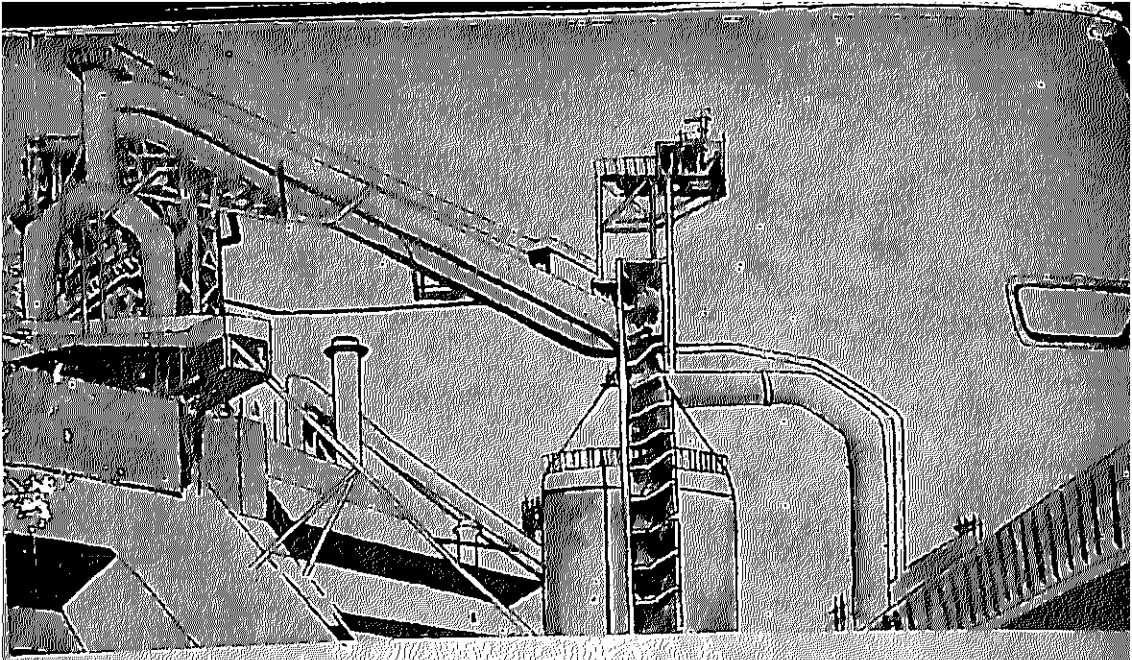
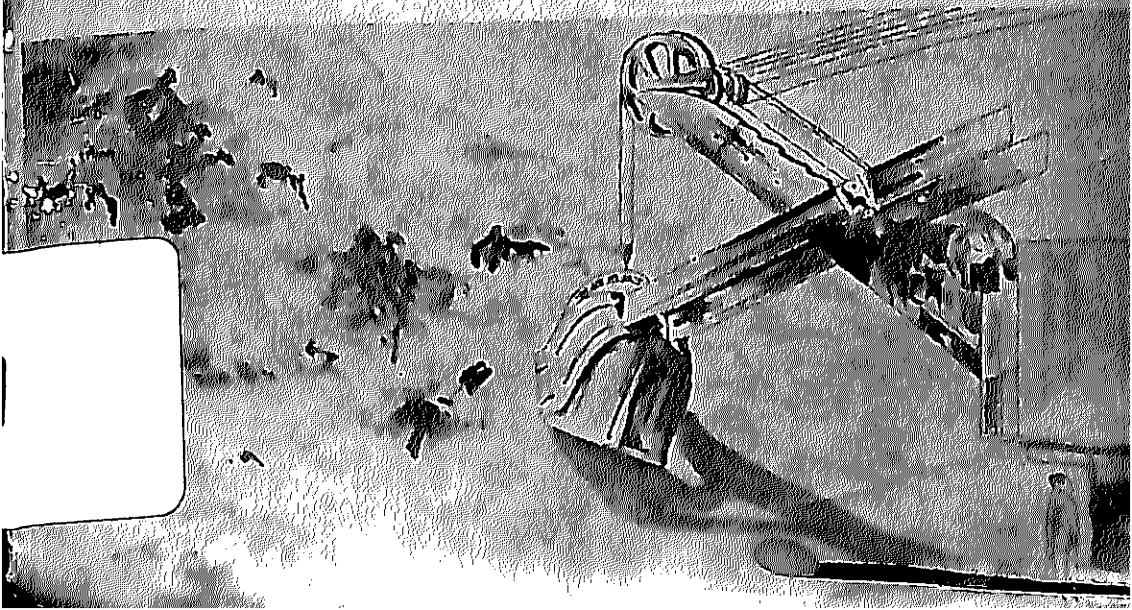


REPORT 1983-84

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



REPORT

1983-84

GOVERNMENT OF INDIA

MINISTRY OF STEEL AND MINES

DEPARTMENT OF STEEL

NEW DELHI

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 II

PART I

CHAPTER 1

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, dolomite, 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, four Directors, four Deputy Secretaries, eight Under Secretaries and one Deputy Controller of Accounts. The two Departments have a common Financial Adviser of the status of Additional Secretary and a common Controller of Accounts. A Technical Wing consisting of an Industrial Adviser, four Development Officers, and three Assistant Development Officers assists and advises the Department on technical matters. The size of the Secretariat of the Department continues to be small with a total strength of only 298. A statement showing the representation of women, Scheduled Castes and Scheduled Tribes, Ex-Servicemen and the physically handicapped persons among the employees is given in 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 details of the employees of the Iron and Steel Control Organisation are given in Annexure-1C.

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 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 fnuds 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 continue to carry out inspections to check misutilisation 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 1982-83 and 1983-84 (April 1983 to February, 1984) is given in Annexure-1D. In view of the easy availability of Steel and relaxations in steel distribution policy, the Iron and Steel Controller has relaxed and use restrictions for a number of items.

2.6 The Department of Steel has sixteen Public Sector companies under its administrative control. Besides, it has got under its control five of the Bird Group companies. The Department has interest in VISL and Mandovi Pellets Ltd. wherein Government had made investments through the Public Sector companies. A list of these undertakings is given in Annexure-1E. Besides these undertakings, Mineral Development Board (an autonomous body registered under the Registration of Societies Act) and the centralised agency for ensuring systematic, coordinated and integrated development of ferrous and other designated strategic minerals is also under the administrative control of the Department of Steel.

ANNEXURE—1A

LIST OF ITEMS OF WORK ALLOCATED TO THE DEPARTMENT OF STEEL

1. Steel plants in the public and private sectors, the re-rolling industry and ferro-alloys including all future development.
2. Development of iron ore mines in the public sector.
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 and 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 leases or matters connected therewith.
7. The Steel Authority of India Limited and its subsidiaries.
8. Matters relating to the following undertakings namely :—
   (1) The Visvesvarayya Iron and Steel Company Limited.
   (2) The Bolani Ores (India) Limited.
   (3) The Manganese Ore (India) Limited.
   (4) The Metals Scrap Trade Corporation Limited.
9. Other Public Sector Enterprises or undertakings falling under the subjects included in this list except such as are specifically allotted to any other Department.
10. All Attached or Subordinate Offices or other organisations concerned with any of the subjects specified in this list.

ANNEXURE—1B

Statement showing the number of employees, number of SC/ST, Physically Handicapped, Ex-servicemen, men and women as on 31-12-1983 in respect of the Secretariat of the Department of Steel.

Group of posts	No. of employees	Men	Women	SC	ST	Physically handicapped	Ex-servicemen
A . .	30	28	2	1	..	..	..
B . .	91	83	8	9	1	..	1
C . .	111	78	33	13	1	1	3
D . .	66	65	1	26	10	1	1
Total . .	298	254	44	49	12	2	5

ANNEXURE—1C

Statement showing the number of employees, number of SC/ST, Physically Handicapped, Ex-servicemen, men and women as on 31-12-1983 in respect of Iron and Steel Control Organisation.

Group of Post	No. of employees	Men	Women	SC	ST	Physically Handicapped	Ex-servicemen
A	25	25	..	2	..	..	..
B	30	30	..	11	..	..	..
C	181	152	29	31	5	4	5
D	90	89	1	19	3	1	
Total	326	296	30	63	8	5	7

ANNEXRE—1D

Statement showing the number of cases of Inspection of units/Suspension of supplies/Debarments in 1982-83 (April 1982—March, 1983) and 1983-84 (April-83—Feb-, 1984)

Region	Inspection		Suspension		Debarment	
	1982-83	1983-84 (Upto Feb. 84)	1982-83	1983-84 (upto Feb. 84)	1982-83	1983-84 (upto Feb. 84)
1. Bombay	200	332	38	27	49	9
2. Calcutta	126	122	38	1	62	—
3. Delhi	141	178	27	2	35	18
4. Hyderabad	254	277	23	2	43	8
5. Kanpur	131	114	39	23	41	6
6. Madras	397	374	11	13	30	14
Total	1249	1397*	176	68*	260	55*

*Figures for 83-84 (upto Feb' 84) are provisional.

ANNEXURE-1E

List of Undertakings under the Administrative Control of the Department of Steel.

A. PUBLIC SECTOR UNDERTAKINGS

1. Steel Authority of India Limited (SAIL).
2. Indian Iron and Steel Company Limited (a subsidiary of SAIL).
3. IISCO Stanton Pipe & Foundry Company Limited (a subsidiary of IISCO).
4. National Mineral Development Corporation Limited.
5. Hindustan Steel works Construction Limited.
6. Manganese Ore (India) Limited.
7. Sponge Iron India Limited.
8. Kudremukh Iron Ore Company Limited.
9. Metallurgical & Engineering Consultants (India) Limited (MECON).
10. Metal Scrap Trade Corporation Limited.
11. Ferro Scrap Nigam Limited (a subsidiary of MSTC).
12. Bharat Refractories Limited (BRL).
13. India Fire Bricks & Insulation Company Limited (a subsidiary of BRL).
14. Neelachal Ispat Nigam Limited.
15. Rashtriya Ispat Nigam Limited.
16. Vijayanagar Ispat Nigam Limited.

B. BIRD GROUP COMPANIES

17. Orissa Mineral Development Corporation Limited.
18. Birsa Stonelime Company Limited.
19. Kumardhubi Fireclay and Silicon Works Limited.
20. Karanpura Development Corporation Limited (KDCL).
21. Scott and Saxby Limited (a subsidiary of KDCL).

C. COMPANIES IN WHICH THE CENTRAL GOVERNMENT HAS MADE INVESTMENTS THROUGH PUBLIC SECTOR UNDERTAKINGS.

(i) Mandovi Pellets Limited	33% through NMDC
(ii) Visvesvaraya Iron & Steel Ltd.	40% through SAIL

D. COMPANY FLOATED AS JOINTVENTURES BY PUBLIC SECTOR UNDERTAKINGS

I *In India*

(i) North Bengal Dolomite Corporation Ltd.	50% through SAIL
(ii) Indo-Swis Engineering Company Ltd.	50% through MECON

II. *Abroad*

(i) Metallurgical & Engineering Consultants (Nigeria) Limited, Nigeria.	50% through MECON

CHAPTER 2

PLANNING AND DEVELOPMENT IN THE STEEL SECTOR

Industrial Development in India has reached a high degree of self-reliance and the steel industry occupies a place of primacy in the strategy for future development. Steel forms the basic input material for many diverse industries and other sectors of economy and it is one commodity whose greater availability also leads to greater demand and accelerated growth. The engineering, automobile, ship building and construction industries are the major consumers of steel and with an assured availability of the raw material, there are excellent prospects for the growth in these industries.

2. Before Independence, the only bulk steel making capacity available in the country was located in Jamshedpur Works of Tata Iron & Steel Company and Indian Iron & Steel Company Limited at Burnpur. During the Second Five Year Plan period (1956—61), the emphasis was shifted from agriculture to industrialisation and it was decided to set up three Integrated Steel Plants of 1.0 million tonnes ingot steel capacity each in the public sector to be located at Rourkela, Bhilai and Durgapur. These Steel Plants were built with the assistance of technological advanced countries, namely, West Germany, USSR and U.K. respectively. At the same time, steel plants of Tata Iron & Steel Company and Indian Iron & Steel Company Limited were expanded to 2.0 and 1.0 million ingot tonne capacity respectively.

3. In the Third Five Year Plan, further expansion of steel capacity in the public sector was conceived and these steel plants were subsequently expanded Durgapur to 1.6 million tonnes, Rourkela to 1.8 million tonnes and Bhilai to 2.5 million tonnes. Yet another steel plant at Bokaro with an initial capacity of 1.7 million ingot tonnes per year, with USSR collaboration, was planned.

4. Present installed capacity with six Integrated Steel Plants in the country is 11.4 million ingot tonnes. The capacity of Bhilai and Bokaro Steel Plant is being increased to 4.0 million

ingot tonnes each. In addition, Tata Iron and Steel Company is being modernised in two stages. The first stage of 2.16 million ingot tonnes has been commissioned. Taking into account the existing capacities and expansion plans under implementation, the capacity with the Integrated Steel Plants would increase to about 14.50 million tonnes.

5. Considering the crucial place which the iron and steel industry occupies in the country's economic development, programmes related to research and development activity for the steel industry are given priority. The Research and Development Organisation of Steel Authority of India Limited has been entrusted with the task of coordinated implementation of the R&D plans and various projects have been identified with the ultimate aim of achieving self-reliance through increased productivity, imports substitution, cost reduction and development of new processes and technologies in the manufacture of iron and steel.

6. In order to avail the advantages of lower capital investment, shorter gestation period, flexibility with regard to types of steel, possibilities of meeting regional demand, etc. emphasis has been given on the development of electric steel making capacity to supplement the availability of steel produced by the main Steel Plants. At present, there are 174 mini-steel plants holding licences/Letter of Intent with a total capacity of 4.64 million tonnes per annum of steel ingots/billets. Out of these, 159 plants with a total capacity of 4.15 million tonnes per year have already started commercial production. The estimated production during the current year is about 2.1 million tonnes. The industry produces mild steel as well as alloy, special and stainless steel.

7. In the Sixth Five Year Plan 1980—85, the main emphasis 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 plant at Visakhapatnam.

8. In the Sixth Five Year Plan document, demand of saleable steel in the country has been estimated at 12.70 million

tonnes by 1984-85 and 18.40 million tonnes by 1989-90, on the basis of consumption level of 8.0 million tonnes 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 million tonnes in 1979-80 to 11.50 million tones in 1984-85 and 17.40 million tonnes in 1989-90.

9. Important schemes under implementation/consideration are as follows :—

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

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

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

(iv) Modernisation of Tata Iron & Steel Company to increase the existing capacity of 2.0 million ingot tonnes to 2.16 million ingot tonnes. This modernisation scheme has since been completed. The capacity is further proposed to be expanded to 2.30 million tonnes of ingots through second phase of modernisation.

(v) Increase in the capacity of Alloy Steels Plant, Durgapur, from 1,00,000 tonnes to 1,60,000 tonnes of alloy steel ingots and ultimately to 2,60,000 tonnes of liquid steel under its expansion/modernisation programme. The first stage of 1,60,000 tonnes of alloy steel ingots has since been commissioned.

(vi) 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. The trial commissioning of the project has been done.

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

(viii) A task Force has been constituted on Bhilai and Bokaro Steel Plants to enable these plants to produce according to the installed capacity on sustained basis.

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

(x) 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.

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

10. Scheme-wise expenditure during 1982-83, anticipated expenditure during 1983-84 and proposed allocation during 1984-85 is shown in Annexure-I.

11. A Working Group on Iron and Steel has been constituted to prepare a long term profile for the development of steel industry upto 2000 A.D. Its broad terms of reference are :—

(a) 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.

(b) 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 to be furnished shortly.

ANNEXURE—I

SCHEME-WISE PROGRESS OF CAPITAL EXPENDITURE FOR CENTRAL SECTOR

(Rs. in crores)

Sl. No.	Organisation/scheme	Annual Expenditure 1982-83	Anticipated Expenditure 1983-84	Proposed Outlay 1984-85
1	2	3	4	5
	1. Steel Authority of India Ltd.			
	A. Bhilai Steel Plant			
	(i) *Continuing Schemes*			
	(a) 4 MT Expansion	167.28	121.31	145.00
	(b) Dalli Mechanised Mine	0.01	0.01	0.01
	(c) 2nd Sintering Plant	1.04	0.01	0.01
	(d) 8th Coke Oven Battery	..	0.01	0.01
	(e) Cold Dust Injection	1.68	2.34	2.50
	(f) Conversion of OH furnace to Twin Hearth Furnace	3.60	2.10	3.60
	(ii) *New Schemes*			
	(a) Power Plant No. 3	0.67	—	1.00
	(b) Plant Modernisation (BT EL)	0.01	0.10	0.10
	(c) Partial Brequetting of coal charging	..	0.75	2.75
	(iii) Additions, Modifications and Replacements	18.94	18.04	20.02
	(iv) Township	1.34	1.00	1.00
	Total—Bhilai Steel Plant	194.57	145.67	176.00
	B. Bokaro Steel Plant			
	(i) *Continuing Schemes*			
	(a) 1.7 MT Stage	1.28	0.66	0.72
	(b) 4 MT stage	139.38	119.90	100.00
	(c) Slag Granulation Plant	..	0.10	0.14
	(d) Captive Power Plant	38.71	27.44	11.00
	(e) Meghahatabura Iron Ore Project	14.13	15.96	12.50
	(f) Kiriburu Iron Ore Project	0.29	0.45	0.33

1	2	3	4	5
	(ii) *New Schemes*			
	(a) Roll Rehardening shop	2.59	0.73	0.51
	(b) Beyond 4 MT stage	0.50	0.13	..
	(iii) *Additions/Modifications and Replacements*	8.80	11.50	9.00
	(iv) Township	..	0.05	0.50
	(v) *R&D Feasibility Studies*			
	(a) Test Coke Oven Complex	..	0.50	2.00
	(b) Others	..	0.03	..
	(c) Rolling of stainless steel	..	0.25	0.30
	Total—Bokaro Steel Plant	205.23	177.70	137.00
	C. Durgapur Steel Plant			
	(i) *Continuing Schemes*			
	(a) Captive Power Plant	30.21	13.42	14.00
	(ii) *New Schemes*			
	(a) Modernisation of DSP StageI	0.13	0.70	1.00
	(iii) *Additions/Modifications and Replacements*	23.03	22.00	33.00
	(iv) *Township*	1.28	1.00	1.00
	Total—Durgapur Steel Plant	54.65	37.12	49.00
	D. Rourkela Steel Plant			
	(i) *Continuing Schemes*			
	(a) Modernisation of hot strip mills	0.15	0.30	0.30
	(b) Add. Naptha Reforming Unit	0.09	0.05	..
	(c) Silicon Steel Project	24.25	14.85	8.65
	(ii) *New Schemes*			
	(a) Coke Oven Battery 5 B	7.79	5.64	4.00
	(b) Second Captive Power Plant	10.66	23.67	55.00
	(c) Cement Plant	0.07	0.05	0.05
	(d) Modernisation of RSP	0.09	0.10	1.00
	(iii) *Additions/Modification and replacements*	31.31	20.00	20.00
	(iv) Township	1.51	1.50	1.00
	Total—Rourkela Steel Plant	75.92	66.16	90.00

1	2	3	4	5
E. Alloy Steel Plant				
(i) *Continuing Schemes*				
(a)	Expansion Stage I	0.37	0.09	0.20
(ii) *New Schemes*				
(a)	Modernisation of ASP expansion stage II	2.08	11.37	17.00
(iii) *Additions/Modifications and Replacements*		3.43	1.35	2.30
(iv)	Township	0.60	0.32	0.50
	Total—Alloy Steel Plant	6.48	13.13	20.00
F. Indian Iron & Steel Company Ltd.				
(i) *Continuing Schemes*				
(a)	Plant Rehabilitation Scheme	0.36	..	..
(b)	10 Coke Oven Battery	1.59	1.57	1.32
(c)	Departmentalisation of Mines	0.10	0.06	..
(ii) *New Schemes*				
(a)	Chasnalla Upper Seam Development	0.12	0.70	2.00
(b)	DG Sets for Chasnalla Burnpur Ropeways	0.03	0.05	0.10
(c)	Augmentation of Power supply of Jitpur	..	0.21	0.14
(d)	Reconstruction & Development of Chasnalla deep mines	..	..	..
(e)	Balancing facilities for Chasnalla Washery	..	0.17	1.35
(f)	Balancing facilities for Chasnalla-Burnpur Ropeway	..	0.01	0.01
(g)	Development of Ramnagore Colliery 8	..	0.01	0.01
(h)	Reconstruction and development of Jitpur Colliery	..	0.01	0.25
(i)	Sinter Plant including or Washing Plant at Gua	..	0.01	1.00
(j)	Rebuilding of No. 8 Coke Oven Battery	..	3.50	10.00
(k)	Modernisation & Development of Burnpur Steel Works	..	0.01	..
(l)	Captive Power plant	..	..	0.01
(m)	Tonnage Oxygen Plant	..	..	0.01

1	2	3	4	5
(n)	Modernisation of Kulti Works	..	0.01	0.05
(iii) *Additions/Modifications and Replacements*		11.07	8.00	10.00
(iv)	Township	1.98	1.00	1.50
(v)	R&D Feasibility studies	0.01	1.52	0.75
	Total—Indian Iron & Steel Co. Ltd.	15.26	16.84	28.50
IISCO STANTON				
(i)	Additions/Modifications	0.45	0.30	0.70
(ii)	Replacements		0.50	0.80
	Total—IISCO Stanton	0.45	0.80	1.50
H. Research & Development Centre				
(i) *Continuing Schemes*				
(a)	Laboratory Complex	4.98	4.00	2.45
(b)	Direct Reduction Process Development	0.43	0.60	0.60
(ii) *New Schemes :*				
(a)	Information & Documentation and Computer Centre	..	0.70	2.80
(b)	Demonstration Plant for Lime Dust injection	0.49	1.10	1.00
(c)	Pilot Test Coke Oven Complex	..	0.10	0.25
(d)	UNDP Assisted Project	..	0.05	0.25
(e)	Experimental Furnace at RSP	0.02	0.30	0.50
(f)	Experimental Electro-Slag Remelting unit	..	0.01	..
(g)	R&D Project including BTEC programme	0.38	1.10	1.50
(h)	SAIL CSIR Project	..	0.04	0.05
(i)	Beneficiation of coal	..	..	0.10
(j)	PTH Facility at RDCIS	..	0.15	0.25
(k)	Development & Lime Flour-spar Injection for Dephosphorisation of Steel at ASP	..	0.10	0.25
(l)	Air-conditioning of Computer Centre	..	0.05	0.25
(m)	Telephone Exchange for RDCIS	..	..	0.25
(n)	Misc. Capital Expenditure	0.30	..	0.20

1	2	3	4	5
	(o) Township	0.19	0.20	0.30
	(p) New Technology, INRED, KDRF process	..	..	5.00
	Total R&D Centre	6.79	8.50	16.00
	I. Salem Steel Plant			
	(i) *Continuing Schemes*			
	(a) Salem Steel Plant stage-I	9.29	8.45	3.96
	(ii) *New Schemes*			
	(a) ASP expansion linked at Salem	..	0.17	0.50
	(iii) *Additions/Modifications and Replacements*		0.18	0.25
	(iv) Township	..	..	0.28
	(v) R&D and Feasibility studies	..	..	0.01
	Total—Salem Steel Plant	9.29	8.80	5.00
	J. Central Marketing Organisation			
	(i) *Continuing Schemes*			
	(a) Home Sales	1.30	1.00	3.80
	(b) Transport and Shipping	1.74	1.07	0.50
	(ii) *New Schemes*			
	(a) Home Sales	0.12	0.82	..
	(b) Transport and shipping	..	0.34	0.10
	(iii) Additions/Modifications and Stock-yards etc.	..	0.68	2.10
	(iv) Office building	0.04	0.36	0.50
	(v) Residential Flats	0.02	0.73	0.50
	Total—Central Marketing Orgn	3.22	5.00	7.50

1	2	3	4	5
	K. Sail Corporate Office and Management Training Institute	0.10	1.25	2.00
	L. Visvesvaraya Iron & Steel Limited			
	(i) *New Schemes*			
	(a) Optimisation scheme stage-I (Phase I)	2.68	0.70	2.90
	(b) Optimisation scheme stage-I (Phase II)	..	..	0.10
	Total—VISL	2.68	0.70	3.00
	Total—SAIL	574.64	481.67	535.50
	2. BHARAT REFRACTORIES LIMITED			
	(i) *Continuing Scheme*			
	(a) Bhilai Refractory Plant	2.21	6.00	2.50
	(b) Expansion of Bhadaridah Refractory plant	0.45	0.55	0.25
	(c) Pithoragarh Magnesite Project	0.23	0.90	2.00
	(ii) *New Schemes*			
	(a) Central Calamation Plant	..	..	0.01
	(b) Sea Water Magnesite Project	..	..	0.01
	(iii) *Additions/Modifications and Replacements*			
	(a) Bhilai Refractory Plant	..	..	0.25
	(b) Bhadaridah Refractory Plant	0.14	0.12	0.20
	(c) Ranchi Road Refractory Plant	0.02	0.10	0.19
	(d) Corporate Office	0.01	0.05	0.05
	(e) IFICO	0.22	0.50	0.40
	(iv) Building and Township	0.17	1.13	1.09
	(v) R&D and Feasibility studies	..	0.05	0.05
	Total—Bharat Refractories Ltd.	3.45	9.40	7.00

1	2	3	4	5
3.	**RASTRIYA ISPAT NIGAM LIMITED**	293.58	437.00	480.00
4.	**VIJAYANAGAR STEEL LIMITED**	1.30	1.29	2.00
5.	**NEELACHAL ISPAT NIGAM LIMITED**	1.19	1.00	2.00
6.	**KUDREMUKH IRON ORE CO. LIMITED**			
	(i) *Continuing Schemes*			
	(a) Kudremukh Project Proper	9.04	2.47	..
	(ii) *New Schemes*			
	(a) Mangalore Pellet Plant	17.34	52.58	15.75
	(iii) *Additions/Modifications and Replacements*	0.46	1.16	2.33
	Total—KIOCL	26.84	56.21	18.08
7.	**NATIONAL MINERAL DEVELOPMENT CORP.**			
	(i) Continuing Schemes	0.35	0.25	0.82
	(ii) New Schemes	4.65	8.14	14.18
	(iii) Additions/Modifications/Replacements	4.16	5.75	8.00
	(iv) Exploration & Feasibility Studies & Feasibility	0.47	0.30	0.20
	(v) R&D Schemes	0.01	0.06	0.30
	Total—NMDC	9.64	14.50	23.50
8.	**HINDUSTAN STEELWORKS CONSTRUCTION LTD.**			
	(i) Continuing Schemes/Projects of India	4.03	3.49	4.00
9.	**SPONGE IRON INDIA LTD.**			
	(i) *Continuing Schemes*			
	(a) Demonstration Plant Project	0.80	..	..
	(ii) *New Schemes*			
	(a) SIIL Expansion to 60,000 TPY	0.17	2.50	3.25
	(b) Waste Heat recovery and utilisation of waste products	..	..	0.05
	(iii) Additions/Modifications and Replacements	0.30	0.30	0.15
	(iv) Township	..	0.05	0.25
	(v) R&D and feasibility studies	0.05	0.15	0.30
	Total—Sponge Iron India Ltd.	1.32	3.00	4.00

1	2	3	4	5
10.	**MANGANESE ORE (INDIA) LTD.**			
	(i) New Schemes	...	0.30	0.76
	(ii) Additions/Modifications and Replacements	1.27	1.00	1.54
	(iii) R&D and feasibility studies	0.04	0.20	0.20
	Total—MOIL	1.31	1.50	2.50
11.	**METALLURGICAL & ENGINEERING CONSULTANTS (INDIA) LIMITED.**			
	(i) Continuing Schemes	0.60	2.19	3.35
	(ii) New Schemes	1.66	0.21	0.15
	Total—MECON	2.26	2.40	3.50
12.	**MINERAL DEVELOPMENT BOARD**			
	(i) Continuing schemes	0.32	0.50	0.70
13.	**METAL SCRAP TRADE CORPN. LTD.**			
	(i) Continuing Schemes FSN Ltd.	0.45	..	..
	(ii) New Schemes	..	..	1.00
	Total—MSTC	0.45	..	1.00
14.	**LOANS TO GOVERNMENT OF KARNATAKA**			
	(i) Continuing Schemes	0.84	4.00	1.00
15.	**LOANS TO GOVT. OF M.P.**			
	(i) Continuing Schemes	0.50	0.30	1.00
16.	**LOANS TO GOVT. OF BIHAR**			
	(ii) Continuing Schemes	0.10	2.00	1.00
	Total—Deptt. of Steel	921.77	1018.26	1086.78

PART II

CHAPTER I

PRODUCTIOI.

Iron and Steel

The six integrated steel plants SAIL and TISCO produced 7.12 million tonnes of ingot steel during April, 1983 to February, 1984. This represents 68% of capacity utilisation. SAIL plants produced 5.34 million tonnes of ingot steel representing 62% capacity utilisation.

2. The six integrated Steel Plants produced 5.65 million tonnes of Saleable Steel during April, 1983 to February, 1984 representing 67% capacity utilisation. SAIL plants produced 4.2 million tonnes of saleable steel representing a capacity utilisation of 64%.

3. The production could have been better but for the basic input constraints *viz.*, power, coking coal, and to a limited extent rail transport which continued to affect performance this year as well. The worst affected was Rourkela Steel Plant which was subjected to severe restrictions from OSEB.

4. *Measures taken to step up Production*

To secure better supplies of coking coal and power close liaison continues to be maintained with major input supplying agencies like Coal India Ltd., DVC, State Electricity Boards and the Railways. Infrastructure Coordination Committees have been set up at the Plant level which include representatives of Plants, Railways, Coal India Ltd. and concerned power supplying agencies as members to sort out problems of input supplies. Captive power generation is being augmented at the SAIL Steel Plants by 600 MW, which, when commissioned in phases between 1984—86, would take care of the power requirement of these plants upto the mother mill stage.

Equipment maintenance has also received close attention during the year. Import substitution efforts intended to promote

self reliance in respect of stores and spares had till March, 1983 helped to indigenise nine thousand items resulting in foreign exchange savings of about Rs. 34 crores.

5. Production of saleable steel from Alloy Steels Plant during 1982-83 was 46,800 tonnes. Salem Steel Plant produced 6,750 tonnes of saleable steel during 1982-83. Salem Steel Plant produced 5990 tonnes of Saleable steel from April 1983 to February 1984, and expects to close the year with the total production of 9,500 tonnes.

6. The ministeel plants produced 20.40 lakh tonnes of steel ingots during 1982-83. The production during April—December 1983 was 15.16 lakh tonnes (provisional). The re-rolling industry which is the major source of supply of bars and rods achieved a production of 15.30 lakh tonnes in 1982-83. They are expected to produce 17.56 lakh tonnes of rolled products during 1983-84.

7. The production performance of wire drawing industry as a whole showed a marked decline mainly due to lack of demand. As against a licensed capacity of about 8.2 lakh tonnes per annum in the organised sector, the production of wires in 1982-83 was 3.18 lakh tonnes. They are expected to produce 2.58 lakh tonnes in 1983-84.

8. Production of tin plates by the two units licensed to produce tinplates/Tin Free Steel during 1982-83 was 55,000 tonnes. The production is expected to be 78,000 tonnes during 1983-84.

9. The organised sector produced 1.36 lakh tonnes of steel strips in 1982-83 and are expected to produce 1.56 lakh tonnes in 1983-84.

10. The production of Ferro Alloys during 1982-83 was 2.25 lakh tonnes as against 3.06 lakh tonnes in 1981-82

11. In addition to the integrated steel plants, there are three pig iron manufacturing units which are in production and another unit has been issued letter of intent. Production of pig iron by the units in the private sector in 1982-83 was 82,000 tonnes. Production during 1983-84 is estimated at 70,000 tonnes.

12. *Raw Materials*

National Mineral Development Corporation Limited

12.1 During 1983-84 the company has planned a production of 1.35 million tonnes of iron ore concentrate. The mines of NMDC produced 56.38 lakh tonnes of lumps iron ore and 26.62 lakh tonnes of fine ore during 1982-83. During April 1983 to February 1984 this Corporation produced 70.21 lakh tonnes of lumps and fines taken together.

Kudremukh Iron Ore Company Limited

12.2 The Kudremukh Iron Ore Project with a capacity of 7.5 million tonnes/year iron ore concentrate was set up to meet the long term requirements of Iran. The project is capable of producing at its designed capacity. In view of the inability of Iran to lift the contracted quantities of concentrate, the company is restricting its production and trying to find other buyers. The commercial production at the project commenced in October, 1981.

Bharat Refractories Limited

12.3 Bharat Refractories Ltd. and its subsidiary IFICO produced 56,251 tonnes of refractory bricks during 1982-83 and are expected to produce 69,481 tonnes in 1983-84. During April 1983 to February 1984 the production of bricks was 6,528 tonnes.

Manganese Ore (India) Limited

12.4 Manganese Ore (India) Ltd., the largest producer of manganese ore in the country, produced 4.71 lakh tonnes of manganese ore in 1982-83 exceeding the target of 4.65 lakh tonnes. During April 1983 to February 1984, the company produced 4.02 lakh tonnes of manganese ore. The target for 1983-84 is 4.25 lakh tonnes.

Sponge Iron India Limited

12.5 Sponge Iron India Ltd. at Kothagudem, A.P. produced 23,430 tonnes of Sponge Iron in 1982-83 which represents 78% of capacity utilisation. In 1983-84 the target has been fixed at 28,500 tonnes aiming at 95% capacity utilisation.

CHAPTER II

DISTRIBUTION AND SUPPLY

2.1 *Distribution of Steel*

2.1.1 The position of easy availability of steel created during 1982-83 continued during the year 1983-84 also and the indigenous availability of pig iron also became very comfortable during the year 1983-84. The total domestic availability of steel was 6.134 million tonnes during April—December, 1983 which was less than the availability of 7.76 million tonnes during April—December, 1982. The main producers have been able to reduce their stocks at plants and homesales stockyards from an opening balance of 1.55 million tonnes on 1-4-1983 to 1.02 million tonnes on 1-3-1984.

The following liberalisations introduced in the JPC distribution Guidelines in the wake of easy availability from 1981-82 have been continued during the current year also :

(1) Relaxation of end use restrictions under Clause 7, of Iron and 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'.

(4) 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 Distribution Policy of SAIL, doing away with the system of registered traders and throwing open sale to all those interested in trading in steel. Under this Policy, the details of material available for sale are exhibited on the notice boards of the Branch Sales Offices of SAIL. Any trader can apply for

material, provided the quantity is not less than one truck load.

(6) The scheme of supply of carbon steel, hot rolled coils/skelp, CR/CRCA Sheets/Coils and cold rolled stainless/heat resisting steel coils/sheets to import licence holders from out of indigenous production of SAIL plants. The licence holders wanting these items are required to approach SAIL for supplies and, in case SAIL is unable to meet the requirements, it issues 'No Objection Certificate' for imports.

During the current year, SAIL has introduced a few more schemes for improving availability, increasing the off-take, sales promotions and stock reduction :

(1) An Advance Package Scheme under which steel items are identified as slow moving and fast moving; supplies are made in a way so as to make good the likely loss on slow moving items by supply of fast moving either simultaneously or subsequently.

(2) Advance Booking of orders from all its consumer in respect of items having inadequate orders for a rolling programme.

(3) Associating re-rollers for production of light sections of structurals under which tested billets are supplied to priority sectors who can have these converted into lighter sections of structurals required by them on payment of remuneration fixed by SAIL.

(4) Associating re-rollers of bars and rods to supplement SAIL's production of these items under which re-rollable material is supplied to identified re-rollers and bars and rods so produced by them are taken up by SAIL for marketing. The rollers remuneration is paid in kind.

(5) Inter-stockyard transportation of certain categories of steel at SAIL's cost subject to prior sale in order to ensure better consumer satisfaction and to remove imbalances in regional availability. The Marketing Strategy adopted for sales promotions and stock reduction comprises :

(a) Credit facilities have been extended in respect of slow-moving items ;

(b) The monthly production programme is drawn up based on firm demand of the market. The programme is continuously reviewed;

(c) Cash credit limits have been fixed for each plant to reduce inventories to the utmost extent possible;

(d) The number of outlet points has been increased by about 40 Nos. by introducing conversion scheme under which billets supplied by SAIL are converted into bars and rods;

(e) Package deals have been introduced;

(f) Customer contact has been increased and customer complaints are attended to promptly by further delegating of power to field officers ;

(g) The items which have deteriorated in stock are disposed of by calling bids through public notices;

(h) Certain minor price adjustments in such items as blooms and slabs have been made to increase their off-take ;

(i) Inter-stockyard transfers have been permitted to hasten supplies to customers;

(j) The marketing organisation has been further strengthened in the plants and regions to facilitate the marketing of products and to meet customers' demand ;

(k) *Curtailment of imports* : As against canalised import of 1.3 million tonnes in 1982-83, canalised imports in 1983-84 are expected to be only 0.5 million tonnes. Domestic production of several critical items such as LPG sheets, DD and EDD CR Sheets etc. has been increased to better match demand ;

(l) Supply of items (like CR Coils/HR coils and stainless steel) to valid import licence holders at international prices.

2.1.2 The JPC centrally allocates iron and steel to Priority sectors under Status Group 'A' like Defence, Irrigation, Power, Small Scale Industries Corporations, P&T, Railways and EEPC Units. In view of the continued easy availability of iron and steel the JPC allocations have been restricted to a few selected

sections of structurals and plates 22 mm and above and big iron. For the remaining items, they have to register their requirements with main producers. Consumers other than those in Status Group 'A' have to register their requirements with main producers/their branch sales offices for supplies of all items.

2.1.3 The requirements of 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. However, small scale units having an off-take of more than 100 tonnes or more during any quarter during the past 5 years have the option of receiving supplies either from main producers or through their respective Small Industries Corporations. The option given to small scale units located in the State of J&K and Union Territory of Delhi to receive their supplies either through SSICs or directly from the main producers has been continued during this year.

2.2 *Distribution of Pig Iron*

2.2.1 The Iron and Steel Controller/Join Plant Committee makes allocation of pig iron to consumers under State Group 'A' Railway Sleeper Manufacturers and Spun Pipe Manufacturers taking into account their past off-take, projected demands and availability. DGTD units having foundries obtained their requirements directly from the plants/stockyards. The entitlement formula of individual units is "Best year's off-take during the five years from 1976-77 to 1980-81 or 20% of licensed capacity whichever is higher". Essentiality Certificates issued in favour of foundries by Government Departments/Undertakings are also entertained by the stockyards.

2.2.2 Supplies of pig iron to the SSI units continue to be routed through the SSI Corporations except in the State of Tamil Nadu where the State SSI Corporation is not handling the material. Registered Associations/Co-operative Societies can also 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 their State Corporations allocation.

2.3 *Small scale Industries Corporations*

2.3.1 Small Scale Industries Corporations get rebates ranging from Rs. 140 to Rs. 200 per tonne on supplies of steel from indigenous sources to cover their handling expenses. No rebate

is given for pig iron. Mostly indigenous pig iron is supplied to the Corporations directly from the plants on JPC rail head price which is less by Rs. 100 per tonne than the stockyard price and the corporations are required to sell it to the SSI units at the corresponding price of the main producers' stockyards. They are expected to cover their handling charges for pig iron from this difference of Rs. 100 per tonne. Imported pig iron to them continued to be supplied at stockyard prices. For purposes of rebates, the allocations of steel during 1983-84 have been kept at 566,100 tonnes *i.e.* the same level as for 1982-83.

2.3.2 Pig iron allocation to the SSI Corporations has been increased to 711,500 tonnes (511,000 tonnes from out of indigenous production and 200,000 tonnes from out of imports) against the allocation of 584,000 tonnes during 1982-83. Additional requirements of the SSI Corporations if any, will also be met from the improved indigenous production. During the period April 1983 to January, 1984, the total quantity of 507,911 tonnes has been supplied to these Corporations. The supplies would have been higher but for non-lifting against the offers made.

2.4 *Distribution Net Work*

2.4.1 SAIL including IISCO have a net work of 53 stockyards having 60 delivery points throughout the country. 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 coordination between the producers and the Railways. The producers are also reimbursed the actual cost of transportation by alternate routes like road/river by the JPC.

2.5 *Distribution by other Steel Producers*

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

2.6 *Pricing*

2.6.1 As a result of the decision taken by Government in April 1982, the prices of iron and steel items are fixed and announced by the Joint Plant Committee without any approval from Government. This ended the earlier practice of informal regulation of prices. During the year, JPC has announced price changes twice. The prices of iron and steel items were increased with effect from 1-4-1983 to take care of the changes in the freight classification/freight rates announced by the Railways during the previous year. The price of pig iron was increased by Rs. 105 per tonne and prices of steel items increased by Rs. 160 per tonne.

2.6.2 With effect from the midnight of 23rd/24th July, 1983, JPC revised the prices of iron and steel items. This increase was due to increase in the cost of production caused by increases in the input costs and the higher wage bill due to new wage agreement.

2.6.3 Iron and Steel materials are supplied to by the main producers at a uniform price throughout the country. Similariy, sales through stockyards are also at uniform prices throughout the country. For this purpose, a Freight Equalisation Fund is operated and maintained by the JPC. Presently the standard freight element for steel is Rs. 443 per tonne and Rs. 320 per tonne for pig iron.

2.6.4 On the recommendations made by the National Transport Policy Committee headed by Shri B. D. Pande, Government has taken a decision, in principle, to phase out freight equalisation in respect of industrial commodities including iron and steel. For iron and steel this will, however, be done over a suitable period of time so that the industries concerned have sufficient time to adjust themselves to the situation.

2.7 *Imports/Exports*

2.7.1 The Import Policy for 1983-84 was formulated keeping in view the need for ensuring easy availability of raw materials required by genuine industrial users while guarding that excessive imports do not take place to the detriment of indigenous production. Import of carbon steel plates to IS-2062 specifications was canalised through SAIL during the year.

2.7.2 Import of most of the carbon steel items and pig iron continued to be canalised through SAIL. Stainless steel sheets, strips, plates and coils continued to be canalised through MMTC. The MSTC continued to be the canalising agency for import of steel melting scrap/re-rollable carbon steel scrap, sponge iron and old ships for breakings.

2.7.3 The canalising agencies continued to enjoy the facility for import of canalised items under OGL. The flexibility arrangements as were prevalent in the past for import of items in the list of Limited Permissible items and direct import of canalised items were continued.

2.7.4 The canalised imports of steel during the year were substantially reduced. Imports are limited mainly to flat products *viz.*, plates, sheets and input material for tinplate production. During the year, canalised import of steel will be about half a million tonnes against 1.3 million tonnes during 1982-83. The enclosed statement (2A) gives itemwise imports of pig iron and steel by SAIL during 1981-82, 1982-83 and April—December, 1983. The enclosed statement (2B) gives figures regarding import of stainless steel plates, sheets, strips/coils through MMTC during 1981-82, 1982-83 and April—December, 1983.

2.7.5 The requirements of exporters of engineering goods are given highest priority alongwith other nationally important sectors like Power, Defence, Irrigation. During 1982-83, 82,195 tonnes of pig iron and 93,432 tonnes of steel were supplied to these units by the main producers. A quantity of 262,000 tonnes of pig iron and 880,400 tonnes of steel has been allocated to this sector from domestic sources during 1983-84 to help meet the export target of Rs. 1950 crores. Supplies during April—Sept., 1983 have been 10,476 tonnes of pig iron and 26,348 tonnes of steel; offers have not been availed by certain units.

2.7.6 Permissible exports of iron and steel items are canalised through SAIL. During the year, SAIL has launched vigorous drive for export of available items like billets, bars and rods, HR/CR Coils/Sheets. Exports during 1982-83 were 11,000 tonnes valued at Rs. 1.99 crores and during April—Dec., 1983, these have been 15,000 tonnes valued at Rs. 3.26 crores.

STATEMENT 2A

IRON AND STEEL IMPORTS DURING 1981-82, 1982-83 AND APRIL—DECEMBER, 1983 BY STEEL AUTHORITY OF INDIA LIMITED

Quantity : In tonnes
Value : In Rs. lakhs

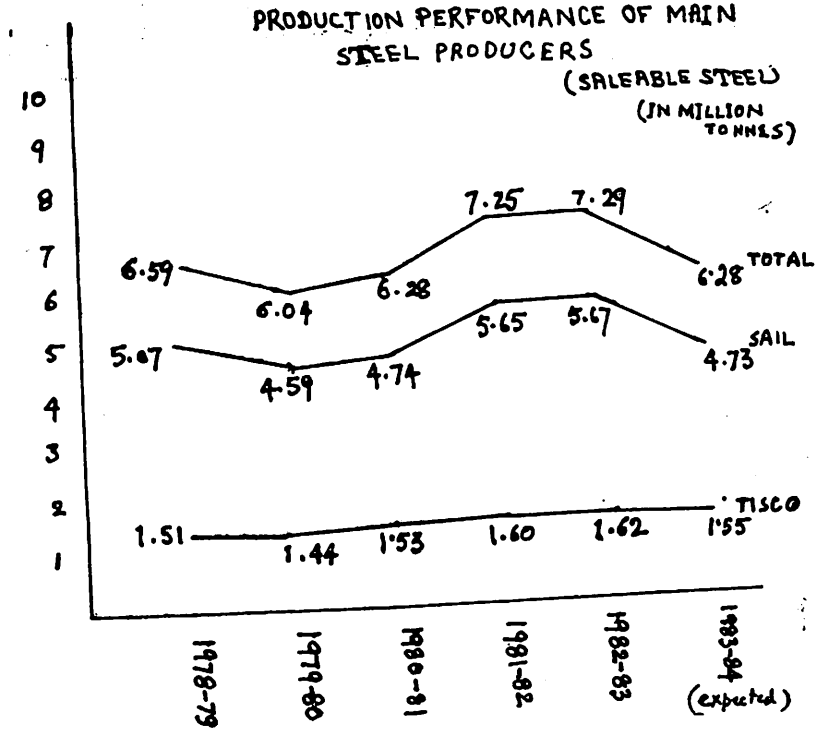
Sl. No.	Category	1981-82		1982-83		1983-84 (April—December 1983)	
		Qty.	Value	Qty.	Value	Qty.	Value
A.	PIG IRON	117128	1401.45	426842	6361.60	169269	2517.58
B.	STEEL						
1.	Spade Ingots	564	47.63	1998	52.95	—	—
2.	Slabs/blooms	18414	620.84	43678	1007.41	6994	73.77
3.	Billets	119985	3046.36	—	—	—	—
4.	Bars & Rods	62351	1723.03	44383	1758.24	14491	6256.99
5.	MS/HT Plates	200540	6472.21	214903	7164.84	58697	1701.35
6.	BQ Plates	—	—	3904	134.80	7756	264.53
7.	SBQ Plates	3853	160.84	20257	749.54	11541	388.27
8.	Structurals	308950	9095.03	682343	22322.90	93293	2925.50
9.	HR Sheets/ Coils	124423	3774.88	25520	1116.42	23346	829.31
10.	HR/CR Strips	6577	326.53	2255	146.10	1259	94.78
11.	CR Sheets/ Coils	57909	2298.76	77785	3381.82	69135	2694.55
12.	Tin Mill Black Plate	57993	2956.01	65337	3348.21	132334	6482.08
13.	Tin plate Waste/Waste	9184	378.92	267	9.55	—	—
14.	Tin Plate Prime	22277	1419.06	16675	1104.98	—	—
15.	Elec. Steel Sheets						
	CRGO/	28202	2773.18	40695	3870.54	32135	3170.72
	CRNGO	372	22.43	—	—	—	—
	HRNGO						
16.	GP/GC Sheets	24968	1069.73	74252	3744.91	—	—
17.	Stainless/ Spl. Steel	598	123.67	849	117.70	611	50.13
18.	ERW Pipes	961	46.84	—	—	—	—
19.	Rails	—	—	2062	85.13	—	—
	Total Steel.	1048121	36355.95	1317163	50116.04	451592	19300.98
	Total Iron and Steel (A+B)	1165249	37757.40	1744005	56477.64	620861	21818.56

STATEMENT 2B

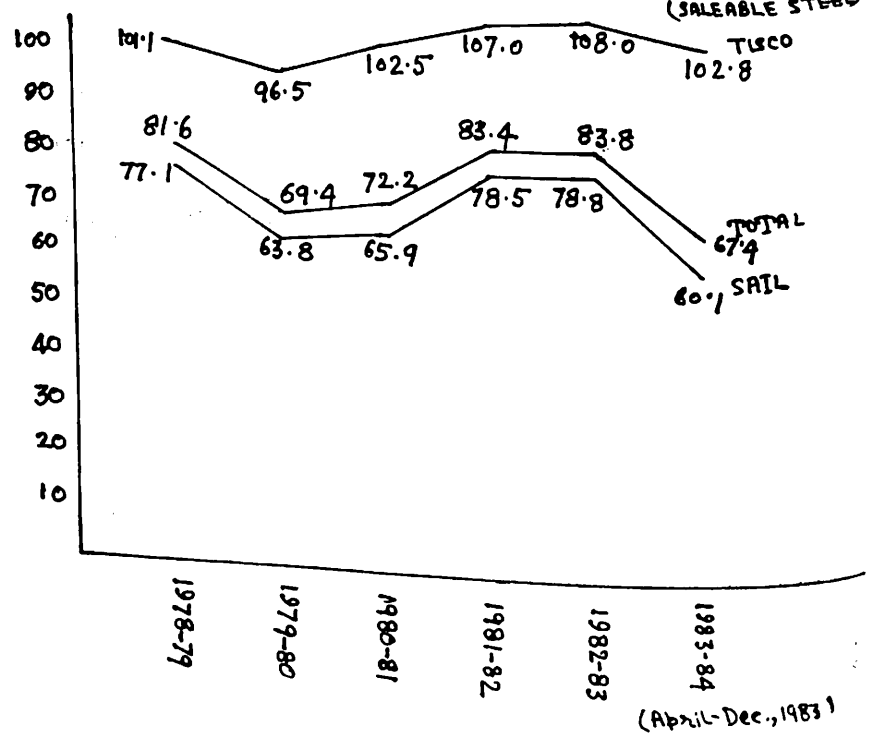
Quantity : Tonnes
Value : Rs. lakhs

IMPORTS BY MMTC DURING 1981-82, 1982-83 AND APRIL—SEPTEMBER, 1983

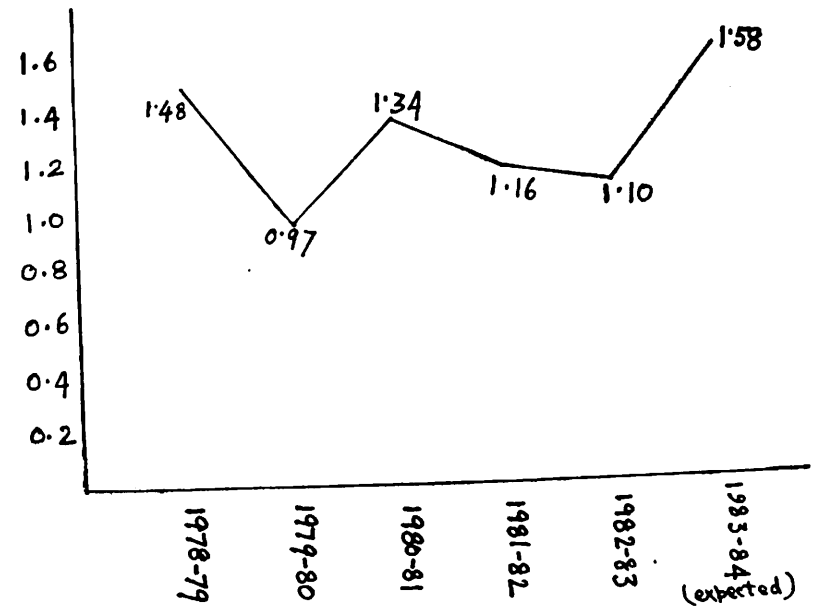
S. No.	Category	1981-82	1982-83	1983-84 (April—Sept. '83)
1.	Thinner Gauge Sheets	2962 MT	1050 MT	—
2.	Thicker Gauge Sheets/Plates	2389 ,,	2417 ,,	1162 MT
3.	Hot Rolled Strips	3275 ,,	—	—
4.	Other Strips	285 ,,	615 ,,	18 ,,
5.	Value in lakhs (Rs.)	1582	750	207

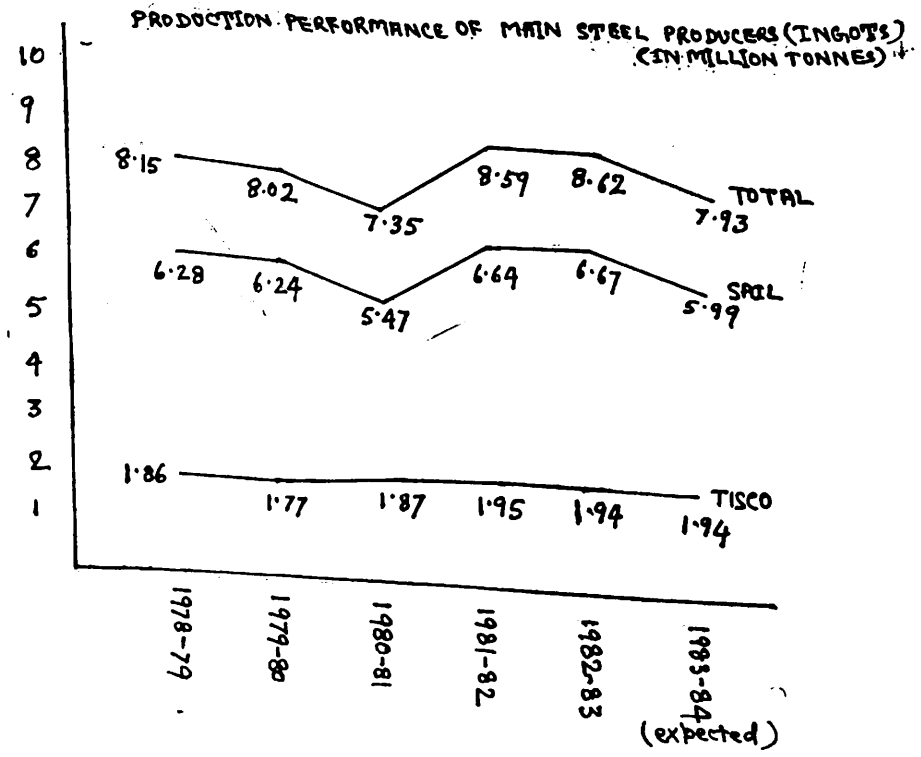


PERCENTAGE CAPACITY UTILISATION OF MAIN STEEL PRODUCERS
(SALEABLE STEEL)



PRODUCTION PERFORMANCE OF SAIL (Pig IRON)
(IN MILLION TONNES)





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.

Performance 1982-83

3.1.2 The authorised capital of SAIL remained unchanged at Rs. 4,000 crores. The paid up share capital of Rs. 3,177.16 crores excluding share money of Rs. 43.93 crores pending allotment as on 31st March, 1982 was raised to Rs. 3,221.09 crores as on 31st March, 1983 (excluding share money pending allotment of Rs. 17.22 crores).

3.1.3 During 1982-83, loans amounting to Rs. 0.80 crore were advanced to the Company by the Government. The total borrowings from Government of India as on 31st March, 1983 amounted to Rs. 938.77 crores as against Rs. 1,035.52 crores on the same day last year. The Company also received a loan of Rs. 298.12 crores from the Steel Development Fund (SDF). The total borrowings from SDF on 31st March, 1983 were Rs. 708.96 crores. The amount of fixed and cumulative deposits with the Company under the Public Deposit Scheme at the close of the year 1982-83 was Rs. 51.21 crores.

Some of the major investments of the Company as on 31st March, 1983, were as follows :

Indian Iron & Steel Co. Ltd.	Rs. 7,468 lakhs
Visvesvaraya Iron & Steel Ltd.	Rs. 1,727 lakhs
North Bengal Dolomite Ltd.	Rs. 12 lakhs
Belpahar Refractories Ltd.	Rs. 112 lakhs
Almora Magnasite Ltd.	Rs. 28 lakhs
Indian Potash Ltd.	Rs. 2 lakhs

The gross turn over of the Company during 1982-83 was Rs. 3,032.66 crores compared to Rs. 2,641.11 crores during the previous year. This includes sale of imported iron and steel amounting to Rs. 616.08 crores. The gross loss before providing for interest on fixed loans was Rs. 14.59 crores as compared to a profit of Rs. 108.12 crores in 1981-82. SAIL incurred a net loss of Rs. 105.76 crores in 1982-83 as against the net profit of Rs. 39.17 crores in the previous year. The working results of the units of the Company are :

	(Rs. in crores)
1. Bhilai Steel Plant	(+) 19.95
2. Durgapur Steel Plant	(—) 44.23
3. Rourkela Steel Plant (including Fertilizer Plant)	(—) 74.99
4. Bokaro Steel Plant	(+) 18.09
5. Alloy Steels Plant	(—) 15.31
6. Salem Steel Plant	(—) 14.21
7. Corporate Office (including CCWO)	(+) 4.94
Net Loss	—)105.76
8. IISCO	(—) 71.05

Production Performance

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

3.1.5 The production this year was higher by 0.57 per cent in the case of ingot steel and 0.35 per cent in the case of saleable steel as compared to the previous year (1981-82) and was the best over achieved by the Company's Steel Plants. In terms of capacity utilisation, the production during 1982-83 represents 71.1% of capacity utilisation for ingot steel and 78.8% for saleable steel.

3.1.6 Production performance of SAIL's integrated steel plants during April 1983—February 1984 is as follows :

('000 tonnes)

	Ingot Steel	Saleable Steel	Pig Iron
Annual target	5992	4731 (Plan)	1587
Plan for April '83—Feb '84	5457	4278	1395
Actuals April '83—Feb. '84—	5338	4200.2	1283.1

3.1.7 The production could have been better but for the basic input constraints—*viz.*, power, coking coal (quality and quantity) and to a limited extent, rail transport which continued to affect performance this year as well. The worst affected was Rourkela Steel Plant which was subjected to restrictions from OSEB throughout the year, this being particularly severe in the first two quarters.

Measures taken to step up production

3.1.8 To secure better supplies of coking coal and power, close liaison continues to be maintained with major input supplying agencies like Coal India Limited, DVC, State Electricity Boards and the Railways. Infrastructure Co-ordination Committees have been set up at the plant level which include representatives of Plants, Railways, Coal India Ltd. and concerned power supplying agencies as member to sort out problems of input supplies. Captive power generation is being augmented at the Steel Plants by 600 MW, which, when commisisoned in phases between 1984—86, would take care of the power requirements of these plants upto the mother mill stage. Equipment maintenance has also received close attention during the year. Import substitution efforts intended to promote self-reliance in respect of stores and spares had till March 1983 helped to indigenise 9000 items resulting in foreign exchange savings of about Rs. 34 crores.

3.1.9 Alloy Steels Plant produced 46,800 tonnes and Salem Steel Plant 6,750 tonnes of saleable steel respectively during 1982-83.

Development Schemes

3.1.10 Major events of the year under consideration were :—

(a) Hot trial runs of the heavy plate section in Bhilai's New Plate Mill in March 1983;

(b) First of the two 300-tonnes converters in Bokaro's second Steel Melting Shop was commissioned in June, 1983;

(c) Stage-I expansion of Alloy Steels Plant raising its annual capacity to 160 thousand tonnes of ingots and 103 thousand tonnes of saleable steel was formally inaugurated in October, 1982; and

(d) Stage-I of Salem Steel Plant with an installed capacity for rolling of 32 thousand tonnes of cold rolled stainless steel sheets and coils was substantially completed in September, 1982.

(i) New assets worth Rs. 280.44 crores, including social facilities costing Rs. 18.02 crores, were capitalised during the year 1982-83.

(ii) It is expected that the first phase of the 4 million tonne expansion of Bhilai Steel Plant comprising LD converter shop, concast shop and plate mill alongwith associated facilities would be completed progressively during 1984 and 1985 and Phase II, which includes 9th coke oven battery and 7th blast furnace complex, during 1986.

(iii) The project for experimental coal dust injection in blast furnace No. 2 of Bhilai Steel Plant is due to be completed in March 1984, conversion of No. 10 open hearth furnace into twin-hearth furnace in September, 1984 and the scheme for partial briquetting of coal charge in January 1987.

(iv) The 4 million tonne expansion at Bokaro Steel Plant also has advanced with hot trial runs of the first 300 tonnes converter in June 1983. The second converter is under-going hot trial run. According to the present indications, it is expected that the other remaining major units, that is, 7th coke oven battery and 5th blast furnace, will be completed in 1984. The second cold rolling mill is expected to be completed during 1986. Meghahatuburu Iron Ore Project designed to meet requirements of Iron Ore for 4 million tonne stage of Bokaro Steel Plant is now likely to be completed by June 1984.

(v) Schemes for technological upgradation and modernisation of the Durgapur Steel Plant and Rourkela Steel Plant have been formulated.

(vi) Silicon Steel Project is under commissioning in Rourkela Steel Plant to produce 37,500 tonnes of cold rolled grain oriented and 36,000 tonnes of non-grain oriented electrical sheets per year. Conceived as a major product diversification thrust, this will also save considerable foreign exchange for the country. The additional half coke oven battery No. 5B at Rourkela was commissioned on 27th December, 1983.

(vii) The Stage-II of Alloy Steels Plant with the object of updating technology and improving its economic viability as

also to provide an indigenous source of supply of hot rolled stainless steel bands for Salem Steel Plant is to be completed during 1985-86. This will raise crude steel capacity of Alloy Steels Plant to 260 thousand tonnes per year.

(viii) To handle and process hot rolled stainless steel coils to be indigenously available from Alloy Steels Plant/Bokaro Steel Plant route, additional facilities are being planned at Salem Steel Plant.

(ix) Schemes for addition to captive generation capacities in the integrated plants to meet the needs atleast upto the mother mill stage are in different stages of implementation. The 3×60 MW Power plant at Bokaro has made sufficient progress with civil and structural jobs. Equipment erection is also proceeding apace. All the three units are likely to be completed during 1984 and 1985. The 2×60 MW power plant at Durgapur is also in progress. The units are expected to be commissioned during 1985. Orders for the main plant and equipment for the 2×60 MW plant for Rourkela have been placed. The site works have started. The plant is expected to be commissioned during 1986. The Government have also sanctioned the 3×60 MW captive power plant for Bhilai Steel Plant in June 1983.

Personnel

3.1.11 The total number of employees of the Company and its subsidiaries (including IISCO) as on 31st December, 1983 is given below :—

Group	Total No. of employees as on 31-12-83	Scheduled Castes	Scheduled Tribes	Women employees
A. SAIL				
Group 'A'	15782	304	130	253
Group 'B'	16741	403	252	770
Group 'C'	165787	19749	18121	9272
(Excluding sweepers)				
Group 'C' (Sweepers only)	4540	3588	245	984
Total (A)	202850	24044	18748	11279

1	2	3	4	5
B. SUBSIDIARIES				
Group 'A'	1672	29	7	27
Group 'B'	2948	145	20	23
Group 'C'	38710	5667	2161	1369
(Exluding sweepers) Group 'C' (Sweepers only)	824	822	—	194
TOTAL (B)	44154	6663	2188	1613
GRAND TOTAL (A + B)	247004	30707	20936	12892

NOTES : 1. This excludes temporary, casual/NMR workmen.

2. This includes manpower in respect of Meghahatuburu and Kiriburu Mines of Bokaro.

Scheduled Castes and Scheduled Tribes

3.1.12 The Presidential directive on reservations for scheduled castes and scheduled tribes in recruitment and promotion are being fully implemented in the steel plants and units. At the end of the year 1983, employees belonging to scheduled castes constituted 11.85 per cent and of scheduled tribes 9.24 per cent of the total manpower in respect of SAIL against the respective reservation of 15 per cent and 7.5 per cent prescribed under the directive. Various incentives and relaxations are being extended to further improve their representation in the services of the Company. Reservation for ex-servicemen and dependents of those killed in action in the prescribed categories of posts is being provided.

Industrial Relations

3.1.13 Regular consultations with the representative of workers have led to better climate for industrial relations. The total mandays lost during April—December, 1983 were 13243 due to IR problems compared to 10239 for the period April—December last year and 24131 accounted for Political Bandhs alone during the current year.

Worker's participation in management

3.1.14 SAIL Steel Plants have already 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 new Wage Agreement lasting for 4 years was concluded at New Delhi on 25th May, 1983. It is recognised by both the parties that full cooperation for maintaining discipline and optimising production and productivity is essential for the smooth and efficient functioning of the steel plants. The parties resolve that all disputes affecting industrial relations shall be discussed mutually and settled through peaceful and constitutional means and they will spare no pains to achieve these objectives.

Safety measures

3.1.15 There are Standing Committee 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, 1982 and 1983 was as follows :—

	1981	1982	1983
No. of reportable accidents	1644	1450	1439
No. of fatal accidents	22	17	28

New Wage Agreements

3.1.16 The new wage agreement concluded in May 1983 by the National Joint Committee for Steel Industry ensures higher wages and better benefits and working conditions for workers of the steel industry. The significant features of the agreement are that workers have agreed with the Management to maintain industrial peace and harmony, to make every efforts to achieve optimum production consistant with safety, health and inputs and to make the joint efforts continuously to improve operational

efficiency. Apart from the wage matter, the National Committee also undertakes discussions on important problems pertaining to marketing, financial management, welfare, etc.

The revised salary structure and benefits for executives have also come into effect from 1st August, 1982.

Such a participative approach has led to marked improvements in environment. There were hardly any strains in industrial relations during the year with the loss of mandays during the year being the lowest for any year so far. The employees have responded admirably to meet situations arising from critical input shortages.

PRODUCTION PERFORMANCE OF STEEL PLANTS
1978-79 — 1983-84

Plant Products	1978-79	1979-80	1980-81	1981-82	1982-83	1983-84 upto Feb. '84	Anticipated 1983-84
1	2	3	4	5	6	7	8
INGOT STEEL							
— BSP	2200	2108	2041	2115	2130	1662.3	1800
— DSP	945	882	741	930	952	726	850
— RSP	1319	1268	1165	1203	1144	975.2	1064
— BSL	1195	1426	923	1792	1829	1489.8	1650
— IISCO	628	565	609	600	624	484.7	628
Sub-Total	6287	6249	5479	6640	6679	5338.0	5992
— TISCO	1865	1779	1874	1956	1946	1780.0	1940
TOTAL	8150	8028	7353	8596	8625	7118.0	7932
SALEABLE STEEL							
— BSP	1846	1706	1818	1819	1838	1393.3	1460
— DSP	778	605	598	782	812	522.4	658
— RSP	1042	1045	985	1091	992	750.8	838
— BSL	931	849	844	1472	1529	1137.1	1275
— IISCO	481	430	523	488	500	396.6	500
Sub-TOTAL	5077*	4593**	4746**	5651*	5671*	4200.2	4731
— TISCO	1516	1447	1537	1605	1620	1452.7	1550
TOTAL	6593	6040	6283	7256	7291	5652.9	6281
SALEABLE PIG IRON							
— BSP	606.2	519.3	430.3	504	457	479.9	625
— DSP	146.5	120.9	102.2	88	105	155.0	200
— RSP	3.6	0.2	12.4	64	29	45.1	60
— BSL	607.6	280.0	729.8	452	393	487.7	600
— IISCO	117.8	51.5	64.2	59	119	115.4	102
TOTAL	1481.7	971.9	1338.9	1167	1104*	1283.1	1587
ASP—Ingot steel	97.33	76.65	70.36	86.01	81.1	60.08	88.05
— Saleable steel	48.84	45.68	41.73	52.04	46.8	38.58	50.00
SSP				3.21	6.8	5.99	9.5

*Rounded off.

**Excludes inter plant transfer.

ANNEXURE 3B

CAPACITY UTILISATION PERCENTAGE OF STEEL PLANTS DURING 1978-79 — 1983-84

Plant Products	1978-79	1979-80	1980-81	1981-82	1982-83	1983-84 upto Feb., 1984
INGOT STEEL						
— BSP	88.0	84.3	81.6	84.6	85.2	73
— DSP	59.1	55.1	46.3	58.1	59.5	50
— RSP	73.3	70.4	64.7	66.8	63.6	59
— BSL	70.3	57.4	36.9	71.7	73.2	65
— IISCO	62.8	56.5	60.9	60.0	62.4	53
Sub-Total SAIL	73.1	66.5	58.3	70.6	71.1	62
TISCO	93.3	89.0	93.7	97.8	97.3	97
TOTAL	76.9	70.4	64.5	75.1	75.7	68
SALEABLE STEEL						
— BSP	93.9	86.8	92.5	92.6	93.5	77
— DSP	62.8	48.8	48.3	63.1	65.6	46
— RSP	85.1	85.3	80.4	89.1	81.0	67
— BSL	68.7	43.1	42.8	74.7	77.6	63
— IISCO	60.1	53.8	65.4	61.0	62.5	54
Sub-Total	77.1	63.8	65.9	78.5	78.8	64
TISCO	101.1	96.5	102.5	107.0	108.0	106
TOTAL	81.6	69.4	72.2	83.4	83.8	67
Alloy Steels Plant						
Ingot Steel	97.0	76.7	70.4	86.0	50.7	41
Saleable Steel	81.4	76.1	69.6	86.7	78.0	41

3.2 *Visvesvaraya Iron and Steel Limited, Bhadravati*

3.2.1 From a small pig iron plant of 24,500 tonnes per annum capacity in 1923 under the then Govt. of Mysore, the Visvesvaraya Iron and Steel Limited has developed into a major producer of special and alloy steel with 77,000 tonnes capacity per annum (180,000 tonnes in terms of ingots).

3.2.2 The authorised capital of the company is Rs. 75 crores of which Rs. 46.40 crores have been subscribed and paid up 60% of the capital is held by the Govt. of Karnataka and 40 per cent by Steel Authority of India Limited. Total loan of Rs. 11.63 crores from Govt. of India/Steel Authority of India Ltd. is outstanding against the Company as on 31-3-1983.

Production

3.2.3 Apart from steel, VISL produced pig iron, ferrosilicon and other ferro alloys, cement, steel castings, pipes, sleepers and refractories. The installed capacity of the plant, production during 1982-83 and 1983-84 are as follows :—

(In tonnes)

	Installed Capacity	Production during		
		1982-83	April-Dec., 1983	January-March 1984 (Projected)
1. Mild Steel (Saleable)	48,000	18,218	13,750	7,250
2. Special & Alloy Steel	77,000	45,059	27,330	9,670
3. Steel Ingots	1,80,000	83,313	54,940	18,060
4. Ferro Silicon	20,000	3,219	4,260	340
5. Cement	96,000	72,416	44,630	15,370
6. Pig Iron	1,80,000	58,872	39,230	9,770
7. Ferro Alloys	3,800	5,360	5,667	1,433
8. Steel Castings	2,500	601	471	129
9. Cast Iron Spun Pipes	17,000	7,652	2,420	2,580
10. Gray Iron Castings	15,600	7,164	4,960	1,040
11. Cast Iron Plate Sleepers	15,000	—	—	—
12. Refractories	9,600	6,070	5,430	1,320

Severe power shortages and market demand has affected the rate of production.

Working Results

3.2.4 During the year 1982-83, the company incurred a loss of Rs. 22.59 crores. A loss of Rs. 32.25 crores is estimated for 1983-84. The performance of the company is reviewed by the Board of Directors of VISL with a view to improve its working results.

Capital Scheme under implementation

3.2.5 In order to optimise production, a continuous casting machine with related facilities has already been commissioned and an oxygen plant of 850 NM 3/hr. capacity is expected to be commissioned in October, 1984.

3.2.6 The project has undertaken research and development activities *inter alia* for energy conservation in electrical pig iron furnace, standardisation and diversification of products and production processes.

Man-power

3.2.7 As on 1st January, 1984, the project employed 11,564 persons of which 1369 were Scheduled Castes and 98 Scheduled Tribes. 149 ex-servicemen and 150 handicapped persons were also employed. Total number of women employed were 446.

3.3 *Sponge Iron India Limited*

3.3.1 This is the first company in India which has successfully established sponge iron production with non-coking coal and iron ore available in Andhra Pradesh, at its plant at Kothagudem (Andhra Pradesh). As Sponge iron can be used for production of iron and steel, this has opened up feasibility of production of iron and steel even in areas away from the sources of metallurgical coke.

Capacity

3.3.2 The present capacity of the project is 30,000 tonnes. The capacity is being expanded to 60,000 tonnes per annum.

Finance

3.3.3 The authorised capital of the company is Rs. 9 crores and subscribed and paid up capital is Rs. 8.84 crores of which Rs. 0.83 crore was subscribed by the Govt. of Andhra Pradesh and balance by the Government of India. Government have also provided a total Grants-in-Aid of Rs. 30 lakhs for conducting research and development activities and loan of Rs. 8.20 crores for meeting its working capital requirements and capital schemes.

Production

3.3.4 As against production of 23,430 tonnes of sponge iron in 1982-83, (78% of capacity), the production during 1983-84 (upto Feb.) was 24,084 tonnes.

Progress of expansion scheme

3.3.5 The project is being expanded to 60,000 tonnes per annum capacity at a cost of Rs. 8.55 crores. The progress of construction and erection is satisfactory and the expansion programme is expected to be completed by December, 1984 as per schedule.

Profitability

3.3.6 During the first year of its production, the company made a net profit of Rs. 0.05 crore after providing for interest and depreciation. During 1982-83, it suffered a loss of Rs. 21 lakhs owing mainly to slackness in demand. A profit of Rs. 7 lakhs is expected in 1983-84.

Research and Development

3.3.7 The project has developed designs for continuous feeding of sponge iron into electric arc furnaces and a prototype briquetting machine for briquetting of sponge iron fines. This has improved the maketability of its products.

3.3.8 Consumption of iron ore per tonne of sponge iron production has been reduced from 2.59 tonnes to 2.42 tonnes. Similarly coal consumption per tonne of sponge iron has been reduced from 1.92 tonnes to 1.81 tonnes. This has helped the project to reduce its cost of production.

Representation of Scheduled Caste and Scheduled Tribes

3.3.9 The total number of employees of the company as on 30-11-83 and the representation of SC and ST etc. is as follows :—

TOTAL NO. OF EMPLOYEES OF THE COMPANY AS ON 30-11-83 INDICATING SEPARATELY PERSONS BELONGING TO SCHEDULED CASTE, SCHEDULED TRIBES AND WOMEN

Group	Total No. of employees	SC	ST	Ex-servicemen	Physically Handicapped	Women	Remarks
Group 'A'	57	3	—	—	—	1	
Group 'B'	20	1	—	—	—	—	
Group 'C'	207	14	8	2	1	14	
Group 'D' (Excluding Sweepers)	117	29	18	1	3	2	
Group 'D' (Sweepers)	5	2	—	—	—	2	
Total	406	49	26	3	4	19	

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 the export and import of ferrous melting scrap, import of re-rollable scrap, sponge iron, cast iron scrap including pig iron chips and old ships for breaking. The Company is also responsible for the disposal of scrap and certain other arisings from public sector steel plants and other organisations.

3.4.2 The Company has an authorised capital of Rs. 2 (two) crores and paid up capital of Rs. 79.56 lakhs as on 31st December 1983 ; the Government of India holds about 86% of the equity share holding and the balance of about 14% is held by share-holders in the private sector. MSTC was a subsidiary of the Steel Authority of India Limited till May 20, 1982 and became an independent Company under the Government of India with effect from May 21, 1982.

3.4.3 Performance of MSTC on import/export front in respect of various items of scrap etc., during 1982-83 and 1983-84 (upto February, 1984) is as under :

(Values in Rs. lakhs)
(Quantity in Tonnes/LDT)

Name of Item	1982-83		1983-84 (upto Feb., 1984)	
	Quantity	Value	Quantity	Value
I. IMPORT				
(*i*) Carbon Steel Melting Scrap (a) Canalised	3,82,000		5,15,729	8476
(b) Others	6,300	4962		
(*ii*) Stainless Steel Melting Scrap			4,688	496
(*iii*) Old Ships for breaking	2,57,000 LDT (46 ships)	1251	4,10,281 LDT (89 ships)	4191
(*iv*) Sponge Iron	42,590	447	23,707	339
II. EXPORT				
Ferrous Scrap (Mill scale)	94,111	195	78,339	167
DOMESTIC SALES				
Secondary Arising of Integrated Steel Plants	3,04,000	2100	1,96,773	2165

3.4.4 In addition to the above imports, MSTC issued No Objection Certificates for the import of carbon Steel Melting Scrap amounting to 2,49,000 tonnes during 1982-83 and 1,65,315 tonnes during 1983-84 (upto February, 1984).

3.4.5 The exports of mill scale during 1982-83 were 94,111 tonnes and during 1983-84 (upto February, 1984) the exports were above 78,000 tonnes.

3.4.6 In addition to its traditional activities, MSTC during 1983-84 undertook new activities by undertaking sale of scrap on agency basis on behalf of a number of public sector organisations including Hindustan Aeronautics Limited, Koraput, Jessop and Co. Limited, Calcutta, Paradip Port Trust, Burn Standard Company Limited, Calcutta, etc.

3.5 *Ferro Scrap Nigam Limited* :

3.5.1 The Ferro Scrap Nigam Limited (FSNL) is a joint sector company in which the Metal Scrap Trade Corporation Limited holds 60% equity shares with the remaining 40% being held by M/s. Harsec Corporation Inc. USA. The Company undertakes recovery and reprocessing of scrap from slag and refuse dumps in the steel plants in Jamshedpur, Rourkela and Burnpur. It also has a licence to undertake the recovery of scrap in the Bhilai Steel Plant.

3.5.2 During the year 1982-83, the recovery of scrap was 3,75,736 tonnes (against 3,76,863 tonnes in the previous year). The recovery during 1983-84 (upto February, 1984) has been 4,11,000 tonnes (Provisional). The gross income comprises of service charges, including miscellaneous income realised during 1982-83 was Rs. 475.53 lakhs (compared to Rs. 428.75 lakhs in the previous year). The Company earned a profit (before tax) of Rs. 97.99 lakhs during 1982-83 (compared to Rs. 86.19 lakhs in the previous year). During the year 1983-84 (upto February 1984), the Company earned a profit before tax amount to Rs. 223.90 lakhs (Provisional).

3.5.3 The Company is implementing a scheme for the setting up of a Secondary Scrap Recovery Unit at Bhilai Steel Plant at a cost of Rs. 4.5 crores. The preliminary production started in March, 1983. The major equipment has been erected and commissioned.

3.6 *National Mineral Development Corporation Limited*

3.6.1 The National Mineral Development Corporation Ltd. (NMDC) was established in November, 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 of NMDC are confined to iron ore and diamonds. On the exploration, planning and development side, its investigation, planning and consultancy units deal with minerals such as iron ore, diamonds, limestone, dolomite, rock phosphate, gypsum, bentonite, slate, beach sands containing rare earths, etc. In respect of iron ore, the NMDC is a producer for exports only. The export of iron ore is canalised through the MMTC and Japanese Steel Mills are the major buyers of iron ore produced by the NMDC.

3.6.2 The following units are under the control of NMDC :—

A. PRODUCTION PROJECTS	STATE IN WHICH LOCATED
Iron Ore	
Bailadila—14	Madhya Pradesh
Bailadila—5	Madhya Pradesh
Donimalai	Karnataka.
Diamond	
Panna Diamond Mining Project (Majhgawan Mine)	Madhya Pradesh.
B. PROJECTS UNDER CONSTRUCTION	
Iron Ore	
Bailadila-14 Expansion & Modification Scheme (Bailadila—11C)	Madhya Pradesh.
Fine Ore Handling Scheme (Bailadila-5)	Madhya Pradesh.
Dolomite	
Machkot Dolomite Project.	Madhya Pradesh.
C. PROJECTS UNDER INVESTIGATION/PLANNING	
Ion Ore	
Bailadila Deposit No. 11B; Fine Ore and Blue Dust Handling Scheme (Bailadila—14/11C Complex)	Madhya Pradesh.
Bababudan; Kumaraswamy	Karnataka
West Coast Deposits (in collaboration with Mysore Minerals Limited)	Karnataka.
Malangtoli	Orissa
Ongole	Andhra Pradesh
Diamond :	
Exploration of diamond deposits of Andhra Pradesh and Madhya Pradesh (in collaboration with GSI and MEC)	Andhra Pradesh & Madhya Pradesh.

The authorised capital of the Corporation is Rs. 150 crores. The equity capital as on December 31, 1983 was Rs. 90.98 crores. Government loans outstanding as on December 31, 1983 amounted to Rs. 38.48 crores.

Production

3.6.3 Production in the units of NMDC during 1982-83 and 1983-84 is given below :—

(In lakh tonnes

Name of the Project	1982-83 (Actuals)		1983-84 Apr. '83–Feb. '84 (Act.)	
	Lumps	Fines	Lumps	Fines
Bailadila-14	25.10	9.75	18.08	5.80
Bailadila-5	27.05	13.27	22.77	10.85
Donimalai	4.23	3.58	6.86	5.85
(Panna Diamond Mining Project (in carats)	13056		12083	

Sales turnover during the year 1982-83 was Rs. 108.99 crores compared to Rs. 93.37 crores in 1981-82. The sales realisation increased despite a reduction of about 12% in the quantity of ore exported. During 1983-84 (upto December, 1983), the sales turnover has been Rs. 69.79 crores.

With continuing recession in the world steel industry, the Janapese Steel Plants, who are the principal buyers of NMDC ore reduced their imports in 1982-83. The Bailadila Groups of Mines had consequently to curtain production during 1982-83. The recession is likely to continue for some more time and this will affect the operations of the iron ore mining.

Diamonds

3.6.4 The actual production of diamonds during April to December 1983 was 9814 carats against the revised target of 10,989 carats. The main reasons for shortfall in production were (i) interruptions in power supply from Madhya Pradesh Electricity Board, (ii) sticky ore because of rains which resulted in lower quantum of tuff treatment during July to September,

1983. The total quantity of diamonds auctioned/disposed of during the year (till December, 1983) was 8773 carats valued at Rs. 94.28 lakhs.

Working Results

3.6.5 During 1982-83, the NMDC earned a net profit of Rs. 14.52 crores as compared to Rs. 3.80 crores during 1981-82.

New Projects

3.6.6 (i) *Bailadila 11-C*

To supplement and replaced Bailadila 14 deposits, Bailadila 11-C is being developed at a revised cost of Rs. 19.70 crores. An annual production of 3.8 million tonnes is expected from Bailadila 11-C. The major part of iron ore produced here is identified as a source of supply for the Visakhapatnam Steel Plant. This project is expected to be completed towards the end of the year.

(ii) *Fine Ore Handling Scheme (Bailadila-5)*

Government have sanctioned this project for handling fine ore at Bailadila-5 including reclamation and loading facilities at an estimated cost of Rs. 25.94 crores in September, 1982. The project is running on schedule and is expected to be completed in September, 1985.

Investigation

3.6.7 NMDC has been assigned the task of developing dolomite deposits for the supply to the Visakhapatnam Steel Plant. The NMDC in association with Geological Survey of India is making investigations under the Diamond Exploration Scheme funded by the Government of India. The NMDC has set up diamond processing plants in Andhra Pradesh and Madhya Pradesh. The exploration work will continue through 1983-84 and a final evaluation will be made thereafter.

Industrial Relations

3.6.8 Industrial relations during April—December, 1983 were by and large peaceful and cordial. The last wage settlement with the workers expired on August 31, 1982.

Personnel

3.6.9 The details of employees in the NMDC as on November 30, 1983 are indicated below :

Group	Total No. of Regular employees as on 30-11-83	No. of Scheduled Caste employees (Out of Col. 2)	No. of Scheduled Tribe employees (Out of Col. 2)	No. of Women Employees (out of Col. 2)
1	2	3	4	5
A	521	19	2	10
B	619	36	4	21
C	3394	424	402	130
D (Excluding Sweepers)	1841	325	567	118
D (Sweepers)	122	97	1	32
Total	6497	901	976	311

3.7. *Mandovi Pellets Limited*

3.7.1 National Mineral Development Corporation (NMDC) is participating on behalf of Government in Joint Sector Enterprise, Mandovi Pellets Limited (MPL) which was approved in 1975 to produce 1.8 million tonnes of blast furnace grade iron ore pellets. The plant started production in 1979 as a 100% export oriented unit. NMDC and M/s. Chowgule and Company Private Limited each contributes to the extent of 1/3rd of the equity capital of this Company, the remaining 1/3rd being contributed by the general public/financial institutions. MPL had entered into a long term agreement with Japanese Steel Mills for export of a total quantity of 18.32 million tonnes of pellets at a rate of 1.82 million tonnes per year over a period of 10¼ years starting with financial year 1978-79. Due to six months delay in commissioning of the plant, MPL could not ship any pellets in 1978-79. In the following two years, 1979-80 and 1980-81 also, the company could export only 0.66 million tonnes and 0.88 million tonnes respectively. The reason for shortfall in production was inadequate supply of power.

3.7.2 Due to inadequate supply of power and increase in price of fuel oil, MPL felt that it could not operate economically. As a result of this and reduced demand for blast furnace grade pellets, the plant closed down in April, 1981 initially for one year. Later it was decided to continue the closure for another two year and the company entered into an agreement with Japanese Steel Mills for supply of iron ore lumps and fines in lieu of pellets on a year to year basis. In the first two years of operation, the company incurred a loss of Rs. 14.39 crores. In 1981-82, when fines were supplied to Japanese Steel Mills in lieu of pellets, the Company received premium at $ 4.85 per tonne and accumulated losses as on March 31, 1982 came down to Rs. 13.10 crores. The Company's projection is that with the continuance of the present arrangement of keeping the plant closed upto March 31, 1984, supply of fines in lieu of pellets and receiving premium thereon the cumulative losses will come down to Rs. 5.74 crores.

3.8 *Manganese Ore (India) Limited*

3.8.1 Manganese Ore (India) Ltd. is the largest producer of high grade manganese ore in the country. The Company originally started as the Central Provinces Prospect Syndicate in early 1896. Later, it became the C.P. Manganese Ore Company Limited (a Company registered in London). The Company was incorporated under the Indian Companies Act, 1956, in June 1962. It became a fully owned Government Company in October 1977. The shares of the Company are held by Govt. of India, Govt. of Madhya Pradesh & Govt. of Maharashtra in the ratio of 51.86%, 25.07% and 23.07% respectively. The high grade manganese ore is used for producing ferro manganese, which is used in the manufacture of steel. Manganese being a strategic mineral with 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 to the minimum level consistent with the need for earning foreign exchange.

3.8.2 The authorised Capital of the Company is Rs. 6 crores and the paid up capital as on 30th November 1983 is Rs. 2.50 crores.

3.8.3 In 1982-83, Manganese Ore (India) Limited produced from its various mines 4,71,299 tonnes of manganese ore of various grades against the target of 4,65,000 tonnes as compared

to 4,47,625 tonnes during 1981-82. From April to December 1983, the Company produced 3,24,060 tonnes of manganese ore against a target of 3,15,669 tonnes. The target for 1983-84 is 4,25,000 tonnes. It has exported 78,100 tonnes of manganese ore during this period and 21,900 tonnes of ore is likely to be exported during the remaining period of the year. The total sales during the period April to December 1983 were 2,99,272 tonnes valued at Rs. 1,225.89 lakhs against a sales target of 3,44,547 tonnes. The sales during the remaining period is expected to be 1,14,853 tonnes valued at Rs. 408.82 lakhs. Off take has been lower this year on account of lower demand from abroad and domestic steel plants. The Company is endeavouring to meet this situation by increasing production and effecting economies and cost reduction.

3.8.4 Manganese ore (India) Limited has been consistently making profits and declaring dividends. In 1982-83, the company made a gross pre-tax profit of Rs. 30.35 lakhs. The post-tax profit during 1982-83 has been Rs. 30.35 lakhs. It has expected to make a gross profit of Rs. 4.48 lakh in the year 1983-84.

3.8.5 The Company is considering redesigning of Ukwa Mine and optimisation of production from all Mines of the Company. In line with the recommendations of the Company's consultants M/s. Seltrust Engg. Limited, London, the Company has taken up the programme of deepening of the holmes shaft at Balaghat Mines in order to increase the production of high grade low Phos Ore.

3.8.6 The main activity of the Company is mining, mostly under ground. The Company has taken particular care to ensure safety of its workers. Apart from complying with the rules and regulations promulgated by Government, Pit Safety Committees are functioning in all the mines. These Committees meet at least once every month to analyse causes of accidents and adopt measures for their prevention. Safety Campaigns are undertaken to prevent accidents. One of the Chief Mining Engineers of the Company functions as Chief Safety Officer. He inspects mines.

3.8.7 Various consultative forums are already functioning in different units of the Company for the effective participation of workers in the management functions. Works Committee, Canteen Management etc., have been functioning satisfactorily at each unit. Joint Management Councils have also been constituted at different units. The problems which cannot be solved at the unit levels are referred to the Apex Body functioning at the Corporate level. One of the Workers' representatives has also been appointed on the Board of Directors of the Company.

3.8.8 The details of employees in the Company as on 31-12-1983 are indicated below :

Group	SC	ST	Others	Total
A	4	3	159	166
B	1	4	87	92
C	240	238	1052	1530
D	1743	3651	4657	10051
Sweepers	121	..	..	121
Total	2109	3896	5955	11960

3.8.9 For the progressive use of Hindi in Manganese Ore (India) Limited the Company has formed a Hindi Cell at Head Office under the Deputy General Manager (Personnel). The Company has also formed Implementation Committees at Head Office and at the Mines of the Company. These Committees inspect the implementation of Hindi as per the Official Languages Act at Head Office and at Mines.

3.9 *Bharat Refractories Limited*

3.9.1 The Refractory Plant at Bhandaridah was acquired by the Government of India under the provisions of the Asian Refractories (Acquisition of Undertaking) Act, 1971, and was managed on behalf of the Govt. of India by the Bokaro Steel Limited upto 21-7-1974. On 22-7-74, a separate company in the name and style of "Bharat Refractories Limited" was incorporated as subsidiary to the Bokaro Steel Limited. Subsquently, under the provisions of the Public Sector Iron and Steel Companies (Restructuring) and Miscellaneous Provisions Act, 1978, Bharat Refractories Limited ceased to be a subsidiary of Bokaro Steel Limited/Steel Authority of India Limited and the Company was placed under the direct administrative control of

Department of Steel with effect from 1st May 1978. The following undertakings were also transferred to and vested in Bharat Refractories Limited from the above date :

Refractories Plant of Hindustan Steel Ltd. (Now known as Ranchi Road Refractories Plant) along with its captive sillimanite mines in Meghalaya, known as Nongston Sillimanite Mines.

The Refractories Plant of Bhilai Steel Plant of SAIL located at Bhilai (now known as Bhilai Refractories Plant).

India Firebricks and Insulation Co. Ltd., formerly a subsidiary of Steel Authority of India Limited (was made a subsidiary of BRL).

All the units of the Company including the subsidiary company, excepting Bhiliai Refractories Plant were taken over as sick units from private sector.

3.9.2 The authorised Share Capital of the Company is Rs. 40 crores with the paid up capital at Rs. 32.9295 crores as on 31.12-1983. The total outstanding loan as on 31-12-1983 is Rs. 34.21 crores

3.9.3 The production performance of the various units of the Company as well as its subsidiary company IFICO during 1982-83 and 1983-84 (till Feb., 1984 is given below :

Quantity in MT

Name of the Unit	Prodn. 1982-83		1983-84	
	Bricks	Mortar	Prodn. Apl.—Feb. 84	
			Bricks	Mortar
Bhandaridah Refractory Plant	11,499	4,155	13,934	3,804
Ranchi Road Refractory Plant.	4,027	338	3,623	1,419
Bhilai Refractory Plant	15,024	144	15,568	1,433
IFICO	25,701	2,618	24,005	1,859

3.9.4 Bharat Refractories Limited is expected to incur a loss of Rs. 738.78 lakhs during 1983-84 as compared to a loss of Rs. 553.35 lakhs in 1982-83 (after providing for depreciation and interest). India Firebricks and Insulation Company Limited is expected to incur a loss of Rs. 43.16 lakhs in 1983-84 as against a loss of Rs. 64.57 lakhs in 1982-83.

3.9.5 The main reasons for continuing losses at Bhandaridah Refractories Plant is the low volume of production due to frequent breakdowns 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. The production of the plant has since picked up.

3.9.6 *Pithoragarh Magnesite Project*

One of the principal raw materials for production of basic refractories is dead burnt magnesite. While a view to having a captive source of dead burnt magnesite for the Bhilai Refractory Plant and to substitute for imports, Govt. sanctioned in October 1982, the setting up of a Rotary Kiln complex for dead burning of magnesite at Dewalthal in Pithoragarh District of U.P. at a total cost of Rs. 14 crores. Private land covering the plant area has been acquired and work on contract with MECON for engineering and consultancy services has started.

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

3.9.8 The manpower position as on 31-12-1983 in different units and subsidiary of the company is as follows :—

Name of Unit	Total Manpower	S.C.	S.T.	Women	Physically Handicapped
Bhandaridah Refractories Plant.	875	113	63	82	1
Ranchi Road Refractories Plant and N.S. Mines	602	35	149	20	4
Bhilai Refractories Plant	1,497	174	259	9	11
Head Office	94	4	2	..	..
Pithoragarh Magnesite Project	4	..	..	..	..
TOTAL	3,072	326	473	111	16
India Firebricks and Insulation Company Ltd.	1,140	62	171	..	12
GRAND TOTAL	4,212	388	644	111	28

3.9.9 All the units, Head Office and Subsidiary Company have been notified in the Gazettee in terms of rule 10(4) of the Official Language Rules, 1976, that the staff of these units have acquired working knowledge of Hindi. Implementation committees are meeting regularly in all the units and Head Office for speedy implementation of instruction received from time to time.

3.9.10 Safety measures are being provided in all the plants as per provisions of the Factories Act, 1948.

3.9.11 Contract labourers are engaged on jobs of casual nature and are given regular appointments against regular vacancies if their names are sponsored by the local employment exchange. Minimum statutory wages are being paid to contract labourers. In addition they are being allowed other benefits facilities like Provident Fund, E.S.I. Leave and Welfare facilities.

3.9.12 The Scheme is working satisfactorily in Bhandaridah and Bhilai Refractory Plant. In Ranchi Road Refractory Plant and IFICO., rapport has been established with registered unions.

3.10 *Kudremukh Iron Ore Company Limited*

3.10.1 The Kudremukh Iron Ore Company Limited (KIOCL) was set up to produce iron ore concertrate to meet the long term requirements of Iran. The Sale and Purchase Contract with Iran envisaged the supply of 150 million tonnes of iron ore concentrate over a period of 21 years. Iran also entered into a financial agreement with India and extended a loan not exceeding US $ 630 million for construction of the project and the related infrustructure. Against this loan of US $ 630 million, so far Iran has paid US $ 255 million. The project has, however, been completed with the funds provided by the Government of India.

3.10.2 According to the Sale and Purchase Contract with Iran, the supply of iron ore concentrate should have commenced from August, 1980. The Kudremukh Iron Ore Company Limited was ready to commence supply of iron ore concentrates in accordance with this schedule but Iran indicated its inability to lift the material. Continuing efforts are bring made to resolve the difficulties.

3.10.3 The authorised capital of the KIOCL is Rs. 310 crores. The subscribed and paid up capital on December 31, 1983 is Rs. 297.22 crores. The loan drawn from the Government on capital account as on December 31, 1983 is Rs. 238.97 crores.

3.10.4 The company incurred a loss of Rs. 66.31 crores during 1982-83 which includes Rs. 31.12 crores as depreciation and Rs. 30.73 crores as interest on Government loans. The losses are due to restricted production of iron ore concentrate arising from the failure of Iran to take the contracted delivery of the material.

Production and despatches

3.10.5 The Kudremukh Iron Ore Project has a capacity of 7.5 million tonnes/year of iron ore concentrates. The project is capable of producing at its designed capacity. However, in view of the inability of Iran to lift the contracted quantity of iron ore concentrate, the company has had to endeavour to find alternate buyers and to plan its production accordingly. Keeping in view the contracts entered into with Romania and Czechoslovakia, the company has planned a production of 1.35 million tonnes of iron ore concentrate during 1983-84 against which in the period April—December, 1983 it has already achieved a production of 1.077 million tonnes.

3.10.6 During 1983-84, the despatches to Romania and Czechoslovakia are planned at 1.30 million tonnes of iron ore concentrate. Against this the company has already despatched 960,029 DMT upto December, 1983.

Pelletisation Plant

3.10.7 Due to the uncertainty in the offtake of the iron ore concentrate by Iran, and keeping in view the better prospects likely for the sale of pellets, in May 1981, the Government sanctioned the erection of a pellet plant of 3.00 million tonnes/year capacity located in Mangalore for the conversion of 3 million tonnes per annum of Kudremukh iron ore concentrate into pellets. The sanctioned capital expenditure of this project is Rs. 87.05 crores. Expenditure on the pellet plant till December 31, 1983 is Rs. 61.52 crores. Work on the project is in progress and the project is in progress and the project is scheduled to be commissioned by August, 1984.

Personnel

3.10.8 The total number of employees of the company as on December 31, 1983 is given below :

Group	Total No. of employees	Scheduled Castes	Scheduled Tribes	Ex-service men	Women
'A'	340 +27(T)	11 +3(T)	2	6*	7 +2(T)
'B'	67	2	..	1	4
'C'	1170 +91(T)	107 +2(T)	11	54@	81
'D' (excluding Sweepers)	220	48	32	6£	11
'D' (Sweepers only)	36	31	3	..	6
TOTAL	1833 +118(T)	199 +5(T)	48	67	109 +2(T)

*One ex-serviceman is also a physically handicapped employee.

@Two employees also belong to Scheduled Castes category.

£One employee also belongs to Scheduled Caste category.

T Trainees.

Workers' Participation in Management

3.10.9 The company has set up 7 shop level councils and a joint council at the Apex Level. The representatives of the workmen are nominated by the recognised Union of the company. These councils meet periodically to take measures for improving the production and productivity.

Contract Labour

3.10.10 As a matter of policy, the company does not employ contract labour. Only jobs of casual nature are got done through contractors.

Safety Measures

3.10.11 Besides on independent Safety Department, every Department of the company has a Safety Committee which meets once in a month. Apart from this, Shop Councils comprising representatives of workers and management are functioning on the shop floor level for each department separately. A joint

council comprising representatives of all departments and senior executives of the organisation is also functioning. This council meets once in three months. Saftey campaign is organised for a week every year. All employees have been provided with the safety rules compiled by the company. The company has been awarded shields and medals by the Mines Saftey Association for the best measures adopted by the company.

3.11. *Metallurgical & Engineering Consultants (India) Ltd.*

3.11.1 Metallurgical & Engineering Consultants (India) Limited (MECON) was set up in 1959 as Central Engineering & Design Bureau. It has emerged as a premier consultancy and design organisation in the public sector for metallurgical industry. Its business includes the following :—

(a) rendering technical consultancy, design and engineering and other technical project management services for setting up plant and machinery in ferrous and non-ferrous metallurgical industries;

(b) design and supply of equipment for coke oven batteries (including 7 metre high coke ovens) dry coke cooling plants; and rolling mills;

(c) design and engineering of processing lines for ferrous and non-ferrous metals, etc.

Assignments in India

3.11.2 The important assignments which Metallurgical & Engineering Consultants (India) Limited is handling are as follows :—

(a) Consultancy and engineering services to the Bokaro and Bhilai Steel Plants for their 4.0 M.T. Expansion.

(b) Erection and Commissioning of the tall Coke Oven batteries in Bhilai and Vishakapatnam Steel Plants and dry Coke Cooling Plant of VSP where new technologies are being adopted for the first time in India.

(c) Orders received for a high capacity and sophisticated light and medium merchant mill and wire rod mill from VSP.

(d) Engineering services to BALCO for their smelter and fabrication Complex in Korba (M.P.).

(e) Engineering and Project management services for expansion of Khetri Copper Refinery Complex.

(f) Engineering services for the first Commercial direct reduction sponge iron plant of M/s. Orissa Sponge Iron Limited in Orissa.

In addition, MECON is rendering its services for a number of important Defence Projects.

Foreign Assignments

3.11.3 MECON provided services including manpower training to the Delta Steel Company (DSC) in Nigeria for a direct reduction based integrated steel plant of One Million tonne annual capacity near Wari. It also provided services to the Ajaokuta Steel Plant for setting up of an integrated Steel Plant at Ajaokuta, Nigeria.

3.11.4 MECON has formed a joint venture in Nigeria in association with a Government company under the Ministry of Steel Development, Government of Nigeria, a leading Nigerian engineer and a reputed industrialist.

3.11.5 The authorised capital of the company is Rs. 4.0 crores and issued and paid-up capital as on March 31, 1983 was Rs. 2.02 crores. Against this, it has reserves and surplus amounting to Rs. 20.60 crores as on 31st March, 1983.

Working Results

3.11.6 The turnover of the company in 1982-83 was Rs. 38.58 crores and the estimated turnover for 1983-84 is Rs. 131.41 crores. The company earned a pre-tax profit of Rs. 5.69 crores in 1982-83. The estimated profit for the year 1983-84 is Rs. 7.30 crores.

Personnel

3.11.7 The total number of employees of MECON as on December 31, 1983 including those belonging to Scheduled Castes and Scheduled Tribes are given below :

Group of Posts	Total No. of employees	S.C.	S.T.	Women	Ex-Service-men	Handicapped
1	2	3	4	5	6	7
'A'	1,819	33	21	19	3	3
'B'	420	7	23	30	Nil	Nil
'C'	830	88	195	88	28	2
'D' (Excluding Sweepers)	532	51	178	24	144	14
'D' (Sweepers)	97	48	32	14	Nil	Nil

Industrial Relations

3.11.8 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 and other welfare measures for the employees.

3.11.9 MECON entered into agreement with the recognized union settling the various issues relating to employees' salary and other benefits. These settlements will be valid for a period of four years.

3.12 *Hindustan Steelworks Construction Limited*

3.12.1 Hindustan Steelworks Construction Limited (HSCL) was incorporated in June, 1964, to mobilse indigenous capability for undertaking construction work of the integrated steel plants in the country. Subsequently, HSCL diversified its activities and is now handling works relating to construction of dams, bridges, silos, power plants, industrial plants, mining complexes, metro railway, township ancillary buildings etc. The company has a full fledged design wing and also has a large fleet of heavy construction equipment.

3.12.2 Some of the important construction projects presently under execution by the company are as under :—

(*i*) Bokaro Steel Plant	4 million tonne expansion.
(*ii*) Bhilai Steel Plant	4 million tonne expansion.
(*iii*) Vizag Steel Plant	Civil work in raw material handling shop, blast furnace & Steel melting shop.
(*iv*) Durgapur Steel Plant	Civil & Structural work of captive power plant.
(*v*) Rourkela Steel Plant	Civil and structural work of captive power plant, coke oven and capital running repairing works.
(*vi*) National Thermal Power Corporation.	Coal handling plant for Super Thermal Power Plant in Korba and ancillary works for Farakka Super Thermal Power Stations and C.W. systems works at Singrauli.
(*vii*) Karnataka Power Corporation Limited.	Ancilliary works—concrete gravity Dam at Supa and Nagjhari Power Plant Works.
(*viii*) Uttar Pradesh State Electricity Board.	Site levelling and other related works for Super Thermal Power Plant in Anpara, raw water storage reservoir and finishing work for Tanda Thermal Power Plant.
(*ix*) Betwa River Board	Construction of an earthen Dam at Rajghat.
(*x*) Cement Corporation of India, New Delhi.	Cement Plant at Tandur (Andhra Pradesh) and Cement Factory at Neemuch (Madhya Pradesh).

3.12.3 The company has works of a total value of Rs. 131.4 crores for construction of school buildings and some other buildings in Libya, out of which works of the value of Rs. 74.01 crores have been completed.

3.12.4 The authorised and paid-up capital of the company as on December 31, 1983 was Rs. 20 crores. Government loan as on 31-3-1983 amounted to Rs. 18.75 crores, of which Rs. 5.65 crores is on non-remove plan account.

3.12.5 The Company's turnover during 1982-83 was Rs. 165.00 crores as against Rs. 158.93 crores during 1981-82. The provisional budgetted turnover for the year 1983-84 is Rs. 172.58 crores. The Company suffered a loss of Rs. 11.90 crores during 1982-83 as against a loss of Rs. 12.37 crores during 1981-82. One of the main reasons for the loss is large surplus labour force at Bokaro.

3.12.6 The personnel position as on 31st December, 1983 is indicated below :

Category	Total No. of employees	Scheduled Castes	Scheduled Tribes	Female Employees	Physically handicapped persons
1	2	3	4	5	6
Group A	1,850	43	11	5	2
Group B	650	35	2	6	1
Group C	15,600	1,661	786	120	29
Group D	5,700	1,392	2,252	1,313	10
TOTAL	23,800	3,131	3,051	1444	42

3.13 *The Visakhapatnam Steel Project of the Rashtriya Ispat Nigam Limited*

Project Profile

3.13.1 The steel plant project of the Rashtriya Ispat Nigam Ltd. is the first integrated steel plant being set up in the country in a coastal location near Visakhapatnam in Andhra Pradesh. This plant will have sophisticated technology in coke, iron and steel production. 7 metre tall coke oven batteries, facilities for dry quenching of coke, big blast furnaces of 3200 cubic metres each with bell-less top charging facilities, and continuous casting facilities will be set up in this steel plant. The plant will have four modern rolling mills. The project will have facilities for extensive treatment of effluents for ensuring proper environmental protection.

3.13.2 The project, with a capacity of 3.4 million tonnes of liquid steel, is scheduled for implementation in two phases, the first phase for 1.2 million tonnes of liquid steel per year, and the second phase comprising the balance. The ultimate production capacity of saleable steel will be as follows :—

	Million tonnes
Light & Medium Merchant Mill	0.71
Wire Rod Mill	0.60
Universal Beam Mill	0.80
Medium Merchant Mill	0.70
Saleable bil lets	0.17
TOTAL	2.98

Progress of construction

3.13.3 Construction is progressing satisfactorily. Till December 31, 1983, 133.06 cubic metres of excavation work and 25 million cubic metres of earth work in site levelling has been completed, construction has been taken up in all the major units and 641 lakh cubic metres of concreting has been carried out. Orders for 218,967 tonnes of equipment and 104,995 tonnes of refractory have been placed. 82,647 tonnes of structural fabrication and 3,808 tonnes of refractory erection have been completed. The establishment of the requisite transport and port facilities, water and power supplies is in progress.

Finance

3.13.4 The budget provision for 1983-84 was enhanced to Rs. 437 crores. The expenditure in 1983-84 has been Rs. 346.54 crores till December 31, 1983 and the cumulative expenditure on the project till this date is Rs. 857.94 crores.

Personnel and Manpower Development

3.13.5 The total number of employees of the project as on 31-1-1984 and the number belonging to the Scheduled Castes and Scheduled Tribes (SC & ST) etc. are given below :—

Group	Total employees	S.C.	S.T.	Ex-Servicemen	Physically Handicapped	Wom. employeese
'A'	783	30	3	3	1	8
'B'	59	5	—	—	2	2
'C'	1,517	180	13	72	6	50
'D' (excluding Sweepers)	840	145	11	105	16	9
'D' (Sweepers)	30	16	—	2	—	—
TOTAL	3,229	376	27	182	25	69

Government policy with regard to reservation of posts for Scheduled Castes and Scheduled Tribes and grant of concessions with regard to relaxations in age, qualification and experience have been kept in view while filling up of the posts. The project authorities have also made available trainee facilities to enable them to acquire requisite skills for the jobs.

3.13.6 A technical complex is being constructed to provide extensive training of technical personnel.

3.13.7 In full conformity with the Government policy to provide employment to one able-bodied member of each household of displaced families due to the acquisition of land for this project, the project has given preference for employment to displaced persons : as in December 31, 1983, the project had already provided employment to 1124 displaced persons, and the construction agencies engaged in this project had provided employment to 4533 displaced persons.

3.14 *Neelachal Ispat Nigam Limited*

3.14.1 A new Company—Neelachal Ispat Nigam Limited—was formed in March, 1982 to set up the second integrated steel plant in the Daitari region of Orissa.

3.14.2 A number of studies have established that in the circumstances prevailing in the country, a steel plant based on the blast furnace technology is likely to be highly expensive and may lead heavy losses. Alternative processes are being studied to determine the most suitable and cost effective technology for steel production in Daitari. It is anticipated that an economically viable scheme will be developed soon. In the meanwhile, pre-construction activities such as acquisition of land, soil testing, ore testing etc. have commenced.

3.15 *Vijayanagar Steel Limited*

3.15.1 A new Company *viz.*, Vijayanagar Steel Limited was formed to implement the Government decision to set up a steel plant at Vijayanagar in Karnataka.

3.15.2 Very rapid developments in the manufacturing technologies of steel are taking place because of the rapidly escalating capital and manufacturing cost of steel through conventional technologies. This is especially so for Vijayanagar which is situated far away from the indigenous sources of coking coal as well as from ports through which coking coal may be imported for steel making. A number of studies have, therefore, been undertaken to determine the most cost-effective process and pattern of production that may be adopted for this steel project. Raw materials available at Vijayanagar area are being tested

and techno-economic analysis are being carried out. It is anticipated that an economically viable scheme for the implementation of the project will be developed soon.

3.16 *Companies of the Bird Group*

3.16.1 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.

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

Name of the Company.	Govt. Shareholding (as %age of total)
1. Orissa Mineral Development Company Limited	47.50
2. Karanpura Development Co. Ltd.	51.55
Scott & Saxby Limited (subsidiary of Karanpura Dev. Company Limited)	Nil
3. Kumardhubi Fireclay & Silica Works Limited	37.35
4. Bisra Stone Lime Company Limited	40.45

There are also seven Investment Companies of the Bird Group. Department of Company Affairs is taking action to amalgamate them into one company. The amalgamated company will also come under the administrative control of the Department of Steel.

3.16.3 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 1982-83, (July 82—June 1983) the Company's output was 3,29,437 tonnes of iron ore and 69,069 tonnes of manganese ore. The company incurred a loss of Rs. 63.09 lakhs in 1982-83 (July 1982—June 1983).

3.16.4 Karanpura Development Company Limited is engaged in the mining of limestone and fireclay and has a refiactory, plant of 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 1983, (Jan.—Dec.) the company produced 69,984 tonnes of limestone, 5,684 tonnes of fireclay, and 735 tonnes of firebricks, and made a loss of Rs. 1.09 lakhs.

3.16.5 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. The company produced 59,467 tonnes of refractories valued at Rs. 10.03 crores and earned a profit (before tax) of Rs. 14.88 lakhs during the financial year January—December, 1983.

3.16.6 Bisra Stone Lime Company is engaged in mining of limestone and dolomite. The production capacity is 15 lakhs 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 1983-84 (from April to November 1983) the Company's total despatches of limestone and dolomite were 8,18,739 tonnes. The Company suffered a net loss (after depreciation) Rs. 99.50 lakhs during 1983 (upto November, 1983).

3.16.7 Scott & Saxby Limited is a fully owned subsidiary of the Karanpura Development Company Limited. Its main activities are sinking of deep tubewells, soil testing, construction of tabular structures, supply of pumps and spares and repairing and maintenance of pumps and tubewells, laying of pipelines for the supply of water in plantations, for drinking and industrial use in factories and for irrigational purposes and trading in pumps, motors and their installation. The turnover of the company during 1983 (upto November 1983) was of the order of Rs. 62.65 lakhs. It incurred a loss of Rs. 35.39 lakhs during this period. (Jan.—Dec.).

AUTONOMOUS BODIES

3.17 *Mineral Development Board*

3.17.1 The Mineral Development Board is the successor organisation to the erstwhile Iron Ore Board which was registered as a Society in January 1973, as a nodal agency for ensuring systematic, co-ordinated 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.

3.17.2 *Composition of the Board*

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, a Member Secretary and 13 members representing various Ministries and organisations involved in mining industry. The Board's expenses are met entirely by grants from Central Governments.

3.17.3 *Activities*

Apart from its advisory functions in regard to 27 minerals entrusted to it by the Department of Steel and Mines, the Board aets as a collaborative and catalytic agency for resources augmentation, development and utilisation of minerals. Identification of thrust areas, bringing in process technologies from laboratories to industrial application with a view to make the best use of resource endowments, documentation of mineral resources in regard to their availability, optimum usage etc. are given the highest importance.

Mineral Development Board through its efforts has been able to contribute substantially in the development and exploitation of the tungsten resources in the country and has done substantial work on iron ore and manganese ore.

It has been working in the field of chromite refractory minerals, China Clay etc. Studies on beneficiation of low grade barytes are proposed to be taken up in the current year. An in-depth study in collaboration with SAIL to ascertain the overall position in regard to lime stone and dolomite supplies

from steel plants is also under way. A brief outline on some of the major areas of work is given in the following paragraphs :

3.17.4 *Iron Ore*

Investigations carried out so far have indicated that most of the Iron values lost in the tailings of the existing plants can be recovered by adopting technologies already known. It is anticipated that by such means an additional source of nearly 8 m.t. of iron ore equivalent can be created which would be cheaper compared to opening up new mines for the purpose.

The efforts made in the past by the Board in introducing a new technology for iron making, namely INRED and KR process are now being persued by SAIL.

3.17.5 *Tungsten*

Tungsten is one of the critical minerals required by the Defenece Services. It is a high value item. Bulk of the requirement is met through imports. The efforts made by MDB in the exploration and beneficiation of tungsten deposits in the country have been rewarded with conspicuous success. As a result, the Defence Research and Development Organisation has come forward to take part in setting up an exclusive pilot plant for tungsten beneficiation in Rajasthan and also a Central laboratory for analysis of tungsten and associated minerals. A subsidiary company has been formed under the Rajasthan State Mineral Development Corporation exclusively for the development of tungsten. In recognition of its role in the development of this mineral, the Mineral Development Board is represented on the Board of Directors of this Company. The results of the first phase of work relating to beneficiation of eluvial tungsten bearing deposits in Rajasthan have been received from the laboratories and are being scrutinised by the Board. Further action on recovery of tungsten from these deposits is under consideration.

Simultaneously, exploration work including pitting, trenching, aditing and drilling in Degana area is continuing.

MDB has also sponsored exploration work in Almora area of U.P. for tungsten. The work is nearing completion. The results so far obtained have been encouraging.

MDB proposes to take up exploration and beneficiation of tungsten in the Agargaonkuhi blocks of Nagpur. Detailed examination of the data available and planning of the work is in progress.

3.17.6 *Chromite*

The results of the investigations so far carried out in the area of chromite have indicated that the overburden generated in the chromite mines at the rate of 10 tonnes for each tonne of chrome recovered can be better source for nickel and cobalt compared to opening up of new mine in Sukinda area.

In order to improve the economics of chromite mining, MDB has also initiated slope stability studies in Sukinda area to find the overall slope angle for opencaste mining and a suitable scheme for monitoring of failure indications.

CHAPTER IV

PRIVATE SECTOR

4.1. *Tata Iron and Steel Company*

4.1.1 Tata Iron and Steel Company Limited (TISCO), the only integrated steel plant in the private sector, is the oldest plant in the country and consists of integrated steel plant at Jamshedpur, captive collieries at Sijua, Jamadoba and West Bokaro and an iron ore mine at Noamundi in Bihar. M/s. TISCO embarked on a modernisation programme in 1980 and in the first phase of modernisation, the major units (L.D. Plant, Oxygen Plant and Lime Calcining Plant) were commissioned during March, 1983. With the commissioning of these units, the annual installed capacity has increased to 2.16 million tonnes of ingot steel and 1.74 million tonnes of saleable steel.

Production

4.1.2 The production performance of this plant in recent years is as under :—

(In '000 tonnes)

Year	Steel ingots	Saleable steel
1980–81	1,875	1,537
1981–82	1,962	1,606
1982–83	1,957	1,620
1983–84 (April—Dec, 1983)	1,407	1,157

In 1982-83, Tata Steel had a record output of saleable steel (1.62 million tonnes). In spite of serious marketing problems, Tata Steel expects to produce 1.6 million tonnes of saleable steel during the current financial year.

Financial Performance

4.1.3 M/s. Tata Iron and Steel Company Limited have reported a profit of Rs. 0.16 crore (before tax) for April to September, 1983 as against a profit of Rs. 15.43 crores for the corresponding period of 1982. Profitability of this plant has been affected primarily due to additional depreciation and interest, both directly related to the additions to block under the modernisation programme.

Indigenisation

4.1.4 The company has developed indigenous sources for quite a few spares which used to be imported. Efforts at import substitution and indigenisation have resulted in estimated saving of Rs. one crore of the foreign exchange during the year 1983.

Modernisation

4.1.5 Second phase of the modernisation programme of M/s. TISCO has been approved by the Government. This is to be completed by 1985-86 and this will enhance their crude steel capacity from 2.16 million tonnes to 2.45 million tonnes and saleable steel capacity from 1.74 million tonnes to 2.1 million tonnes.

Workers Participation

4.1.6 TISCO has 41 joint departmental councils inside and outside its works. Workers participation through the recognised unions has been established in almost all the areas and has contributed a lot towards harmonious industrial relations.

4.2 *Ministeel Plants*

4.2.1 Ministeel plants along with the Rerolling Mills are playing an important role in Indian economy. The Integrated Steel Plants produce mainly mild steel in bulk quantities. Electric Arc Furnace produce alloy, special and stainless steel in addition to mild steel.

4.2.2 At present there are 174 ministeel plants holding licences/letters of intent with a total capacity of 4.64 million tonnes per annum of steel ingots/concast billets. Out of these, 149 plants with a total licensed capacity of 4.15 million tonnes per year have already started commercial production.

The above 174 units include 20 new units who have been granted letters of intent for a total capacity of 0.384 million tonnes per annum and 38 existing units have been granted substantial expansion for a capacity of 0.83 million tonnes per annum. There are also about 50 electric arc furnace units having industrial/COB licence for manufacture of steel castings. These units also produce some quantity of steel ingots by way of diversification.

4.2.3 The production of working units during last few years is given below :—

Period	Total Ingots (In thousand tonnes)
1979–80	1663.2
1980–81	1953.7
1981–82	2031.9
1982–83	2040.0
1983-84 (April—Dec. '83) (provisional)	1516.4

4.2.4 In view of critical power situation the average capacity utilisation of the working ministeel plants varies from 70% to 75%.

4.2.5 In order to enable the ministeel plants to achieve higher capacity utilisation and also to improve economic viability of these units, the following measures have been taken :—

(i) Electric Arc Furnace steel making units which have consistently achieved 80% production of their licenced capacity during any of the previous two years are being considered for substantial expansion upto a maximum of 100% of their existing licensed capacity. Likewise units which have produced 110% or more of the licenced capacity are permitted 50% more capacity in addition to the above by way of substantial expansion.

(ii) The existing Electric Arc Furnace Units are permitted to freely diversify into production of all grades of carbon and alloy steels, including stainless steel/heat resisting steel upto their licensed capacity.

(iii) The existing electric arc furnace units are being permitted to establish rolling facilities with a view to encouraging formation of composite units.

(iv) Addition of balancing facilities like continuous costing machine, conditioning facilities, etc. are being allowed to be installed.

(v) In order to derive and demonstrate the advantages from the recent technological dvelopmens in Electric Arc Furnace industry, it has been decided to permit one unit in each State with a capacity between 40,000 to 50,000 tonnes per annum based on recent technological developments. In those States, where there may be a greater demand more than one unit may be allowed.

4.2.6 By availing of all these facilities, it is expected that capacity utilisation of mini steel plants will improve further subject to availability of power which is the main constraint for increasing production.

4.3. *Rerolling Industry*

4.3.1 The production figures of rerolling units (both with and without electric arc furnace) are as below :

Period	('000 tonnes) Rolled Products
1981–82	1422
1982–83	1530
April—Sept. '83	798
1983–84 (Estimated)	1756

The problems of the re-rolling industry have been under consideration of the Government for some time. The Government have decided to set up an Advisory Committee on steel re-rolling industry under the chairmanship of Iron & Steel Controller, Calcutta. This Advisory Committee would *inter alia* suggest measures, direct or indirect, for the benefit of the re-rolling industry.

4.3.2 In order to improve the economic viability of the existing re-rolling units, a provision has now been made in the Guidelines for permitting them backward integration *viz.* setting up of captive electric arc furnace unit.

4.4. *Steel Wire Drawing Industry*

4.4.1 There are 70 steel wire drawing units in the organised sector with licensed capacity of about 8.2 lakh tonnes per year. About 600 units are reported to exist in small scale sector having approximately same installed capacity as in the organised sector.

4.4.2 The production performance of the Industry as a whole showed a marked decline mainly due to lack of demand. High carbon steel wire rods required for stringent application, low and medium carbon cold heading wire rods and alloy steel wire rods which are not available indigenously, are being allowed to be imported as required. A few units have undertaken the development of low and medium carbon cold heading wire rods.

4.4.3 In order to give more flexibility in production to wire drawing units, the Government have continued to allow to diversify their production to all grades of carbon and alloy steel wires except for mild steel wires thicker than 12 SWG. In order to improve indigenous demand, import of wires upto 26 SWG has been restricted.

4.4.4 Production of steel wire drawing units in the organised sector during the last three years are given below :—

('000 tonnes)

Period	Mild Steel	Medium High Carbon Steel	Alloy Steel	Stainless Steel	Total
1981–82.	248	99	8	2	357
1982–83.	203	100	14	1	318
April—Sept. '83	65	49	4	0.4	118.4
1983–84. (Ertimated)	144	103	10	1	258

4.4.5. *Hot rolled/Cold rolled Steel Strips/GP/GC Sheets/PVC Sheets.*

Hot Rolled Steel Strips

4.4.6 Earlier 4 units had been granted industrial licence/letter of intent for the manufacture of hot rolled steel strips with an annual capacity of 87,500 tonnes. Out of this a capacity of 30,000 tonnes is yet to be installed. Recently Government have granted letters of intent to 9 different units in the State of

Punjab, Maharashtra, Bihar, Rajasthan, Andhra Pradesh, Haryana, Madhya Pradesh and Uttar Pradesh for the production of hot rolled steel strips. These units when set up would add a capacity of 3,60,000 tonnes to the capacity already created.

4.5. *Cold Rolled Steel Strips*

4.5.1 There are 30 cold rolled steel strips manufacturing units in the organised sector with a licensed capacity of 2.49 lakh tonnes per year. In addition to these 21 letters of intent have also been issued with a total capacity of 1.74 lakh tonnes per year. During the year, industry did not face any shortage of raw material, except for certain special grades such as Extra Deep Drawing quality etc. However, M/s. Bokaro Steel Plant have already developed EDD quality hot rolled coils for Automobile Industry and supplied some material to cold rolling strip manufacturers.

4.5.2 The production has shown a little improvement during the year mainly due to the steps taken by the Government in restricting import of defectives/second quality steel sheets/strips.

4.5.3 In order to give more flexibility in production and for improving economic viability Government have continued the policy of allowing existing units to diversify freely into production of all grades of carbon and alloy steel, including stainless steel strip with indigenous raw material.

4.5.4 Production of cold rolled steel strip in the organised sector during the last three years is given below :—

Period	Mild Steel	Medium/ High Carbon Steel	Alloy/ Stainless Steel	('000 tonnes) Total
1981-82	119	15	8	142
1982-83	114	15	7.3	136.3
April-Sept. 1983	61	6	3.2	70.2
1983-84 (Estimated)	134	15	7.4	156.4

4.6. *GP/GC Sheets*

4.6.1 Besides Rourkela Steel Plant with a rated capacity of 1,60,000 tonnes, there are two units namely M/s. TISCO and M/s. IISCO who are manufacturing GP/GC sheets. Apart from this, M/s. TCIL has been recently permitted by the Government to manufacture GP/GC sheets in place of Hot Dip Tin Plates.

Though in overall terms adequate capacity exists in the country, the shortage of the thinner gauge galvanised sheets still continues. A part of the country's requirement is, presently, being met through import. Keeping this in view and the long term perspective for a period of ten years, it has been decided to create a capacity of 3.5 to 4 lakh tonnes of GP/GC sheets in thinner gauges. Government has so far issued the letters of intent for establishment of 8 units for a capacity of 2.85 lakh tonnes.

PVC/Vinyl Coated Sheets

4.6.2 This is a new item of manufacture and is a partial substitute for ply-wood, GP sheets etc., used in building and transport industries and other consumer applications. As full market potential is yet to be established, Government have decided to initially permit few units on a selective basis. So far two units have been granted the letters of intent with an annual capacity of 95,000 tonnes.

4.7 *C.R. Stainless Steel Foils*

In order to develop new and sophisticated product for the first time in the country, it has been decided to create a very limited capacity for manufacture of cold rolled stainless steel foils. So far three units have been granted the letters of intent with an annual capacity of 10,200 tonnes.

4.8. *Ferro Alloys*

4.8.1 Ferro Alloys are essential ingredients for the production of steel. Ferro Alloys such as Ferro Manganese, Ferro Silicon, Ferro Chromium are required mainly for production of mild steel. However, with the advancement of technology production of alloy steel within the country has also increased and thereby the requirement of other ferro alloys has also increased.

4.8.2 A total capacity of 5,92,080 has been licensed for manufacture of ferro alloys to 25 units in the country.

4.8.3 Besides, the above 8 units have been registered under Liberalised Industrial Licensing Policy for taking up production of ferro alloys mainly by alumino thermic process.

4.8.4 A number of small scale units which are mostly producing ferro molybdenum, ferro vanadium etc., alumino thermic process have also come up during the last few years.

4.8.5 The total production of ferro alloys in the organised sector in the country during the last three years is as under :—

(in tonns)

Items	1981-82	1981-82	1982-83
Ferro Alloys	2,70,489	3,06,540	2,25,463

4.8.6 Besides meeting the domestic requirements, the ferro alloys, particularly, ferro manganese, ferro silicon and high carbon ferro chrome, for which abundant raw materials are available within the country, are being exported and quantity of ferro alloys exported during the last two years were as follows :—

(in tonnes)

Year	Ferro Manganese	Ferro Silicon	High Carbon Ferro Chrome
1981-82	27,747	1,000	12,000
1982-83	3,954	2,000	14,965

4.8.7 A small quantity of ferro alloy are also being imported. Total imports of ferro alloys during last three years were as follows :—

(in tonns)

Items	1978-79	1979-80	1980-81
Ferro Alloys	5,172	4,479	13,401

Source : DGCI&S, Calcutta. Figures for later periods are not available.

4.8.8 High cost of production is a major factor for uncompetitiveness of Indian Ferro Alloys abroad. Most of the ferro alloys are produced by Electric Smelting process and tariff for electricity in the country is relatively high compared to that in other countries. Besides, the ferro alloys units also suffer from non-availability of power and proper size and grade of coke.

4.8.9 In order to conserve high grade chromium ore, efforts are being put to use low grades ore and three units have been licensed to produce charge chrome based on low grade ore. Recently, two of these units have started production.

4.9 *Sponge Iron*

4.9.1 In order to supplement availability of melting scrap to be used by electric arc furnace, use of sponge iron is being encouraged. Already nine units have been issued industrial licences/letters of intent for production of sponge iron to the extent of 16,90,000 tonnes per year. Out of this, two units with a capacity of 1,80,000 tonnes have already started commercial production.

4.9.2 Production of sponge iron units during last two years is given below :—

('000 tonnes)

Period	Sponge Iron
1982-83	30
April–Sept. '83	20
1983-84 (Estimated)	44

4.10. *Pig Iron*

4.10.1 In addition to the integrated steel plants, there are three pig iron manufacturing units which are in production and another unit has ben issued letter of intent. Licensed capacity of these commissioned units is 2,11,000 tonnes and letter of intent capacity of the non-commissioned unit is 1,50,000 tonnes.

4.10.2 Production of Pig Iron Units during the last two years is given below :—

('000 tones)

Period	Pig Iron
1981-82	105
1982-83	82
April—Sept., 1983	22
1983-84 (Estimated)	70

4.11 *Tinplate Industry*

4.11.1 There are two units licensed to produce Tinplates/ Tin Free Steel, besides Rourkela Steel Plant. The total licensed capacity of these two units is 1.5 lakh tonnes per year of

Electrolytic Tinplate/Tin Free Steel. Due to measures taken by Government in restricting import of Tinplate Waste and banning of use of second-hand tin containers in packing vanaspati, indigenous demand of tinplate has shown marked rise. As the indigenous production of the main raw material *i.e.* IMBP coils is not much, these continue to be imported for the use of the industry.

4.11.2 The production of Tinplates of the two units during the past three years are given below :—

('000 tonnes)

Period	Oilcan Size	Non-Oilcan Size	Total
1981-82			
1982-83	33	25	58
April—Sept. '83	31	24	55
1983-84 (Estimated)	16	18	34
	43	35	78

CHAPTER V

RESEARCH & DEVELOPMENT CENTRE IN STEEL SECTOR

5.1.1 The SAIL's Research & Development Centre at Ranchi made a greater thrust during the year towards developing expertise for optimisation of technological and economic performance of steel plants.

5.1.2 The pilot test coke oven commissioned during the year was a major step towards conservation of coking coal through optimisation of coal blends and development of new coke making technologies. Studies on improvement of crushing index of coal blend by modifying configuration of hammers in the Hammer Mills at Rourkela Steel Plant and pilot plant tests on coal beneficiation at Durgapur Steel Plant washery alongwith upgradation of washery middlings by oil agglomeration process at pilot plant scale have revealed promising results. At Burnpur, an X-ray flourescence quant-meter has been installed for analysis and monitoring ash content of incoming coal, so that remedial measures could be taken wherever high ash coal was received. It is planned to instal such units in all the steel plants.

5.1.3 Based on successful development of technology for production of super basic sinter and its use in LD converters, the installation of sinter plants of 450 tonnes per day and 150 tonnes per day capacities are envisaged at Bokaro and Rourkela Steel Plants respectively. Trial results have established possibility of producing low phosphorous pig iron required for manufacture of ductile iron castings which are finding increasing application in engineering and transport sectors. A project on design development of an experimental blast furnace with UNDP assistance has been taken up for developing a technology for iron making suited to be characteristics of indigenous raw materials, e.g. poor quality of coking coal, adverse alumina to silica ratio in iron ore etc.

5.1.4 In the pursuit for updating performance of existing steel making units as well as introducing innovative technology, the Centre has developed optimum thermal and oxygen lancing regime in open-hearth furnace of Bhilai Steel Plant showing a saving of 12 per cent in fuel requirement and improvement in roof life by 25/26 heats per campaign. A project has been undertaken with UNDP assistance to adopt combined blowing steel making technology in Indian conditions which will help in improved yield and smoother operation of converter as well as production of low carbon steel.

5.1.5 As part of its programme for development of high quuality as well as research in areas of rolling mills and tribology, the Centre has developed new deoxidation practice to produce extra deep drawing steel required for automobile industry. At Rourkela Steel Plant, weather resistant steel of corten type has been produced for supplying corrosion resistant steel to Indian Railways. The roll lubrication trials have been successfully completed in Bokaro Steel Plant which has. minimised roll wear resistant rail having a tensile strength of 90 kg/nm^2 has been developed jointly with Bhilai Steel Plant to cater to the needs of Indian Railways.

5.1.6 A detailed report has been worked out by the Centre in the field of energy conservation which details measures aimed at conservation of energy, on short term and long term basis, to be completed in a span of 10 years in SAIL plants.

5.1.7 24 collaborative projects have been taken up with the Council of Scientific & Industrial Research Laboratories under SAIL-CSIR interaction programme. Progress on such projects is being closely monitered by a joint working group set up for the purpose.

5.1.8 The Centre has also taken initiative to involve universities/institutions in implementing various research and development plans and projects. At present, about a dozen projects are being pursued in collaboration with Institutes of Technology, School of Mines, Fuel Research Institute and Mechanical Engineering Research Institute.

5.1.9 The rotary kiln sponge iron pilot plant at Ranchi commissioned in March 1982 has had a number of campaigns till the end of the year using ores and coal from various mines indicating promising results. The Direct Reduction Pilot Plant

is designed to be a National testing centre in the area of sponge iron technology. Presently, raw materials for Vijayanagar Steel Project and for the proposed sponge iron plant at Alloy Steels Plant are being tested for their suitability for sponge iron making.

5.1.10 The Centre is planning to install the main frame computer system, developing computerised information and documentation system for the steel industry as also to cater for engineering and scientific computations which are very critical for effective research and development activities.

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 larger deposits are concentrated in five more or less distinct 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 the integrated steel plants, for their own use.

(ii) Large mechanised mines owned and operated by public sector organisations ; and

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

The production of iron ore (including concentrates) during the year 1983 is expected to be 38.8 million tonnes as against the recorded figure of 42.0 million tonnes in the previous year. State wise projections indicate that Goa would be the chief iron ore producer accounting for 11.4 million tonnes or 29.4 per cent of the total production during 1983 followed by Madhya Pradesh 9.9 million tonnes (25.5 per cent), Bihar 7.4 million tonnes (19.0 per cent), Orissa 5.5 million tonnes (14.2 per cent) and Karnataka 4.3 million tonnes (11.1 per cent). The remaining quantity would be accounted for by Andhra Pradesh, Maharashtra and Rajasthan.

6.1.2 Despatches of iron ore (including concentrates) in 1983 are estimated at 37.1 million tonnes, the share of internal consumption and exports therein being 15.9 million tonnes or 42.9 per cent 21.2 million tonnes or 57.1 per cent respectively.

6.2 *Manganese Ore*

6.2.1 Production of manganese ore during 1983 is projected at 1.32 million tonnes as compared to 1.48 million tonnes during 1982. Orissa, Karnataka, Madhya Pradesh and Maharashtra would be the leading producing states accounting for 34 per cent, 21 per cent, 19 per cent and 17 per cent respectively of the total production of manganese ore in 1983.

6.2.2 Despatches of manganese ore from the mines are estimated at 1.15 million tonnes in 1983 of which 0.80 million tonnes or 69 per cent are for internal consumption and 0.35 million tonnes or 31 per cent for exports.

6.3 *Chromite*

6.3.1 The production of chromite during 1983 is estimated at 421,612 tonnes as against 356,604 tonnes in 1982. Orissa is expected to continue as the principal producing States and would account for 344,212 tonnes or 82 per cent of the total production followed by Karnataka 74,554 tonnes or 18 per cent.

6.3.2 The total despatches of chromite in 1983 are estimated at 314,624 tonnes of which 203,562 tonnes or 65 per cent are for internal consumption and 111,062 tonnes or 35 per cent are for exports.

CHAPTER VII

PROGRESSIVE USE OF HINDI

7.1 The Government's policy relating to the use of Hindi for official purposes as contained in the Constitution, the Presidential Orders, the Official Languages Act and Rules is being implemented in the Deptt. 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 relating to the progressive use of Hindi in the Department of Steel is under the administrative control of 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 the Public Sector Undertakings under the administrative control of the Department of Steel. 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 this Department is as under :

Hindi Training :

Total number of employees (Group A, B, & C)	236
Total number of employees possessing requisite Hindi qualification	178
Pragya/Intensive Course/Special Departmental Examinations etc.	
Total number of employees under training	36
Total number of employees yet to be trained	3*
	22

*Included in total of 22.

Hindi Typewriting/Stenography :

	Trained	Under training	Yet to be trained
Hindi Typewriting	5	2	43
Hindi Stenography	7	..	28

The officers and staff of the attached offices and Public Sector Undertakings are given training under the Hindi Teaching 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. About 2,000 employees of Steel Authority of India Ltd. alone have benefited from this scheme in the last two sessions.

(ii) *Competitions*

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

(iii) *House Journals and help-literature*

All the public sector undertakings under the Deptt. of Steel are publishing their house journals in Hindi also. In addition, Hindi magazines and books are kept in the library.

SAIL have purchased the film 'Learn Devnagri' which is screened regularly. Lingua cassettes have also been purchased by SAIL and are made available to the employees on demand.

(iv) Inspections are carried out to assess 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 Salahkar Samiti attached to the Ministry of Steel and Mines has also been taking active interest in carrying out inspections of various offices and Public Sector Undertkaings attached to the Ministry of Seel and Mines. During the year under report the inspections of following Public Sector Undertakings have been carried out by the Hindi Salahkar Samiti :

(1) Central Marketing Organisation Branch Sales Office, Jammu.

(2) Central Marketing Organisations Branch Sales Office, Srinagar.

(3) Bhilai Steel Plant, Bhilai.

(4) Manganese Ore (India) Ltd., Nagpur.

(5) National Mineral Development Corporation, Hyderabad.

(6) Central Marketing Organisation Branch Sales Office, Jaipur.

(7) Central Marketing Organisation Branch Sales Office, Ahmedabad.

Hindi Officer has also inspected the Branch Sales offices of the Central Marketing Organisation, SAIL at Agra and Gwalior during this year.

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

(vi) There is a Hindi Salahkar 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 17-11-1976 and so far 11 meetings of this Samiti have been held.

(vii) There is also an Official Language Implementation Committee under the Chairmanship of 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 regularly. So far 40 meetings have been held.

Similarly, the attached offices and the Public Sector Undertakings have their own Official Language 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 1983-84 :—

(a) The work regarding the use of Hindi for the quarters ending 30-6-83; 30-9-83 and 31-12-83 can be seen from the following :—

(i) Total number of Hindi Communications received from any-where in the Department.	1803
(ii) Total number of communications replied to in Hindi	866
(iii) Total number of communications replied in English.	..

Position regarding originating correspondence

	Number Issued		
	Total	In Hindi	In English
(i) Letter issued by the office to offices in Hindi speaking regions	417	50	367
(ii) Telegrams sent to offices	5	5	..

Documents issued both in Hindi and English :

	Number issued		
	Total	In Hindi & English	In English
(i) General orders	395	395	..
(ii) Resolution & Notifications	83	83	..
(iii) Administrative & other reports	1	1	..
(iv) Papers laid before the House of Parliament	10	10	..
(v) Budget Performance of the Department for the year 1983-84	1	1	..
(vi) Government reviews on the Annual Reports	..	..	..
(vii) Agenda Notes and Minutes of the meeting of the Staff Council and Consultative Committee.	All Agenda papers and Minutes of Staff Council & Consultative Committee Meetings were normally issued bilingually.		

(b) *Notifications of officers in the Gazette of India*

Consequent of 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) IISCO STANTON PIPE FOUNDARY LIMITED, (a subsidiary company of IISCO).

(ii) Steel Authority of India Limited., (Head office),

(iii) Diamond Mining Project of N.M.D.C.

The number of offices notified so far comes to 35.

(c) A glossary of technical terms used in the Steel Industry has been prepared and about 2,800 entries have been finalised so far.

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ERRATA

Sl. No.	Page	Para	Line	For	Read
1.	2	2.4	12	fnuds	funds
2.	6	Annaxure-IC	'D' Col.last	-	2
3.	16	F.(ii)(i)	Col.2	Sinter Plant includin-g or Washin-g Plant at Gua.	Sinter Plant including ore Washing Plant Gua.
4.	20	(i)	-	Project of India	Project in India
5.	25	1	1	plants SAIL	plants of SAIL
6.	27	18.3	4	6,528 tonnes	66,528 tonnes
7.	28	2.1(3)	1	lint	limit
8.	35	4	1	6256.99	625.99
9.	38	3.1.5	4	over	ever
10.	42	-	-	NOTES	NOTE
11.	54	3.6.3	11	curtain	curtail
12.	56	3.6.6	1	replaced	replace
13.	58	3.8.4	4	It has expected	It is expect
14.	62	3.10.1	2	concertrate	concentrate
15.	62	3.10.2	6	are bring made	are being made
16.	63	3.10.7	10	omit the words	'and the project in progress
17.	68	3.12.4	4	non-remove plan	non plan
18.	72	3.16.4	2	refiactory	refractory
19.	79	4.2.4	2	70% 75%	70% to 75%
20.	80	4.2.5(v)	2	dvelopmens	developments
21.	83	4.8.2	1	5,92,080	5,92,080 tonnes
22.	84	4.8.5	Chart Col.2 Headin-g	1981-82	1980-81
23.	86	4.11.1	8	IMBP	TMBP
24.	88	5.1.5	2	quuality	quality
25.	93	7.3(i)	Chart Hindi Stenography Col.2 (under trainin-g)	-	1
26.	93	7.3(iv)	7	Seel	Steel

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