEL SECTOR

5.1.1 The Research & Development Centre of SAIL at Ranchi was set up in 1972 with the primary objective of up-dating technology in conformity with the requirement of Indian conditions aiming at increasing productivity, reducing cost, conserving energy in the steel industry. The R&D Centre of SAIL at Ranchi has completed a decade.

5.1.2 Some of the major projects undertaken by R&D Centre which have considerable significance to the steel industry in practical application are as under :—

(i) Development of cold bonded pellets.

(ii) Lime injection technique in blast furnaces.

(iii) External desulphurisation of hot metal.

(iv) Optimisation of coal blend and blending facilities for improvement of coke strength.

(v) Development of new steels like SAIL-MA and API X-70 grade accicular ferritic steel.

(vi) Development of tar dolomite bricks to increase the converter life.

(vii) Process development for increasing the productivity of steel and improving the life of plant and machinery.

5.1.3 The research & development work of the Centre is not only confined to India but work in collaboration with foreign agencies on a substantial scale has been taken up.

(a) *Indo-Soviet collaboration projects*

In collaboration with Soviet Union a number of research projects for modernisation and optimisation have been taken up in Bhilai Steel Plant. Some of the notable projects are :

(i) Pulverized coal dust injection in the tuyeres of blast furnace resulting in use of non-coking coal and improving the productivity.

(ii) Optimisation of thermal and oxygen lancing regime to improve combustion efficiency in steel making process.

(iii) Optimisation of sinter mix for production of high basic sinter which would help in reducing the coke consumption rate in blast furnaces and improve productivity.

(iv) Development of process technology for increasing the life of rolls in the finishing mill.

(b) *UNDP/UNIDO Projects*

The following UNDP/UNIDO projects of considerable importance for design and expertise development in the following areas have been taken up.

(i) Concurrent top and bottom blowing in converter steel making which would result in production of steel at low energy consumption and saving cost.

(ii) Fully instrumented experimental blast furnace which will help in application and development of Iron making technology suitable for raw material under Indian condition.

(c) *SAIL-CSIR Interaction*

In order to maximise the utilisation of expertise and facilities available in various laboratories under CSIR a working group has been constituted to identify areas of collaborative research projects which would result in improving productivity under Indian condition. A number of projects have been identified and work on 24 projects have already been taken up during the year under review.

5.1.4 To augment and supplement the research facilities on metallurgy available in the country, a laboratory complex is being set up at the cost of Rs. 16 crores at R&D Centre, Ranchi. The construction work is expected to be completed by the end of this year and the facilities will be fully commissioned by 1984. In addition to this, an Information and Documentation Centre is being set up along with computerisation facilities forming an integral part of laboratory complex.

5.1.5 A few major capital projects have been taken up prior to incorporation of the technologies evolved in direct commercial application. These are—

(i) *Direct reduction sponge iron pilot plant*

A rotary kiln sponge iron plant at HEC, Ranchi is engaged in developing a process technology for commercial application in the production of sponge iron required for steel making. This technology is generally required in areas far remote from sources of coking coal. At present the work is on hand for adoption of this technology in the proposed steel plant at Vijayanagar.

(ii) *Partial briquetting of coal charge at BSP*

This technology when fully developed would result in utilisation of non-coking coal up to 20% in blend with coking coal for coke making for production of steel through blast furnace route. Successful implementation of this project on the commercial scale would considerably reduce the strain on coking coal of which our country has inadequate reserves. A trial plant is being set up at Bhilai.

(iii) *Pilot coke oven complex at Ranchi*

This pilot plant is being established with a view to testing the various types of coal for optimising the blend used in steel plants. This would enable a wider spectrum of coal to be tested for steel plants use and will help in locating new sources of supply within the country.

5.1.6 The research activities so far undertaken by the R&D Centre has resulted in improving the quality of steel which ensures lesser consumption for the same utility like SAIL-MA, where the quality is so improved that economy in quantity is achieved. Development of process technology in roll cooling has resulted in improvement in service life of rolls by 100% in Bhilai Steel Plant. Development of optimum thermal and oxygen lancing regime in open hearth steel making resulted in saving of fuel requirement of 12% and improved roof life of open hearth furnaces at Bhilai. Through the Argon pushing technique developed in Alloy Steels Plant, Durgapur, the quality of stainless steel has been considerably improved. The development of on line measurement technique of moisture in coke

have provided the necessary assistance to control the blast furnace operation by taking suitable timely action which would result in economy in coke consumption and smooth operation of blast furnace.

5.1.7 The capital expenditure of the Research & Development organisation was Rs. 7.66 crores in 1981-82. The revised estimates for 1982-83 stand at Rs. 6.93 crores.

CHAPTER VI

RAW MATERIALS FOR STEEL PRODUCTION

6.1 *Iron Ore*

6.1.1 India is well endowed with resources of iron ore, both in terms of quality and quantity. The iron ore reserves in the country are presently estimated at 13,500 million tonnes, out of which about 10,500 million tonnes are haematite and 3,000 million tonnes are magnetite. The larger deposits are concentrated in five more or less district areas viz., the Bihar—Orissa belt, the Baildila-Dalli-Rajhara area of Madhya Pradesh the Bellary-Hospet area in Karnatak, Ratnagiri district in Maharashtra and Goa.

The Iron Ore Mines in the country can be classified broadly as :—

(i) 'Captive' mines owned and operated by integrated steel plants, for their own use;

(ii) Large mechanised mines owned and operated by public sector organisations, such as the National Mineral Development Corporation Ltd. and the State Government undertakings for export and internal consumption; and

(iii) Smaller mines operated by private individuals or companies on manual or semi-mechanised lines.

The production of iron ore during the year 1982 is estimated at 40.5 million tonnes as against 41.4 million tonnes in 1981. Goa was the chief producer of iron ore accounting for 13.1 million tonnes or 32% of the total production during 1982, followed by Madhya Pradesh with 10.2 million tonnes (25%), Bihar 7.2 million tonnes (18%), Orissa 5.8 million tonnes (14%), and Karnataka 3.1 million tonnes (8%). In addition during 1982, a production of 0.7 million tonnes of iron ore concentrates is estimated for Kudremukh Iron Ore Company Limited, in Karnataka.

6.1.2 Despatches of iron ore (including concentrates from Kudremukh) are estimated at 41.7 million tonnes in 1982 of which 17 million tonnes (41%) are for internal consumption and 24.7 million tonnes (59%) are for exports.

6.1.3 Over the last 15 years, blast furnaces the world over have taken to greater use of sintered fines and of pellets for the production of hot metal because of the resultant fuel saving. Another recent development is the production of direct reduced iron (sponge iron) from iron ore pellets or calibrated lump ore using a gaseous or solid reductant, and conversion of the sponge iron into steel in electric furnaces. This technology is particularly suited to countries which have cheap fuel, such as natural gas, and electric energy. Because of these developments, a large number of pellet plants have come up in a number of countries. The total pellet capacity in the world in 1980 was around 263 million tonnes. 218 million tonnes for blast furnace grade pellets and the balance for direct reduction grade pellets. The direct reduction (sponge iron) capacity in the world was about 21 million tonnes.

6.1.4 In India, there are two pellets plants in the private sector with a combined capacity of 1.5 million tonnes/year of BF grade pellets. The Joint Sector Company, Mandovi Pellets Limited, has a plant for production of 1.8 million tonnes/year of BF grade pellets. A three million tonnes pellet plant for production of DR grade pellets is being set up at Mangalore in the public sector.

6.2 *Manganese Ore*

6.2.1 The recoverable reserves of manganese ore in the country amount to 117 million tonnes. Manganese is a strategic metal and is an essential input in the production of special steels. Because of its importance and the limited reserves, export of high grade manganese ore has been banned for the last several years. Export of lower grades is allowed within certain quantitative limits.

6.2.2 Production of manganese ore during 1982 is estimated at 1.47 m. tonnes as compared to 1.53 million tonnes in 1981. Orissa, Karnataka, Madhya Pradesh and Maharashtra were the leading producing States accounting for 35%, 23%, 16% and 15% respectively of the total estimated production of manganese ore in 1982.

6.2.3 Despatches of manganese ore from the mines are estimated at 1.40 million tonnes in 1982 of which 0.90 million tonnes (64%) are for internal consumption and 0.50 million tonnes (36%) are for exports.

6.2.4 Manganese Ore India Limited (MOIL) is the largest producer of manganese ore in the country. Apart from MOIL Orissa Mining Corporation and Mysore Minerals Limited, most of the manganese mines are operated by private mines owners. Internal consumption has fallen in the last two years due to loss off-take by Ferro Manganese Producers owing to power restrictions, and fall in demand for ferro manganese in the export market.

6.3 *Chromite*

6.3.1 Chromite ore is a very important alloying element in ferrous metallurgy. The known reserves of chromite in the country are estimated at 113 million tonnes. The largest deposits are located in Orissa, which accounts for about 80% of the country's production. As in the case of manganese ore a restrictive policy is followed by the Government in regard to the export of this mineral. High grade chromite is banned for export and export of lower grades is allowed within quantitative ceilings.

6.3.2 The production of chromite during 1982 is estimated at 322839 tonnes as against 336095 tonnes in 1981. Orissa accounted for 265690 tonnes followed by Karnataka with 55557 tonnes. About 284542 tonnes of chromite were despatched in 1982 of which 176073 tonnes (62%) are for internal consumption and 108469 tonnes (38%) are for export.

6.3.3 Other minerals like magnesite, sillimanite, Kyanite and andulasite required for the steel industry are also produced in small quantities in the country. Exports of these minerals are also restricted.

CHAPTER VII

PROGRESSIVE USE OF HINDI

7.1 The Government's policy relating to the use of Hindi for official purpose as contained in the Constitution; the Presidential Orders, the Official Languages Act and Rules is being implemented in the Department of Steel. The annual programmes framed by the Department of Official Languages for the progressive use of Hindi for official purposes and the general orders issued by them are also being implemented.

7.2 The work of relating to the progressive use of Hindi in the Department of Steel is under the administrative control of a Joint Secretary and a Branch Officer. A Hindi Section consisting of a Hindi Officer, four translators and two typists, assist in this work. Necessary infrastructure of 15 typewriters, help literature, Hindi reading material etc. is made available in the Department.

7.3 A number of measures are being taken for the promotion of progressive use of Hindi in the Department, its attached offices and in the Public Sector Undertakings under the administrative control of this Department. These measures are :

(i) *Training of Staff*

A Programme has been drawn up for imparting training in Hindi/Hindi typewriting/Hindi Stenography to the employees for whom in-service training is obligatory.

The position regarding training of Government servants in Hindi/Hindi typewriting/Hindi stenography in the Department is as under :

Hindi Training

Total number of employees (Group A, B & C).	238
Total number of employees possessing requitite Hindi qualifications.	181
Total number of employees who have passed Prabodh, Praveen and Pragya/Intensive Course/ Special Departmental Examinations etc.	36

Total number of employees under training.	3
Total number of employees yet to be trained.	18

Hindi Typewriting/Stenography :

	Trained	Under training	Yet to be trained
Hindi Typewriting	5	2	36
Hindi Stenography	7	—	32

The officers and staff of the attached offices and Public Sector Undertaking are given training under the Hindi Training Scheme of the Ministry of Home Affairs wherever such facilities exist. In other places, employees are encouraged to learn Hindi through correspondence courses conducted by the Central Hindi Directorate and all expenses for the same are borne by the concerned offices. 1050 employees of the Steel Authority of India Limited alone have benefited from this scheme during the last two sessions. In addition, Hindi workshops are organised to give on the job training to employees in the various undertakings for promoting use of Hindi.

(ii) *Competitions*

With a view to encouraging learning of Hindi by non-Hindi knowing employees, elocution contests/dramas/essay competitions are held every year in all Public Sector Undertakings. The number of employees participating in these competitions is increasing every year.

(iii) *House Journals and Help literature*

SAIL has purchased the film "Learn Devnagri" which is screened regularly. Lingua cassettes have also been purchased and are made available to the employees on demand. All the Public Sector Undertakings under the Department of Steel are publishing their house journals in Hindi also. In addition, Hindi magazines and books are kept in the library.

(iv) Inspections are carried out with a view to assessing the implementation of the policy about the progressive use of Hindi. The Hindi Officers of Public Sector Undertakings also carry out such inspections of their various units. The Hindi Salahakar Samiti attached to the Ministry of Steel & Mines has also been taking active interest in carrying out inspections of various offices and Public Sector Undertakings attached to the Ministry of Steel and Mines. During this year, the inspection of following Public

Sector Undertakings has been carried out by teams of members of the Hindi Salahakar Samiti :

Hindustan Steelworks Construction Ltd., Calcutta.

Metal Scrap Trade Corporation, Calcutta.

Central Marketing Organisation, SAIL, New Delhi.

Iron & Steel Controller, Calcutta.

Neelachal Ispat Nigam Ltd., Bhubaneshwar,

SAIL, New Delhi.

Kudremukh Iron Ore Co. Ltd., Bangalore.

(v) The goods manufactured in the Public Sector Undertakings are stamped/inscribed in both Hindi and English.

(vi) There is a Hindi Salahakar Samiti attached to the Ministry of Steel and Mines under the Chairmanship of Minister for Steel and Mines for monitoring and promoting the use of Hindi. The Samiti was constituted on 17-11-76 and 9 meetings of this Samiti have been held so far.

There is also an official language implementation committee under the Chairmanship of a Joint Secretary in the Department. This committee reviews the progress made in the use of Hindi in the Department, its attached offices and Public Sector Undertakings under the administrative control of Department of Steel. Meetings of this committee are held every quarter.

Similarly, the attached offices and the Public Sector Undertakings have their own official Implementation Committees to review and monitor the progress of Hindi.

7.4 As a result of measures adopted for promotion of Hindi for official purposes, the following work has been done during the year 1982-83 :

(a) The Branch Sales Offices of the Central Marketing Organisation, SAIL located at Chandigarh, Parwanu, Ludhiana, Mandi, Gobindgarh and Jullundur; IISCO Stanton Pipe Foundry Co. Ltd., Ujjain; Metal Scrap Trade Corporation, Calcutta; Hindustan Steel Works Construction Ltd., Calcutta, Central Marketing Organisation, Calcutta; Office of the Iron and Steel Controller and the Regional Iron and Steel Con-

troller both located at Calcutta have been inspected during this year.

(b) The work regarding the use of Hindi for the quarters ending 30-6-82, 30-9-82 and 31-12-82 can be seen from the following :

(i) Total number of Hindi Communications received from anywhere in this Department. 1337

(ii) Total number of Communications replied to in Hindi. 560

(iii) Total number of Communications replied to in English. 2

Position regarding originating correspondence

	Number Issued		
	Total	In Hindi & English.	In English
(i) General Orders	436	436	—
(ii) Resolution & Notifications	79	79	—
(iii) Administrative & other Reports	4	4	—
(iv) Papers laid before the House of Parliament	39	39	—
(v) Budget Performance of the Deptt. for the year 1982-83	1	1	—
(vi) Govt. reviews on the Annual Reports	5	5	—
(vii) Agenda Notes and Minutes of the meeting of Staff Council and Consultative Committee.	All Agenda Papers and Minutes of Staff Council & Consultative Committee Meetings were normally issued bilingually.		

(c) The pay slips of all the workers in Manganese Ore India Ltd. are being prepared only in Hindi. Total number of workers is about 13,000.

(d) *Notification of offices in the Gazette of India.*—Consequent on 80% of the staff having acquired a working knowledge of Hindi, the following offices were notified in the Gazette of India during the current year :—

(i) Chandigarh Branch Sales Office, Central Marketing Organisation, SAIL, Chandigarh.

(ii) Bharat Refractories Ltd., Bokaro Steel City.

(iii) Bhilai Refractories Plant, Maroda, a subsidiary Company of Bharat Refractories Ltd.

(iv) India Fire Bricks & Insulation Co. Ltd., Marar, a subsidiary Company of Bharat Refractories Ltd.

The number of offices notified so far comes to 33.

(e) A glossary of technical terms used in the steel industry has been prepared and 900 entries have been finalised so far.

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ERRATA

Sl. No.	Page	Para	Line	For	Read
1.	1	1·1	7	colomite	dolomite
2.	3	Sl. No. 4	2	an	and
3.	10	6	9	plants	plant
4.	10	8	3	Annexure 'A'	Annexure-2A
5.	10	8(i)	1	Plant	Plants
6.	13	—	Sl. No. 1·2	Steei	Steel
7.	15	—	Sl. No. 1·9	Sechnd	Second
8.	20	12	1	set up the	set up with the
9.	20	12	2	concentrate	concentrates
10.	24	2·1·9	8	Essentially	Essentiality
11.	24	2.1.9	10	new	now
12.	27	2·3·3	3	baned	banned
13.	30	Sl. No. 5 (Table I)	—	12185	121855
14.	30	Sl. No. 3 (Table II)	—	1366776	1366777
15.	32	3·1·3	10	Rs. 101 crores	Rs. 1·01 crores
16.	37	3·1·15(iv)	4	Rs. 82·46 (revised)	Rs. 82·46 crores (revised)
17.	37	3·1·15(v)	12	December, 1962	December, 1982
18.	38	3.1.17	9	Are	Arc
19.	43	3·2·3	Table (Heading)	Jan. March, 1982	Jan. March, 1983
20.	44	3·2·4	1	cintinues	continues
21.	49	3·4·5	6	get	got
22.	49	3·5	Heading	MINERALS activities NMDC	MINERAL activities of NMDC
23.	49	3·5·1	5	Fire Ore	Fine Ore
24.	53	3·5·11	5	OIL	MOIL
25.	55	3·6·1	5	Electrolystic	Electrolytic
26.	56	3·6·5	6—7	Workehs	Workers
27.	57	3·6·8	Heading	INDIAN FIRE-BRICKS	INDIA FIRE-BRICKS
28.	57	3·7	Heading	Iron council	Iran councils
29.	60	3·8·1	3	soils	silos
30.	62	3·8·6	1	to 5000 MT	of 5000 MT
31.	67	3·10·1	3	gauge	gangue
32	73	3·14·3	3	Vanadium pentotide	Vanadium pentoxide
33.	75	3·15·7	8	MBD	MDB
34.	75	3·15·9	1	1,550	1·550
35.	76	3·15·13	last line	There	Their
36.	77	4·1·2	2		
37.	83	4·9			