सत्यमेव जयते

REPORT 1976-77

GOVERNMENT OF INDIA
(BHARAT SARKAR)

MINISTRY OF STEEL AND MINES
(ISPAT AUR KHAN MANTRALAYA)

DEPARTMENT OF STEEL
(ISPAT VIBHAG)

NEW DELHI

REPORT

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N E W D E L H I

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APPENDICES

DEPARTMENT OF STEEL

1. MAIN FUNCTIONS AND ORGANIZATIONAL SET-UP

Main Functions of the Department

1.1 The Department of Steel forms part of the Ministry of Steel and Mines. It is, inter-alia, responsible for :—

(i) Planning and development of iron and steel industry, both in the public and private sectors including re-rolling mills, alloy steels and ferro-alloys;

(ii) Implementation of the Iron and Steel (Control) Order, 1956;

(iii) Formulation of policies relating to production, distribution, import and export of iron and steel;

and

(iv) Concurrent development of input industries like iron ore and manganese ore to meet the growing requirements of iron and steel industry;

A list of the subjects allocated to the Department of Steel is given in Appendix I.

Organisational Set-up

1.2 Prior to October 7, 1976 the posts of Secretary, Department of Steel and of Chairman, Steel Authority of India Limited (SAIL) were held by the same person. Pursuant to the Government decision to have separate incumbents for the two posts, Shri Saran Singh was appointed Secretary in the Department of Steel; he assumed charge on 2nd November, 1976. Besides the Secretary, the Department of Steel has—1 Additional Secretary, 4 Joint Secretaries, 4 Deputy Secretaries and 7 Under Secretaries. The Planning and Development Wing is an integral part of the Department; it has 1 Industrial Adviser, 3 Development Officers and 2 Assistant Development Officers.

The Hindi Cell of the Department comprises 1 Hindi Officer, 4 Translators and 2 Typists. Apart from translation work, this Cell deals with the implementation of instructions issued by the

Ministry of Home Affairs regarding progressive use of Hindi in the work of Government undertakings and the Hindi Teaching Scheme of the Ministry of Home Affairs.

Including the supporting staff at the intermediate and lower levels, the total strength of the Department is 338.

An organisational chart of the Department is given in Appendix-II.

1.3 Steel Authority of India Limited, which functions under the administrative control of the Department, has the following subsidiaries:—

(i) Hindustan Steel Limited;

(ii) Bokaro Steel Limited;

(iii) Salem Steel Limited;

(iv) National Mineral Development Corporation Limited;

(v) Bolani Ores Limited;

(vi) Hindustan Steel works Construction Ltd.;

(vii) Metallurgical and Engineering Consultants (India) Ltd.;

(viii) SAIL International Limited;

(ix) Metal Scrap Trade Corporation Ltd;

(x) India Fire Bricks and Insulation Co. Ltd., and

(xi) Bharat Refractories Ltd.

Besides the above, SAIL has interest in the following companies:—

(i) Indian Iron and Steel Co. Ltd;

(ii) Visveswaraiya Iron and Steel Ltd;

(iii) Manganese Ore India Limited; and

(iv) Mandevi Pellets Limited.

1.4 The office of the Iron and Steel Controller, Calcutta, is an attached office of the Department. Besides performing statutory duties under the Iron and Steel (Control) Order, 1956,

the Iron and Steel Controller advises the Government in formulation of export and import policies, levy of customs and excise duties, and other matters relating to the iron and steel industry. On production and distribution, the Iron and Steel Control Organisation is guided by the Steel Priority Committee presided over by the Secretary, Department of Steel. This Organisation issues regularly a quarterly bulletin called "Iron and Steel Control" which gives the statistical information on iron and steel of interest to Government, trade and consumers. It has 6 small regional offices located at New Delhi, Kanpur, Calcutta, Madras, Hyderabad and Bombay. Details of their duties and functions are given in Appendix-III.

Special Measures for Improvement and Efficiency

1.5 The Department undertook a number of efficiency measures during the year to improve both quality and quantity of work. These included:—

(i) Adoption of the Integrated Financial Advice System and the Departmentalisation of Accounting with a view to improving financial management and control;

(ii) Introduction of a system of regular monitoring and evaluation of progress of projects under construction and performance of plants in operation, as also monitoring of progress of implementation of all important decisions;

(iii) Rational distribution of work among sections and officers;

(iv) Introduction of Desk Officer System in two more areas of work;

(v) Systematic analysis and review of pending cases; as a result, pendency has been substantially reduced, specially since July, 1976;

(vi) Review of incoming reports and returns with a view to minimising them; as a result, 13 of them of varying periodicities were discontinued.

2. THE YEAR AT A GLANCE

1. *Record Steel Production*

Production of 10 million tonnes of crude steel in the country by the integrated steel plants and other producers, including electric arc furnaces, billet and other rerollers, in 1976-77, is an all-time record. The total saleable steel production for the entire sector is estimated at over 7.8 million tonnes which is also a record. The production of 6.922 million tonnes of saleable steel by the integrated steel plants, which represents 88.7% of the total production in 1976-77 recorded a growth of 19.8% over the corresponding production in 1975-76. The integrated plants output of ingot steel at 8.428 million tonnes in 1976-77 registered an increase of 16.2% over 1975-76.

2. *Better Industrial relations and workers participation in management*

The industrial relations situation in the steel plants and other subsidiaries of SAIL was quite satisfactory during 1976-77. There was also a distinct qualitative change in industrial relations resulting in greater cooperation from the workers. There was added emphasis on workers' participation in management too. Apart from Bi-partite Committees at the departmental and plant level, Shop Floor Committees were set up in operation and maintenance departments. A prominent trade union leader was appointed as Director on the Board of Directors of SAIL. An agreement on the scheme for payment of bonus linked with production and productivity was reached with the labour unions in Bhilai and Rourkela Steel Plants. The scheme has also been adopted by TISCO.

3. *Restructuring of Hindustan Steel Limited*

In pursuance of Government decision of restructure Hindustan Steel Limited, three new Companies, viz., Bhilai Ispat Limited Rourkela Ispat Limited and Durgapur Mishra Ispat Limited were incorporated in October, 1976. The three new Companies are subsidiaries of SAIL.

4. *White Paper on Steel Industry*

In pursuance of a recommendation made by the Estimates Committee (Fifth Lok Sabha) in its 20th Report, a White Paper

on Steel Industry was placed in Parliament in May, 1976. It deals with the entire gamut of Steel industry including production, demand, technology, marketing, future planning, design and consultancy, research and development programmes.

5. *Commissioning of the Spirally Welded Pipe Plant at Rourkela Steel Plant*

The spirally welded pipe plant was commissioned at Rourkela Steel Plant in June, 1976.

6. *Progress of Bokaro Steel Limited*

The Hot Strip Mill, the most critical unit of Bokaro Stage I (1.7 million tonnes) was formally commissioned on the 1st May, 1976. Trial runs on the Tandem Mill in the Cold Rolling Mill Complex were started on 28th December, 1976. Thus, the construction of the first stage of Bokaro Steel Plant has been almost completed except for the third blast furnace which is due to be blown in October, 1977. As regards the expansion of Bokaro Steel to a 4 million tonne plant, so far as the Cold Rolling Mill Complex is concerned it has since been decided that the expansion will be planned and executed by Indian Organisations such as MECON, Engineering Project of India, and Bharat Heavy Electricals Limited, and the Heavy Engineering Corporation.

7. *Salem Steel Limited*

The first stage of the Salem Steel Limited involving cold rolling of 32,000 tonnes of stainless steel from imported hot bands was approved by Government in January, 1977. The outlay for this project is of the order of Rs. 125.81 crores.

8. *Exports of Bailadila Iron Ore*

Though the total production of 5.465 million tonnes from Bailadila—14 iron ore mine and shipment of 5.039 million tonnes of iron ore represented an increase of 454 and 394 thousand tonnes, respectively, over the performance in the previous year, the achievements could have been better but for the serious set-back as a result of the dispute over the enhancement of port and vessel charges at Visakhapatnam Outer Harbour. Consequently, the Japanese buyers withdrew their ships and did not nominate fresh ones, resulting in complete disruption

of trade and production for well over a month from 20-12-1976. Non-shipment of ore led to heavy accumulation of stocks at the mine site and the port bringing the mining operations to a grinding halt. Shipments started picking up gradually from 22-1-1977.

9. *Bailadila Deposit No. 5*

The technological problems encountered in the tunnel drivage at Bailadila—5 mine site were successfully tackled and the entire civil and structural works of the project were completed during the year. Trial production has already commenced.

10. *Pelletisation Plant*

In order to utilise the fines produced from Donimalai and Bailadila Mines, it has been decided to set up two pellet plants each with a capacity of about 2 million tonnes per annum. The updated feasibility report for the Donimalai Pellet Plant is being processed and negotiations have been taken up for setting up the plant. Engineering consultants have also been appointed for the project. The possibility of obtaining requisite finance for the projects is being explored. Efforts are being made simultaneously to obtain long-term tie-ups for the sale of pellets to be produced by the proposed plants.

11. *Feasibility Studies*

N.M.D.C. commenced geological and mineralogical investigations on the Bababudan Magnetic deposits in Karnataka in June, 1976, with a view to making a techno-economic feasibility study on lines similar to Kudremukh Project.

12. *Metallurgical & Engineering Consultants (India) Limited*

In the face of stiff competition from internationally well-known firms of several advanced steel producing countries, MECON was awarded by the Federal Government of Nigeria the prestigious contract for rendering consultancy and monitoring services for the setting up of 2 direct reduction integrated steel plants each of 1 million tonne capacity, in that country. The scope of work for MECON embraces all disciplines ranging from the setting up of integrated steel plants including scheduling, man-power planning, supervision of construction upto commissioning and advice on related techno-economic matters.

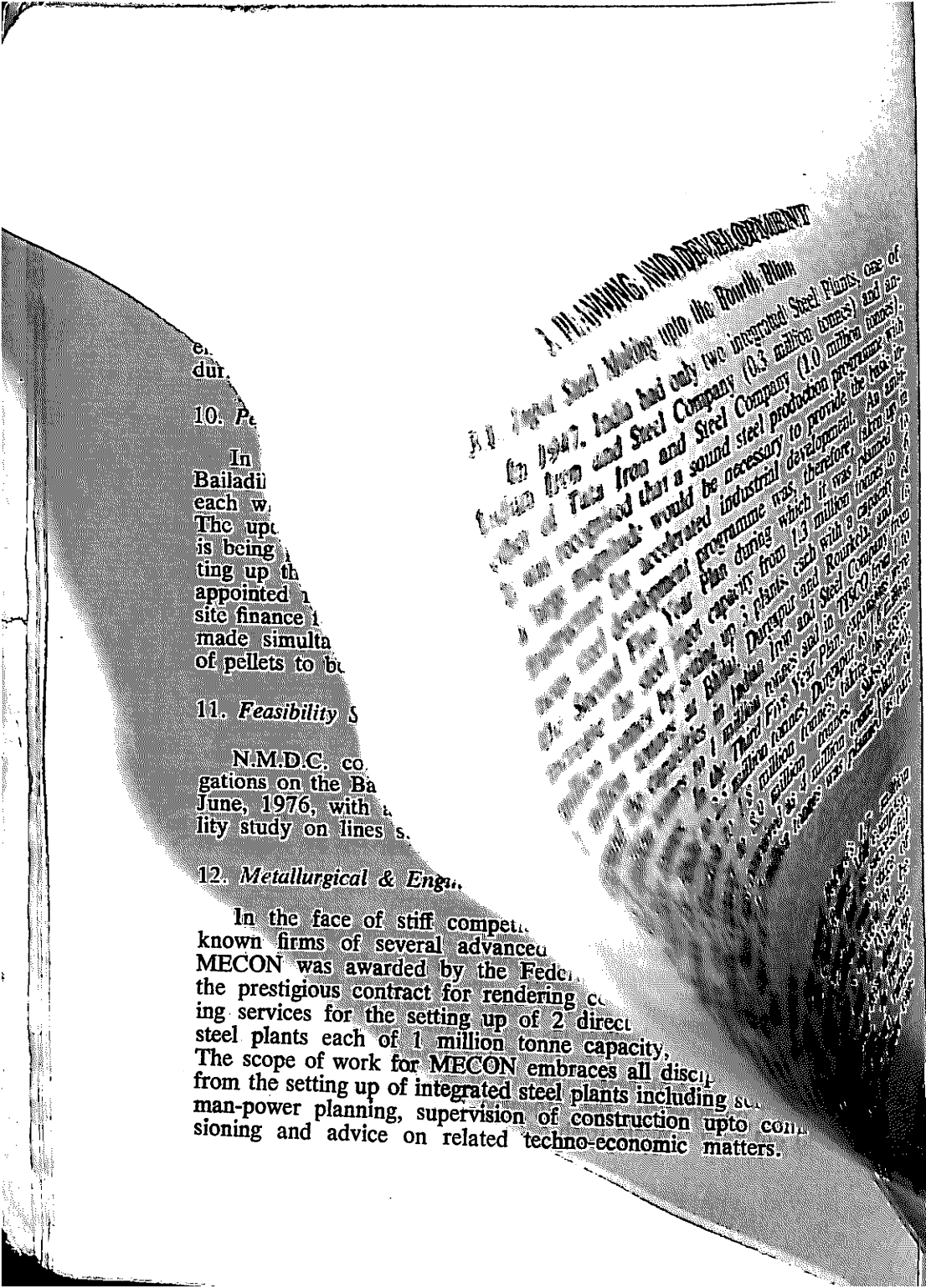
13. *Kudremukh Iron Ore Company Limited*

A wholly-owned Government Company was registered on the 2nd April, 1976 to implement and manage the Kudremukh Iron Ore Project. Canadian Met-Chem Consultants Limited, Montreal, a Canadian subsidiary of US Steel Corporation, have been appointed as Mining Associate-*cum*-Engineer Constructor for this project. They have engaged the services of MECON for detailed engineering in the concentrator and crusher plants and of Hindustan Steelworks Construction Limited for civil engineering in these zones.

Site excavation in the concentrator plant area was taken up by HSCL on 5-11-1976. Detailed survey of the alignment of the pipeline, through which the concentrate will be transported in slurry form from the project to the port, is progressing. The locations of the tailings dams have been finalised and tenders for construction will be invited shortly. Work on the development of the infra-structure, *viz.*, port, power and road, is progressing according to schedule.

14. *Exports*

It is significant to note that from the position of a net importer, India emerged in 1976-77, as a net foreign exchange earner in international iron and steel trade. The country's total exports amounted to Rs. 331.9 crores against the total imports of Rs. 99.9 crores in the first nine months of 1976-77. Compared to 1975-76, the exports registered a sharp increase of over 200% in value, inspite of keen competition in the international market due to a general trend of surplus in all the major steel producing countries.



(ii) Cold Rolled Grain Oriented Sheets (CRGO) and Cold Rolled Non-oriented Sheets (CRNO) Projects at Rourkela;

(iii) Seamless Tube Project at Durgapur;

(iv) Forge Shop Project at Visvesvaraya Iron and Steel Limited, Bhadravati;

(v) Ferro-Vanadium Project under SAIL;

(vi) Sponge Iron Project at Kothagudem, Andhra Pradesh;

(vii) Bailadila, Donimalai, and Meghahatuburu Mines under National Mineral Development Corporation (NMDC);

(viii) Kudremukh Iron Ore Project;

(ix) Augmentation of steel making facility at Alloy Steels Plant (ASP), Durgapur;

(x) Modernisation/revamping of Hot Strip Mill at Rourkela;

(xi) Salem Steel Project at Salem;

(xii) New Steel Plants at Visakhapatnam and Vijayanagar; and

(xiii) Feasibility studies on other possible locations for steel plants;

3.4 *Demand and trend in production*

The domestic demand of finished mild steel is estimated at about 7.75 million tonnes by 1978-79, while the production is expected to be 8.8 million tonnes including 1.06 million tonnes from the Electric arc furnace Units (Mini-Steel Plants) and re-rollers.

3.5. The uptrend in steel production during the last 3 years was most significant in 1976-77. The output of saleable steel at over 7 million tonnes by the integrated steel plants and the Alloy Steel Plant and VISL registered an impressive increase of 19.3% over the production in 1975-76 which was itself 17.4% higher than in 1974-75. The year's production exceeded the target by 6.6%. The overall capacity utilisation of the plants reached 91.4% as against 83.3% during the previous year. The production of ingot steel totalled 8.666 million tonnes during

3. PLANNING AND DEVELOPMENT

3.1. *Ingot Steel Making upto the Fourth Plan*

In 1947, India had only two integrated Steel Plants, one of Indian Iron and Steel Company (0.3 million tonnes) and another of Tata Iron and Steel Company (1.0 million tonnes). It was recognised that a sound steel production programme with a large magnitude would be necessary to provide the basic infrastructure for accelerated industrial development. An ambitious steel development programme was, therefore, taken up in the Second Five Year Plan during which it was planned to increase the steel ingot capacity from 1.3 million tonnes to 6 million tonnes by setting up 3 plants, each with a capacity of 1 million tonnes at Bhilai, Durgapur and Rourkela, and to expand the capacities in Indian Iron and Steel Company from 0.3 million tonnes to 1 million tonnes and in TISCO from 1 to 2 million tonnes. In the Third Five Year Plan, expansions were planned for Bhilai to 2.5 million tonnes, Durgapur to 1.6 million tonnes and Rourkela to 1.8 million tonnes, taking the aggregate installed capacity to 8.9 million tonnes. Subsequently, Bokaro Steel Plant was conceived as 4 million tonne plant of which the first stage of 1.7 million tonnes was planned as part of the Fourth Plan.

3.2. *Fifth Plan Programme*

In the Fifth Five Year Plan period, Bokaro's 1.7 million tonnes stage was completed. The Cold Rolling Mill complex, which was the last unit to be commissioned, had its successful trial runs in December, 1976. The 4-Million tonne stage of the plant (without the Cold Rolling Mill) is expected to be reached by June, 1979, the Cold Rolling Mill, by December, 1982. With regard to IISCO, Plans have already been drawn up for rehabilitation and modernisation of the plant. In view of the longer gestation period required in the Steel Industry, various alternatives for expansion and devlopments are also under consideration.

3.3. *Other Schemes*

Some of the other important schemes under implementation/consideration at present are :—

(i) Refractory Plant at Bhilai;

(ii) Cold Rolled Grain Oriented Sheets (CRGO) and Cold Rolled Non-oriented Sheets (CRNO) Projects at Rourkela;

(iii) Seamless Tube Project at Durgapur;

(iv) Forge Shop Project at Visvesvaraya Iron and Steel Limited, Bhadravati;

(v) Ferro-Vanadium Project under SAIL;

(vi) Sponge Iron Project at Kothagudem, Andhra Pradesh;

(vii) Bailadila, Donimalai, and Meghahatuburu Mines under National Mineral Development Corporation (NMDC);

(viii) Kudremukh Iron Ore Project;

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the year exceeding the target by 2.4% and marking an increase of 15.8% over 1975-76.

3.6. Apart from the integrated steel plants, a capacity of about 3.8 million tonnes has been sanctioned to electric arc furnace units. The Electric Arc Furnace Industry produces mild steel as well as certain grades of alloy and special steels. During the period of steel shortage, caused by limited production from the integrated steel plants, these units had played a vital role in meeting the country's requirement of mild steel reinforcement bars and light structurals. These units have also contributed to minimise import requirement of steels of various grades. Due to the wide variety of requirement of special steels, it is neither feasible nor economical to produce all grades and sizes of steels. Even advanced countries like USA and Japan have to meet some of their requirements through imports. However, all-out efforts are being made to reduce the dependance on other countries for our requirements of alloy and special steels. The estimated production from this sector in terms of liquid steel is about 1.3 million tonnes of mild steel and alloy and special steels, which is likely to increase to about 1.6 million tonnes during 1977-78.

3.7. With constant efforts to increase the production from the existing facilities and also to diversify production into sophisticated grades of steels and alloy steels, it has been possible to reduce imports to a large extent. It can be seen from the recent performance that against our import bill of about Rs. 370.6 Crores in 1974-75, our actual imports in 1976-77 (April to December) have been only about Rs. 99.9 Crores.

3.8. With the increased production, there has been a spurt in the export of steel from the available surpluses of domestic production. It is noteworthy that the total value of exports during 1976-77 was almost three times the value of exports in 1975-76.

3.9. It is envisaged that world steel production is likely to reach a figure of about 1,750 million tonnes by 2,000 A.D. and the share of the developing countries may be about 550 million tonnes. Keeping this in view and the expected rapid growth in the country's economy, it is desirable to plan for a further rise in our steel making capacity. In this context, a perspective plan is being worked out by Steel Authority of India Ltd. which would take into account the available resources and the infrastructure facilities to be planned as well as raw material linkages.

4. PRODUCTION, DISTRIBUTION AND PRICES

4.1 *Record Steel Production.*—Production of 10 million tonnes of crude steel in the country by the integrated steel plants and other producers including electric arc furnaces, billet and other re-rollers, in 1976-77, is an all-time record. The total saleable steel production for the entire sector is estimated at over 7.8 million tonnes which is also a record. The production of 6.922 million tonnes of saleable steel by the integrated steel plants, which represents 88.7% of the total production in 1976-77 recorded a growth of 19.8% over the corresponding production in 1975-76. The integrated plants output of ingot steel at 8.248 million tonnes in 1976-77 registered an increase of 16.2% over 1975-76. Category wise details of production of iron and steel during last five years are given in Appendix IV.

Steel Priority Committee

4.2 There has recently been increase in production of most categories of saleable steel. In view of easy availability of the steel materials, the Steel Priority Committee's (SPC) allocation was dispensed with, and restrictions on the end use of pig iron and steel were removed from December, 1975. The SPC, however, reviews the position from time to time. Wherever any special category of steel not produced in the country is required, imports are allowed freely. The standardisation of extras is reviewed constantly by the Joint Plant Committee. At its meeting held on 17th January, 1977, the SPC noted that there was a conscious effort by all producers to meet the specific requirements of the consumers not only of priority sectors, but also of the general users. Wherever there are special quality requirements which help in import substitution, the producers give special consideration to the production of such steels.

4.3 The main producers had appointed by the close of the year 85 Customer Contract Officers at most of the important steel consuming centres. They had also opened 42 stockyards and 94 consignment agents all over the country.

4.4 The following table shows the trend in the import of iron and steel according to the DGCIS figures :—

	Quantity (Million tonnes)	Value (Rs. in crores)
1974-75	1·144	370·6
1975-76	0·498	206·1
1976-77 .. .. (Apr-Dec only)	0·262	99·9

Sale

4.5 The domestic sale of steel by integrated steel plants increased by 26% in 1976-77 to 5.68 million tonnes from 4.51 million tonnes in 1975-76. Total exports in 1976-77 were 10.49 million tonnes registering an increase of 178.4% over 0.506 million tonnes in 1975-76.

4.6 Notwithstanding the significant increase in domestic sale and export of steel during 1976-77, the industry has carried a heavy stock of over 1.5 million tonnes. Measures to stimulate off-take of steel are under active consideration.

4.7 Besides steel, the production of saleable pig iron has also increased by 28% from 1.4 million tonnes in 1975-76 to 1.8 million tonnes in 1976-77. While domestic sale of pig iron fell from 0.9 million tonnes in 1975-76 to 0.8 million tonnes in 1976-77, export registered sharp increase of 233% from 0.3 million tonnes in 1975-76 to 1.02 million tonnes over the same period.

Prices

4.8 The price policy for steel which was introduced with effect from 15th October, 1973 continued to be followed during the year. The main objective of this policy is to ensure supply of steel to meet the priority requirements of Government Departments, public sector undertakings and also some sectors of the industry at a fairly low price in order to benefit the largest section of the society. This policy aims at mopping up the surplus profit in the open market or with the steel users. The main features of the policy are given below :—

(i) JPC prices of plates, structurals and railway materials which are pre-dominantly used by the State and Central Governments, public sector undertakings and basic industries continued to be the same as it was on 15th October 1973;

(ii) The prices of all other categories were revised up-wards from 15th October, 1973. These items had considerable amount of premium in the market due to their prices being low on the one hand and the ability of steel using industries to earn large profit on the other. The increase in prices of these categories of steel had therefore the effect of mopping up surplus profit;

(iii) A central fund has been created. The difference between the selling prices of steel and the retention prices after tax payment is credited to this fund. The fund is maintained by SAIL. It is used for approved schemes of plant rehabilitation, creation of additional facilities for improving production, balancing facilities, renewal, replacements, etc. Withdrawal from the fund is permitted only in consultation with the Planning Commission for the aforesaid purposes.

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5. IMPORT AND EXPORTS

5.1 *Imports*—Imports of iron and steel during 1976-77 were drastically cut due to greater production and better domestic availability. To ensure that the industrial requirements of steel are met fully, import policy for 1976-77 categorised importable items of iron and steel and ferro-alloys into three groups, namely, (i) item for which there is no domestic production and full import is allowed, (ii) items for which there is domestic production to meet a part of the demand and imports are restricted to percentages specified in the policy and (iii) items which are produced within the country and which can be met by the main steel plants. The items falling under Group I which are canalised were also covered by direct allotment procedure for allotment by the canalising agency. For the items falling under Group III the actual users are required to register their annual requirements with the Steel Authority of India Limited who would give clearance for import by SIL to the extent SAIL cannot arrange domestic supply.

5.2 The canalising agency for import of all canalised items of steel other than stainless steel, continues to be SAIL International Ltd. Import of stainless steel sheets, plates and strips is canalised through the Minerals & Metals Trading Corporation Ltd. (MMTC). The canalising agency for import of melting scrap and re-rollable scrap is Metal Scrap Trade Corporation (MSTC).

5.3 **Import of steel during 1976-77** has been mainly in sophisticated varieties for which the domestic production is not adequate to match the demand.

5.4 Imports by canalising agencies during 1975-76 and 1976-77 were as below :

(Qty. in tonnes and value in crores of Rupees)

	MMTC		SIL	
	Qty	Value	Qty	Value
1975-76	32,257	23·54	2,29,724	74·94
1976-77	9,142	14·36	2,54,134	88·33

5.5 Details of total imports of iron and steel during 1974-75, 1975-76 and April-December, 1976 are given in Appendix V.

5.6 *Exports.*—1976-77 has been a year of surplus and higher availability of iron and steel for which outlets have to be found through export to maintain the tempo of production. There was keen competition in the international market due to a general trend of surplus in all the major steel producing countries. In spite of this, exports during 1976-77 were 10.22 lakh tonnes of pig iron valued at Rs. 71.33 crores and 14.09 lakh tonnes of steel valued at Rs. 260.53 crores. Export of ferro-alloys during 1976-77 was 54,551 tonnes valued at Rs. 17.04 crores. In effect, the country is likely to have a sizeable net foreign exchange earning in the iron and steel trade. It is noteworthy that inspite of keen competition, SIL has been able to achieve a high level of exports of iron and steel. The data on export of iron and steel and ferro-alloys during 1974-75, 1975-76 and 1976-77 are given in the statement at Appendix VI.

5.7 MSTC continued to be the canalising agency for export of ferrous scrap. The statement at Appendix VII gives the data on export of ferrous scrap during 1974-75, 1975-76 and 1976-77 (April 1976-February, 1977).

6. THE PUBLIC SECTOR

The significant expansion of India's steel making capacity leading to the reversal in domestic supply position from 'shortage' to 'surplus' for home consumption and export has been brought about by the remarkable growth of the public sector in recent years. While augmenting the steel-making capacity in the public sector, the development strategy adopted has embraced the modernisation and expansion of the private sector too. In the sections following an account is given of the position and prospects of both the sectors.

6.1 *Steel Authority of India Limited*

Authorised and Paid-up Capital

6.1.1 The authorised capital of the Company is Rs. 2,000 crores. Its paid-up capital went up from Rs. 1346.15 crores as on 31-3-1975 to Rs. 1401.05 crores on 31-3-1976 (excluding share money of Rs. 57.45 crores pending allotment). In addition, Government loans amounting to Rs. 199.69 crores were advanced to the company during 1975-76 for its subsidiaries. The amount of Government loans outstanding as on 31-3-1976 was Rs. 471.71 crores.

Expenses

6.1.2 The total revenue expenses of the Company for 1975-76 amounted to Rs. 396.42 lakhs as compared to Rs. 251.75 lakhs in 1974-75. The increase was mostly due to the increase in interest and management fee on loans which amounted to Rs. 333.70 lakhs in 1975-76, as compared to Rs. 194.42 lakhs in 1974-75. After meeting the expenses, the Company was left with a small surplus of Rs. 2,546. As in 1974-75, the Company did not draw any funds from Government as grant in aid in 1975-76.

Capital Investment Position

6.1.3 The Company's equity investment increased from Rs. 1,372.19 crores as on 31-3-1975 to Rs. 1446.42 crores as on 31-3-1976. The equity investment position in the various

companies in which Steel Authority of India Ltd. have acquired interest is indicated below :—

(Rs. in lakhs)

Name of the Company	As on 31-3-75	As on 31-3-1976
SUBSIDIARIES		
1. Hindustan Steel Limited.	66,422·00	72,792·00
2. National Mineral Dev. Corpn. ..	8,404·03	8,904·03
3. Bokaro Steel Limited	60,000·00	60,042·31*
4. Hindustan Steelworks Construction Ltd.	50·00	100·00
5. Salem Steel Limited.	812·53	1,052·53
6. Bolani Ores Limited.	50·50	50·50
7. Metallurgical & Engineering Consultants (India) Ltd.	0·05	0·05
8. Metal Scrap Trade Corpn. Ltd. ..	16·00	16·00
9. SAIL International Limited. ..	1·00	1·00
10. Indian Firebricks & Insulation Co. Ltd.		**
	1,35,756·11	1,42,958·42
OTHER COMPANIES		
1. Indian Iron & Steel Co. Ltd. ..	106·54	106·54
2. Manganese Ore (Indiv) Ltd. ..	36·62	36·62
3. Visvesvarava Iron & Steel Ltd. ..	1,320·00	1,420·00
4. Mandevi Pellets Ltd.	—	—
Total :	1,463·16	1,683·16
Grand Total : ..	137,219·27	144,641·58

*Investment in Bokaro Steel Ltd. includes investment in Bharat Refractories Ltd.

**The investment is Rs. 20 only.

In 1976-77, an amount of Rs. 98.54 crores was given as equity and an amount of Rs. 193.61 crores as loan by Government to enable the Company to finance expenditure on capital schemes of its subsidiaries.

Financial Results

6.1.4 The total turnover of the subsidiaries of the Company in 1975-76 was Rs. 1032.40 crores, as against Rs. 1112.95 crores in 1974-75. The total net profit in 1975-76 was Rs. 30.66 crores, as compared to a profit of Rs. 39.27 crores in

1974-75. The financial results of each of the subsidiaries are indicated below :—

(Rs. in crores)

Name of Subsidiary	1974-75	1975-76
1. Hindustan Steel Ltd.	(+)48 24	(+)44 ·66
2. Bokaro Steel Ltd.	(—)11 ·65	(–)16 ·94
3. SAIL International Ltd.	(+)0 ·11	(+)1 ·01
4. Metallurgical & Engg. Consultants (India) Ltd.	(+)0 ·06	(+)0 ·57
5. Hindustan Steelworks Construction Ltd.	(+)1 ·04	(+)1 ·29
6. National Mineral Dev. Corporation Ltd.	(+)1 ·20	(+)0 ·68
7. Bharat Refractories Ltd.	(–)0 ·09	(—)0 ·22
8. Metal Scrap Trade Corpn. ..	(+)0 ·20*	(+)0 ·16
9. Bolani Ores Ltd. .. .. .. (Oct-Sept-Financial Year)	(–)0 ·38	(—)0 ·55
Total :	(+)39 ·27	(+)30 ·66

*Relates to 18 months period ended 31-3-1975.

Production Performance

6.1.5 The year 1976-77 witnessed a record production of steel from the integrated steel plants. The total production of ingot steel and saleable steel from these plants was 8.428 million tonnes and 6.992 million tonnes, respectively, as against 7.251 million tonnes of ingot and 5.778 million tonnes of saleable steel in 1975-76. This represents additional production of 1.177 million tonnes of ingot (16.2% higher) and 1.144 million tonnes of saleable steel (19.8% higher) over the production in 1975-76. The overall capacity utilisation for all the steel plants, excluding Bokaro (where some units were at gestation stage), in terms of saleable steel went up from 83.6% in 1975-76 to 91.9% in 1976-77. Bhilai Steel Plant and TISCO operated at 102.7% and 103.3% of the rated capacity in 1976-77. At Rourkela Steel Plant, capacity utilisation went up from 85.0% in 1975-76 to 95.9% in 1976-77.

Industrial Relations

6.16 The industrial relations situation in the Steel Plants and other subsidiaries of Steel Authority of India Ltd. was

quite satisfactory during 1976-77. The loss of man hours due to labour troubles in the four steel plants of Hindustan Steel Limited came down from 49,268 in 1975-76 to only 296 man-hours in 1976-77. There was also a distinct qualitative change in industrial relations during the year resulting in greater cooperation from the workers and in a climate greatly conducive to higher production. The record production of steel in 1976-77 and the substantial improvement in capacity utilisation were largely due to a marked improved in industrial relations, greater discipline among the workers, closer cooperation between labour and management at the shop floor level and in production programmes.

Bonus Scheme

6.1.7 Steel Authority of India Ltd. had drawn up a scheme for payment of bonus linked with production and productivity under Section 31-A of the Payment of Bonus Act to the employees of public sector steel plants. The scheme is based on two factors of performance—capacity utilisation in terms of saleable steel (80% and above) and labour productivity expresesd as saleable steel produced per man-year. The scheme covers all employees drawing total emoluments upto Rs. 1600/- per month. An agreement on the scheme had been reached with the labour unions in the Bhilai and Rourkela Steel Plants in 1976-77. The scheme has also been adopted by TISCO. At other places, the negotiations were in progress.

Workers Participation in Management

6.1.8 In the context of Government policy to encourage workers participation in management, a prominent trade union leader was appointed on the Board of Directors of the Company.

Research and Development

6.1.9 The Research and Development Organisation continued its work on a number of R&D projects during the year. Some of the important Projects included LD lining life improvement; development of high strength low alloy; coal dust injection in blast furnace to reduce consumption of coking coal; de-ashing of coal; sponge iron development work; beneficiation of iron ore and refractory raw material; agglomeration of ore fine and other metallurgical wastes. The projects are being implemented in close cooperation with the steel plants.

Important Schemes

6.1.10 A number of capital schemes were sanctioned/recommended to Government for sanction during the year 1976-77. The important amongst them are indicated below :

(a) Setting up of the Meghahatuburu Iron Ore Project of NMDC at an estimated cost of Rs. 49.10 crores. The project is designed to meet the ore requirements of Bokaro Steel Plant for its expansion upto the stage of 4.75 million tonnes. The mine is planned to yield 1.34 million tonnes of lump and 2.96 million tonnes of fines of acceptable quality per year.

(b) Setting up of a Special Steels Plant at Salem at an estimated cost of Rs. 516.88 crores. The project envisages production of stainless steel sheets, electrical steel sheets and other special steels;

(c) Modernisation of 1700 mm Semi-continuous Hot Strip Mill of Rourkela Steel Plant at an estimated cost of Rs. 26.75 crores;

(d) Installation of facilities for the production of Cold Rolled Silicon Electrical Steels at Rourkela Steel Plant at an estimated cost of Rs. 137.7 crores. The production of 37,500 tonnes of Cold Rolled Grain-oriented (CRGO) and 36,000 tonnes of Cold Rolled Non-Oriented (CRNO) sheets every year is envisaged;

(e) Installation of an additional 50-tonne capacity Electric Arc Furnace for augmenting the utilisation of Blooming and Billet Millet Alloy Steels Plant at Durgapur at an estimated cost of Rs. 8.46 crores.

6.2 *Hindustan Steel Limited*

6.2.1 *Investment.*—The authorised capital of the Company as on 31.3.1976 was Rs. 750 crores. Its paid-up capital, which was Rs. 664.22 crores on 31.3.1975, went up to Rs. 727.92 crores on 31.3.1976. The entire capital is owned by Steel Authority of India Limited.

6.2.2 During 1975-76, an amount of Rs. 23.50 crores was drawn as loan from SAIL for meeting expenditure on capital schemes and on research and development schemes. An amount of Rs. 2.78 crores was repaid towards borrowing from

Government, bringing down the outstandings on this account to Rs. 346.57 crores, as on 31.3.1976.

6.2.3 During 1976-77 an amount of Rs. 83.69 crores was given by SAIL as equity and an amount of Rs. 19.91 crores as loan to enable the Company to finance expenditure on capital schemes. In addition, a loan of Rs. 83.15 lakhs was sanctioned by SAIL to meet the expenditure on the Research and Development Organisation.

6.2.4 *Production*:—The following table indicates the annual capacity of and production in the various units of the Company during the years 1975-76 and 1976-77 in relation to the target for 1976-77:—

(In 000' tonnes

Plants/Units	Ingot Steel	Saleable Steel
Bhilai Steel Plant		
Annual Capacity	2500	1965
1975-76	2209	1850
Target 1976-77	2250	1830
Actual 1976-77	2302	2019
Durgapur Steel Plant		
Annual Capacity	1600	1239
1975-76	1001	751
Target 1976-77	1100	825
Actual 1976-77	1091	901
Rourkela Steel Plant		
Annual capacity	1800	1225
1975-76	1282	1041
Target 1976-77	1350	1050
Actual 1976-77	1503	1174
Total Bhilai, Durgapur & Rourkela		
Annual capacity	5900	4429
1975-76	4492	3642
Target 1976-77	4700	3705
Actual 1976-77	4896	4094

Alloy Steels Plant, Durgapur		
Annual capacity	100	60
1975-76	90·3	46·8
Target 1976-77	83·0	42·4
Actual 1976-77	94·8	51·9

	Calcium Ammonium Nitrate 25% N2
Fertilizer Plant, Rourkela	
Annual capacity	460
1975-76	309
Target 1976-77	330
Actual 1976-77	318

6.2.5 It was a year of record performance for the company as well as for the plants concerned. The total production of 4.896 million tonnes of ingots and 4.094 million tonnes of saleable steel from the Bhilai, Durgapur and Rourkela Steel Plants was the highest so far and represented an additional production of 404.000 tonnes of ingots (9.0% higher) and 452,000 tonnes of saleable steel (12.4% higher) over the production in 1975-76. The production also exceeded the targets fixed in the beginning of the year by 4.1% in terms of ingot steel and by 10.5% in terms of saleable steel. Bhilai Steel Plant operated at 102.7% of its saleable steel capacity. The capacity utilization at Rourkela and Durgapur Steel Plant improved from 85.0% and 60.6% in 1975-76 to 95.9% and 72.7% respectively in 1976-77. The overall capacity utilisation went up from 82.2% in 1975-76 to 92.4% in 1976-77.

Similarly, the production of ingot steel as well as saleable steel at the Alloy Steel Plant, Durgapur and the production of CAN at the Fertilizer Plant at Rourkela was the highest so far.

6.2.6 *Working Results.*—The total sales for plants/stock yards and exports of Company's products ammounted to Rs. 740.41 crores in 1975-76. Sale of improted steel was, however, less by Rs. 210.71 crores, mainly due to HSL ceasing to be the canalising agency for imports. The net sales of the Company, therefore, stood at Rs. 619.20 crores in 1975-76, as against Rs. 804.79 crores in 1974-75.

6.2.7 The Company earned a net profit of Rs. 44.66 crores, in 1975-76 against the profit of Rs. 48.24 crores in 1974-75. The working results of the various units of the Company in

1974-75 and 1975-76 and the cumulative results since inception are indicated below :

(Rs. in crores)

	1974-75	1975-76	Cumulative since inception
Bhilai Steel Plant	(+)38·696	(+)28·215	(+)71·401
Durgapur Steel Plant	(—)14·320	(—)20·058	(—)210·001
Rourkela Steel Plant	(+)18·146	(+)28·327	(+)28·513
Alloy Steel Plant, Durgapur	(+)1·956	(+)3·975	(—)35·090
Fertilizer Plant, Rourkela	(+)2·709	(+)2·412	(—)14·785
Central Coal Washeries Orgn.	(+)1·069	(+)1·834	(+)6·810
Ramgarh Refractory Plant	—	(—)0·020	(—)0·020
Provision for unrealised Profit	(—)0·013	(—)0·024	(—)0·088
TOTAL :	(+)48·243	(+) 44·661	(—) 153·260

6.2.8 The profit for the year would have been more but for the impact of a number of cost escalatory factors amounting to about Rs. 49.0 crores. These mainly consisted of increases in railway freight, higher cost of furnace oil, power and stores and higher payments following the implementation of the wage agreement of July, 1975. However, higher production of steel, pig iron and fertilizers contributed about Rs. 39 crores as additional margin to off set partially the impact of cost escalations.

6.2.9 *Industrial Relations*—The industrial relations situation in the various plants/units of the Company was quite satisfactory during the year; the total loss of man-hours during 1976-77 was only 296 as against 41,981 in 1975-76.

6.2.10 *Workers Participation In Management.*—Apart from bi-partinte Committees at the plant level and at the departmental level, shop floor Committees were set up in all the operation and maintenance departments in the steel plants. The shop floor Committees discuss day to day shop problems and are responsible for reviewing production performance, increasing productivity and maintaining discipline at the shop floor.

There were 353 bi-partite Committees in the four steel plants of the Company at the end of 1976.

6.2.11 *CAPITAL SCHEME* : The work on the implementation of the various capital schemes continued during 1976-77. 4 MT expansion of Bhilai Steel Plant was originally scheduled for completion by September, 1979, but keeping in view the availability of resources and the demand and supply position of steel, it is now expected that the plate mill complex will be completed by December, 1981 and the 7th blast furnace complex by June, 1983. The mechanisation of Dalli Mines is expected to be completed by the middle of 1977 and the installation of the second sintering plant by December, 1977. The commissioning of the 9th coke oven battery which is being erected at Bhilai to serve as a stand-by unit during the period of shut-down of the existing batteries for rebuilding without affecting production, has been further postponed in view of the improved condition of the existing batteries, as a result of extensive repairs and regular maintenance. The work relating to the setting up of the refractory plant at Bhilai is progressing. The scheduled date for the completion of the plant is March, 1979.

6.2.12 At Rourkela Steel Plant, the spirally welded pipe plant was commissioned in June, 1976. The slag granulation plant is undergoing commission trials. Work is continuing on the setting up of a coal-based medium pressure boiler house. The proposal for the installation of the second naphtha reforming unit with a capacity of 180 tonnes per day of ammonia has been sanctioned by Government at an estimated cost of Rs. 18.60 crores. The work relating to this project is in progress and is expected to be completed in early 1979. Based on the Master Plan given by M/s ARMCO of USA and the feasibility report prepared by M/s DASTURCO, SAIL has recommended to Government for sanction a proposal to instal a cold rolled silicon electrical steel plant at Rourkela with a production capacity of 37,500 tonnes of CRGO and 36,000 tonnes of CRNO sheets per year at an estimated cost of Rs. 137.7 crores.

The additional hall coke oven battery at Durgapur (5A) was lighted on 20th February, 1977.

A proposal for the installation of an additional 50-tonne capacity Electric Arc Furnace for augmenting the utilization of Blooming and Billet Mill at Alloy Steel Plant, Durgapur, at an estimated cost of Rs. 8.46 crores was approved by SAIL in March, 1976.

6.2.13 *Refractory Plant of Assam Sillimanite Limited*:—The Refractory Plant of M/s Assam Sillimanite Limited continued to be managed by HSL, on behalf of Government, upto 10th February, 1976. The right title and interest of M/s Assam Sillimanite Limited in relation to this refractory Plant acquired by government under the Assam Sillimanite Ltd. (Acquisition & Transfer of Refractory Plan) Act, 1976, with effect from 11th February, 1976, vests with the HSL from the same date.

6.2.14 *Restructuring of HSL.*—In pursuance of Government decision to restructure Hindustan Steel Limited, three new Companies, Bhilai Ispat Limited, Rourkela Ispat Limited and Durgapur Mishra Ispat Limited, which are also subsidiaries of SAIL, with an authorised capital of Rs. 500 crores, Rs. 300 crores and Rs. 100 crores, respectively, were incorporated in October, 1976. Action is in hand for the transfer of assets and liabilities and the completion of other formalities.

6.2.15 *Personnel.*—The total number of employees in Hindustan Steel Limited as on 31st December, 1976 is shown in the following table indicating separately those belonging to Scheduled Castes and Scheduled Tribes :

	Total	No. belonging to S.C.	S.T.
Group A	8,812	90	25
Group B }	84,577	4,844	3,670
Group C }			
Group D	40,391	7,319	6,483
Total	1,33,780	12,253	10,178

6.3 *Bokaro Steel Limited*

Investment

6.3.1 As on the 31st March, 1977, the authorised capital of the company was Rs. 850 crores and the subscribed capital was Rs. 600.52 crores. The capital expenditure on the project as on above date amounted to Rs. 1327.26 crores of which the loan capital drawn from SAIL amounted to Rs. 547.24 crores. The revised capital budget of the project for the year 1976-77 is Rs. 155 crores.

6.3.2 The production performance for the year 1976-77 has been as follows :—

(In tonnes)

Item	Target	Actual	%age to target
Hot metal	1,750,000	1,737,999	99·31
Pig Iron	775,000	706,586	91·17
Ingot steel	900,000	956,485	106·28
Slab	765,000	854,959	111·76
HR Coils/ Thick Plates	600,000	673,159	112·19
H.R. plates/ Slit Coils	542,000	295,903	54·59

Working Results

6.3.3 The revised operation budget for the year envisaged a net loss of Rs. 19.70 crores after providing for depreciation amounting to Rs. 30.64 crores. During the period from April to November, 1976, the company incurred a net loss of Rs. 11.12 crores.

Construction

6.3.4 The hot strip mill, the most critical unit of stage-I, was formally commissioned on the Ist May 1976. This has paved the way for rapid strides in production of finished steel and assures fulfilment of the target set for the Bokaro Steel Plant during the Fifth Plan period. Yet another milestone has been reached with the start of trial runs of Tandem Mill in the Cold Rolling Mills complex on the 28th December, 1976. The other notable features of the progress of construction work during the period are commissioning of the second blast furnace on the 12th April, 1976, the third coke oven battery on the 27th June, 1976, shearing line No. 2 on the 15th September, 1976, and one slitting line on the 16th October, 1976 in the Hot Rolled Coil Finishing Section, and the lighting of the fourth and the last coke over battery of the first stage on the 11th December, 1976.

The construction of the first stage of 1.7 million tonnes is almost complete. Of the major units only the third blast furnace will be blown in late October, 1977.

The cumulative progress of construction on the first stage as upto 31st March, 1977 is as follows :—

	Unit	Total Qty	Quantity executed	%age to total
Earthwork	cum	1,39,12,832	1,38,64,485	99·9
Concrete & RCC	cum	20,32,161	20,30,145	99·9
Refractory erection	t	1,85,444	1,81,574	97·9
Structural erection	t	2,76,679	2,76,066	99·8
Mechanical erection	t	2,53,256	2,45,522	96·9
Electrical erection	t	40,124	39,625	98·8

6.3.5 The expansion of the plant in the second stage to four million tonne capacity is simultaneously in progress. The second stage (without the Cold Rolling Mill Complex) is expected to be completed by June, 1979, and the Cold Rolling Mill complex by December, 1982.

The position of supply of equipment for the second stage, against 1,40,837 tonnes ordered as upto November, 1976 is as follows :—

Source	Ordered	Balance (in tonnes)
U.S.S.R.	21,200	2,663
H.E.C.	42,359	16,600
M.A.M.C.	6,381	1,872
Other public sector Undertakings	44,070	35,779
Private Sector	26,807	14,384
	140,817	71,298

The progress of construction and erection of the second stage as on the 31st March, 1977 is as follows:—

Item	Unit	Total Qty	Quantity executed	%age to total
Excavation	cum	7,336,450	47,05,531	64·14
Concrete & RCC	cum	1,030,625	4,55,910	44·23
Refractory erection	t	1,45,483	39,737	31·31
Structural erection	t	1,32,172	54,521	41·25
Mechanical erection	t	2,01,159	21,871	11·00
Electrical erection	t	21,039	1,174	5·58

The work on three batteries of the expansion stage is in progress. The civil work on blast furnaces No. 4 & 5 is in an advanced stage and the erection work on the shell proper has started. The steel melting shop No. II is the most critical unit of the expansion programme. The supply of steel structures for this shop from the Consortium of indigenous industries has been behind schedule. The 5-stand tandem mill, which is yet another important unit of the second stage, is also being progressed vigorously.

The work on the slag granulation plant with an annual capacity of 1.35 million tonnes as also on an areial ropeway for transport of raw coal from Dugda to Bokaro, approved by Government is in progress.

Project Estimate

6.3.6 The third revised estimate for 1.7 million tonne-stage, comprising Rs. 867.5 crores for the plant proper and Rs. 74 crores for off-site facilities, making a total of Rs. 941.5 crores, is under consideration. The estimate for expansion of the plant to 4 (four) million tonnes, consisting of Rs. 897.6 crores for the plant proper and Rs. 49.6 crores for off-site facilities making a total of Rs. 947.2 crores, is also under consideration. The total investment at 4 million tonne-stage will amount to Rs. 1,888.7 crores. The expansion of cold Rolling Mills Complex to 4 million tonne stage is to be designed documented by Indian Organisations, *viz.* MECON, Engineering Projects of (India) Ltd. and Bharat Heavy Electricals Limited.

Bharat Refractories Limited

6.3.7 The financial year 1976-77 is the third year of working of the captive referactory plant of Bokaro Steel Limited, which is run by its subsidiary, namely, Bharat Refractories Ltd. As on 31st March, 1977, the authorised capital of this company is Rs. 2 crores, while the paid-up capital is Rs. 92.20 lakhs. The total expenditure so far on this plant amounts to Rs. 126.01 lakhs, which includes Rs. 6.02 lakhs incurred during the current financial year.

The target for production of refractory bricks for the year 1976-77 was 14,000 tonnes and the actual production was 12,575 tonnes. The target for production of mortar for the same year was 3,900 tonnes and the actual production was 4,205 tonnes. The shortfall in production of bricks was due to break-down of old presses, which required major repairs,

and due to higher percentage of rejections due to various technical difficulties. Every effort is being made to bring down the percentage of rejections. It is, however, mainly the replacement of worn out machinery and the provision of additional equipment and balancing facilities, which will bring down the rejections within the tolerable limits. Steps are being taken in these directions.

The despatches of bricks for the year 1976-77 were lower at 10,931 tonnes compared to the target of 18,407 tonnes, and despatch of mortar was at 4,056 tonnes against the target of 4,200 tonnes. The lower despatches of bricks were due to switch over to the production of blast furnace stone checkers, which are lower in weight in comparison with standard bricks.

The Company has incurred a loss of Rs. 12.95 lakhs during the period April-November, 1976 against a budgeted loss of Rs. 3.75 lakhs. The reasons for increase in the actual loss during the period include, apart from lower production for want of balancing equipment and additional facilities, heavy expenditure on repairs and maintenance of old plant and machinery taken over from the Asian Refractories Limited.

The Project report for the expansion of the plant to a capacity of 26,000 tonnes per annum at an estimated cost of Rs. 4.2 crores is under consideration.

Personnel

6.3.8 The total number of employees in Bokaro Steel Limited, as on 31.12.1976, is shown in the following table, indicating separately those belonging to Scheduled Castes and Scheduled Tribes :—

Group	Total	S/C	S/T
A	2,933	22	29
B	686	17	22
C	18,805	1,193	723
D	10,401	2,610	1,720
Total	32,825	3,842	2,494

6.4 *Indian Iron and Steel Company Limited*

6.4.1 *Take-over of Management* : In view of the progressive decline in the production of steel in the steel plant of Indian Iron and Steel Company Limited at Burnpur, the deterioration in the

condition of the plant and equipment and the financial difficulties it faced, the management of the undertaking of the company, was taken over by the Government of India with effect from the 14th July, 1972, for a period of two years, pending a decision on the future working of the company. The take over was with a view to arresting the precipitous fall in production of steel in the steel plant, to tone up the management and increase the production by undertaking the necessary repairs and renovations. The period of take over was extended by three years with effect from the 14th July, 1974 with provision for further continuance of the take over by a period of five years, if necessary.

6.4.2 *Acquisition of Shares* : During the period of the take over, various steps were taken to improve the performance of the company. However, it was felt that without substantial financial assistance from the Government, the company would not become a viable unit. Such assistance was possible only if complete ownership of the company vested with Government. It was accordingly decided that Government should acquire the shares of the company held by parties other than the State Governments and public sector institutions. Compensation would be paid to the shareholders at the fair value of the shares as on the 17th July, 1976 when the shares were acquired. With this acquisition, the Central Government, as such, hold 57.32% of the equity capital and 60.55% of the preference capital of the company. The remaining capital is held by Life Insurance Corporation, Unit Trust of India, Nationalised General Insurance Companies, Steel Authority of India Limited and State Governments. Indian Iron and Steel Company has, therefore, become a Government Company.

6.4.3 *Plants and Mines under IISCO* : Indian Iron and Steel Company Limited owns in addition to the integrated steel plant at Burnpur, an iron foundry at Kulti, which is making spun pipes, captive collieries at Chasnalla, Jitpur and Ramanagore, Iron ore Mines at Gua and Manoharpur (Chiria) and a phosphate rock mine at Pathergorah (Bihar). The company also has a subsidiary, IISCO Station Pipe and Foundry Company Limited, Ujjain, in Madhya Pradesh which has been promoted in collaboration with British Steel Corporation (International) Limited. This Company produces cast iron spun pipes of various dimensions.

6.4.4 *Plant Rehabilitation Scheme* : Immediately after takeover of the management of the company in 1972, the technical

health of the various items of plant and equipment was examined and a plant Rehabilitation Scheme drawn up so as to restore the capacity of the Plant to its rated level. The scheme was then estimated to cost Rs. 43 crores and was financed by a loan from a consortium of financial institutions/commercial banks headed by the Industrial Development Bank of India. As initially envisaged, the scheme was to be implemented over a period of three years ending 1975-76. There has been some set back in actual implementation of the programme and it is now expected that the Scheme will be substantially completed in December, 1977.

6.4.5 The cost of the scheme has gone up with the passage of time and is now estimated at Rs. 61 crores even after postponing certain non-essential items. It was originally proposed that the cost of over-run should be financed by the consortium which sanctioned the initial loan. However, in order to reduce the interest burden on the company, it has been decided that the increase in the cost of the scheme amounting to Rs. 18 crores should be financed by the Central Government in the form of loans.

6.4.6 While completion of the Plant Rehabilitation Scheme will put the company back to its rated capacity of 1 million tonnes, certain other capital schemes have to be undertaken if the production is to be sustained over a period of time. The company has estimated that these schemes would cost Rs. 42.5 crores over the next ten years. The broad details of these schemes are as under :—

(i) Rebuilding of No. 1 Blast Furnace;

(ii) Reconditioning of 30 cranes in the Mill Complex;

(iii) Construction of No. 10 battery of 39 ovens;

(iv) Wagon Tippler for Box wagons;

(v) Hot repairs to No. 9 Coke Oven Battery;

(vi) Rebuilding of No. 8 and No. 9 Batteries.

The scheme is being scrutinised by technical experts. Work has, however, started on some of the urgent component schemes. It is not possible for the company to meet the cost of the Schemes from internal resources at least during 1976-77 and 1977-78. This is, therefore, being met by loans from Government.

6.4.7 The normal capital replacements for Burnpur Works, Kulti Works, colliaries and ore mines during the next ten years have been estimated at Rs. 55 crores. Here also it would not be possible for the company to finance the expenditure during the next two years from internal resources.

6.4.8 *Employees and Housing.*— Considering both the establishments at Burnpur and Kulti, the company has a total strength of 29,500 employees for whom it has presently 7,572 houses. Housing satisfication, therefore, stands at 25.8 per cent which is on the low side. The company has drawn up a scheme for the construction of 1,260 units of residential quarters, 48 units of dormitory accommodation and 252 units of hostel type accommodation. With this addition, the housing satisfaction will be 31.1 per cent. The total cost of the project is estimated at Rs. 2.87 crores.

Production

6.4.9 The actual production in the steel plant during the past few years has been as under :—

(In 000' tonnes)

Year	Steel Ingots	Percentage of utilisation of capacity	Saleable Steel	Percentage of utilisation of capacity
INSTALLED CAPACITY	1000		800	
1972-73	431	43·1	347	43·3
1973-74	439	43.9	358	44.7
1974-75	532	53.2	415	51.7
1975-76	630	63.0	500	62.6
1976-77 .. .	667	66.7	542	67·75

Expansion Prospects

6.4.10 IISCO has commissioned Dastur & Company Limited to prepare a fesibility report on the possible expansion of the steel plant at Burnpur from 1(one) million to 2(two) million tonnes a year. The report is expected to be received by September, 1977.

Chasnalla Accident

6.4.11 There was a tragic accident at the Chasnalla colliery of the company on the 27th December, 1975, when the colliery was suddenly flooded resulting in the loss of lives of 375 miners, who were working in the colliery at that time. The flooding of the mine occurred with such severity and suddenness that there was no possibility for any one to escape. Immediately, arrangements were made to organise recovery, rescue and relief operations. Pumps available locally were brought in expeditiously to take up dewatering operations. Five high capacity submersible pumps were obtained from the USSR. Soviet and Polish experts also assisted in the pumping operations. The floor of the first horizon which is 565 feet from the surface was reached on the 19th January, 1976. The second horizon which is at a depth of 950 feet from the surface was reached on the 7th February, 1976. 316 bodies were recovered of which 218 were identified. In addition, 58 trunks among other parts of body were recovered. Counting one trunk as a body, it can be said that 374 bodies—316 complete and 58 dismembered had been recovered.

6.4.12 On the 31st December, 1975, Government of India appointed Justice Ujjal Narain Sinha, retired Chief Justice of the Patna High Court, to hold an inquiry into the causes of and circumstances attending the accident. The following persons have been appointed as assessors :—

(1) Shri C. Karunakaran, Retired Director General of Geological Survey of India.

(2) Shri G. S. Marwaha, Director, Indian School of Mines, Dhanbad.

(3) Shri Damodar Pande, (Ex-MP), Secretary, Colliery Mazdoor Sangh.

The Court of Inquiry is yet to submit its report.

6.4.13 There was another accident, though comparably of smaller magnitude, at Chasnalla on the 5th April, 1976, when a survey party was trapped by a sudden on-rush of water. The party consisted of eight persons of whom one had come out before the on-rush of water. Two other persons were able to climb out to safety later. The remaining five bodies were recovered. The Court of Inquiry constituted to investigate the earlier accident is also investigating this accident.

6.4.14 The Company has commissioned the Central Mines Planning and Design Institute of Coal India Limited, at Ranchi, to prepare a techno-economic report on the recommissioning of the Chasnalla under-ground mine. A decision on recommissioning of the mine will be taken after receipt and examination of the report.

6.4.15 Immediately after the accident at Chasnalla, it was decided by the management of IISCO to pay an *ex gratia* amount of Rs. 1,000/- to each affected family. Similarly, the Government of Bihar decided to pay each family Rs. 500/-. The Coal Mines Welfare Organisation decided to make an *ex-gratia* payment of Rs. 250/- per family. Payments to all the families affected by the first and second accidents, excepting those where the nominees have not turned up, have been made. A survey of the requirements of the affected families have been conducted and IISCO have offered employment to 370 persons (198 males and 172 females) of the affected families where eligible nominees could be identified. So far, 329 persons (193 males and 136 females) have joined. In addition, employment has been provided to 18 persons in other undertakings like Eastern Coalfields Limited, Hindustan Copper Limited, etc.

6.4.16 A fund, styled the Chasnalla Emergency Relief Fund was set up to pool the donations received from various quarters for relief and rehabilitation of the affected families. The disbursement of amounts from this fund was done under the direction of a High-powered Committee set up under the Chairmanship of the Union Minister of Steel and Mines with the Union Labour Minister, Labour Minister of the Government of Bihar and Shri Bhagwati, (Ex-MP) and President, Indian National Trade Union Congress, as members. The total contributions received for the fund is about Rs. 39.55 lakhs. The Committee has decided that this amount, after meeting the various liabilities, should be distributed among the affected families for the purpose of construction of houses and education of children and marriage of daughters. The details of the distribution are being worked out.

Working Results

6.4.17 After charging depreciation of Rs. 477 lakhs, IISCO incurred a loss of Rs. 561 lakhs during 1975-76, as compared with the profit of Rs. 105 lakhs in the previous year. The main reasons for the loss were increased interest burden, higher cost of inputs, particularly coal and increased wages to steel workers. These increases were partly off-set by the increase

in price of steel by Rs. 80 per tonne with effect from 1-7-75. The shortfall in coal production because of the accident in the Chasnalla colliery and the cost of rescue and relief expenses also contributed further to the loss. The profit of Kulti works was also lower due to inadequate demand for the products.

6.4.18 During the current year, profitability of the company is likely to be adversely affected by the high interest burden, decrease in profitability of Kulti Works due to poor demands and after-effects of the Chasnalla tragedy. The ways and means position of the Company continues to be difficult due to accumulation of steel at the stockyards and the works.

6.5 *Visvesvaraya Iron and Steel Ltd. Bhadravati*

6.5.1 The Mysore Iron and Steel Works was started in 1923 with a small blast furnance to produce about 24,500 tonnes of pig iron annually. It has been expanded from time to time. Expansion of the mild steel unit to produce 80,000 tonnes of mild steel by the LD process was taken up in 1962 and production started in 1965. In the meantime, it was decided to convert the entire mild steel production into special and alloy steels of a capacity of 77,000 tonnes a year by the installation of additional facilities. These were installed in stages and production of alloy and special steels started gradually from 1965. The plant also manufactures other products like cement, ferro alloys, castings etc.

6.5.2 Mysore Iron and Steel Limited, was incorporated under the Companies Act on 30th June, 1961 and commenced business on 1st April, 1962. With effect from the 16th February, 1976 the name of the company has been changed from Mysore Iron and Steel Ltd. to Visvesvaraya Iron and Steel Ltd., as a tribute to the memory of the late Shri M. Visvesvaraya, whose tireless efforts and zeal were responsible for the establishment of the iron and steel works.

6.5.3 *Capital Structure*

The Company is presently a joint undertaking of the Government of Karnataka and the Government of India (through Steel Authority of India Limited) the former holding 60% of the capital of the company and the latter the remaining 40%. The authorised capital of the company is Rs. 50 crores. The subscribed and paid up capital of the company as on 31st March, 76 was Rs. 35.50 crores of which Rs. 21.30 crores was held by the Government of Karanataka and Rs. 14.20 crores by Steel Authority of India Limited.

6.5.4 The present assessed installed capacity of the plant is as under :—

(Figures in tonnes)

Mild Steel Sections	48,000
Alloy & Special Steels	72,000
Pig Iron	1,80,000
Slag Cement	96,000
Grey Iron Castings	15,600
Steel Castings	2,500
Ferro Silicon	20,000
Ferro Manganese	2,640
Silico Manganese	1,440
Ferro Chrome	1,560
Cast Iron Spun pipes	17,000
Fire Clay Refractory Bricks	96,00
Cast Iron Railway Plate Sleepers	15,000

The Blast furnace, which was first lighted up in 1923, was permanently shut down in June, 1975, as it was beyond economic repairs. It had functioned for its normal expected life.

Production

6.5.5 The actual production for the year 1975-76 and 1976-77 and the target for the year 1977-78 are as under :—

(Figures in tonnes)

PRODUCTS	ACTUAL PRODUCTION/TARGETS		
	1975-76	1976-77	1977-78
Mild Steel	36,403	27,100	28,700
Alloy & Special Steel (Met O.K.)	51,095	54,553	72,700
Steel Ingots	1,27,332	1,36,949	1,22,500
Ferro Silicon	19,421	12,198	11,100
Ferro Alloys	3,141	2,799	3,940
Slag Cement	95,003	1,00,177	1,00,000
Pig Iron	1,13,243	95,436	1,04,400
Steel Castings	1,566	1,617	2,000
Grey Iron Castings	9,611	8,809	10,000
Cast Iron spun pipes	8,200	7,015	10,000
Cast Iron Plate Sleepers	—	—	—
Refractories	9,916	9,924	10,000
Structures	2,797	2,507	2,200
Calcium Carbide (New Product)	—	—	—
Low Carbon Ferro Manganese	—	—	—
Ferro Titanium	12	85 25	200 60

6.5.6 *Constraints in Production*

The main constraint in production has been the power cut. This was 25% from 1.4.76 and was increased to 40% from 1-10-76.

6.5.7 The working results of the company for the year 1975-76. showed a net profit of Rs. 165.38 lakhs, as compared to a net profit of 307.60 lakhs for the year 1974-75. Even though there was increase in turn over, the profit was less on account of decrease in the rate of selling prices of several categories of special steels and introduction of quantity and area-wise discount from 1.4.1975. There was all round increase in the cost of production on account of increase in salaries and wages, increase in the expenditure on repairs and maintenance, increase in interest charges on account of additional borrowings from commercial banks, etc.

6.5.8 *Capital Project*

The Company's scheme for the installation of Forge Plant was approved in March, 1975, at a cost of Rs. 13.45 crores. The scheme is to be financed from equity investment by Govt. of India/Steel Authority of India Limited (Rs. 2.58 crores) and by Government of Karnataka (Rs. 3.87 crores), from internal resources and loans from Financial Institutions. The Foreign Exchange component of the scheme is being met by a project loan from West Germany. The project is expected to go into production by October, 1977.

The company is also working on a scheme for the installation of certain balancing facilities to optimise the production of the existing units. Installation of the following faciltiies has been taken up :—

(a) Lime Calcination Plant. Erection completed and trial runs have already been conducted.

(b) Installation of Gas Holder. Work in progress

(c) Vacuum Degassing unit.

(d) Decarbonisation unit.

6.5.9 *Research and Development*

The company continued to pay special attention to Research and Development.

One of the major technological achievements during the year was the trials conducted in co-operation with the Research and Development Organisation of Steel Authority of India Limited for increasing the lining life of the L.D. converters, utilising indigenously available dolomite from Bagalkot. As a result of these trials, there has been a sharp increase in the lining life from an average of 65 to 70 heats per campaign to a record figures of 270 heats with an average of over 230 for the last six compaigns. As a result, substantial savings in raw-material costs will accrue to the company. It will also result in consequential increase in furnace availability and production.

In collaboration with the National Metallurgical Laboratory, the company initiated trials on the manufacture of enriched vanadium slag from locally available vandi-ferrous ore from Masanikere, and because of the satisfactory results, the company took up semi-commercial production of fero-vandiaum.

The company was also successful in rolling of low carbon and medium carbon steels (350 kg. ingots) in its old Light Section Mill, where previously Mild Steel was being rolled.

6.6 *New Steel Plants*

Salem Steel Limited

6.6.1 In May, 1972, Government took an investment decision to set up a special steels plant at Salem.

It was also decided to establish the plant in two stages as under :

Stage I

Phase I—The Plant will produce cold rolled stainless steel sheets on the basis of purchased hot bands of stainless steel.

Phase II—In this phase, facilities would be added for melting and refining of stainless steel, in addition, continuous casting and hot rolling facilities will be established for feeding semi-finished products for cold rolling mills.

Stage II

In this stage, all facilities required for the manufacture of silicon steel, other special steel and mild steel would be taken up.

6.6.2 Salem Steel Limited was incorporated on October 25, 1972, with an authorised capital of Rs. 100 crores, and its Registered Office was located at Salem in Tamil Nadu. After the setting up of Steel Authority of India Limited, Salem Steel Limited became its wholly owned subsidiary. The paid-up share capital of the Company stands at Rs. 1179 lakhs, as on 31-3-1977 excluding Rs. 0.74 lakhs being value of shares pending allotment on 31-3-1977.

During 1975-76, the project practically completed the infrastructure facilities required for taking up civil foundation work and structural fabrication for the Cold Rolling Mill (Phase I of Stage I). However, in view of the constraint on resources, the construction schedule of Phase I of the project is already delayed by about three years.

The Detailed Project Report was received from the Consulting Engineers on December 30, 1974. The Detailed Project Report improved upon the product-mix as follows by maximum utilisation of plant and equipment recommended—

		70,000 t
Stainless Steel Sheets/strips	—	75,000 t
Electrical Steel sheets	—	75,000 t
Other Special Steels and Mild Steel Sheets/strips		
		2,20,000 t

Approval of Project

6.6.3 The Detailed Project Report prepared by M/s. M. N. Dastur & Co. has recently been cleared both by Steel Authority of India Limited and the Public Investment Board. The project has been found to be financially viable. Government have, therefore, sanctioned Stage I of the Project. The outlay for Stage I of the order of Rs. 126.81 crores.

Progress of work

6.6.4 Meanwhile, all the land required for the plant, railway siding and town-ship has been acquired. The installation of facilities for construction power and water supply is complete. As regards the railway approach siding from Salem Junction, work was started by the Southern Railway in September, 1974, and is nearing completion. Site levelling for the works stage and construction of 11 km. boundary wall for the total plant are complete.

Construction of project office, establishment of construction facilities, like approach roads to plant areas, construction laboratory, construction water, power and communication systems and work on diversion of natural water courses, are in advanced stage of completion. Work in progress includes mechanical and electrical repair shops and heavy equipment stores, etc.

Personnel

6.6.5 The total number of employees in Salem Steel Limited as on 31-12-1976, is shown in the following table, indicating separately those belonging to Scheduled Castes and Scheduled Tribes :—

Group	Total	S/C	S/T
A	51	4	—
B	—	—	—
C	18	2	—
D	95	19	6
Total	164	25	6

Visakhapatnam and Vijayanagar Steel Projects

6.6.6 As regards the steel projects to be set up at Visakhapatnam and Vijayanagar, the Steel Authority of India Limited commissioned the Detailed Project Reports for these two projects in April, 1975. M/s. M. N. Dastur & Co. and the Metallurgical and Engineering Consultants (India) Limited are the Consultants respectively for Visakhapatnam and Vijayanagar Steel Projects. The Detailed Project Reports are expected to be submitted during 1977. Meanwhile, work relating to the acquisition of land required for these projects and studies for the development of infrastructure facilities and on soil investigation are progressing.

6.7 *Sail International Limited*

6.7.1 SAIL International Limited was incorporated on July 10, 1974. It is wholly owned subsidiary of Steel Authority of India Limited. The authorities capital is Rs. 50 lakhs and the paid-up capital is Rs. 1 lakh only. It has since been decided to raise the authorised capital to Rs. 5.0 crores.

6.7.2 SAIL International is at present the canalising agency for import/export of iron and steel and ferro-alloys. It is also responsible for home-sales of all products of the public sector steel plants including fertilisers produced by the Steel Plants.

6.7.3 SAIL International has initiated a number of sales, promotional activities for better market ability of domestic steel. Its performance as the canalising agency for export of iron and steel, and ferro-alloys has been outstanding inspite of keen competition in the international steel market. Import of steel is being gradually reduced due to better domestic availability and intensive efforts for imports substitution as well as for attaining self-sufficiency in steel.

6.8 *Metal Scrap Trade Corporation Limited*

6.8.1 Metal Scrap Trade Corporation Limited, a subsidiary of Steel Authority of India Limited, was incorporated as a Public Limited Company in 1964. In February, 1974, it became a subsidiary of SAIL. It has authorised capital of Rs. 2 crores and paid-up capital of Rs. 20 lakhs of which Rs. 16 lakhs is held by SAIL and balance Rs. 4 lakhs is shared by the ferrous scrap consumers and traders.

6.8.2. The MSTC at present is responsible for import and export of ferrous scrap as canalising agency. It has also entered into the distribution of scrap arising indigenously in the public sector. During 1975-76, it earned a profit of Rs. 15.68 lakhs before allowing tax. During 1976-77 the profit earnings are likely to be of the order of about Rs. 30 lakhs.

6.9 *National Mineral Development Corporation Limited*

6.9.1 The National Mineral Development Corporation Ltd. is engaged mainly in the development and operation of major mechanised iron ore mines to meet the needs of the steel plants and for exports. The Corporation is also engaged in diamond mining in the Panna area of Madhya Pradesh. The major operating mines of the Corporation at present are at Kiriburu in Bihar and Bailadila No. 14 deposit in Madhya Pradesh. New mechanised iron ore mines are under construction at Bailadila deposit No. 5—Donimalai in Karnataka and Meghahatoburu in Bihar, apart from expansion and modification of the Kiriburu mine. In addition, the Corporation has in hand mining investigations and feasibility studies on certain other large deposits such as Malangtoli in Orissa, Bailadila Deposits No. 4,11-C & 13. Kumaraswamy/Ramandurg (in Hospet) and Bababudan deposits all in Karnataka.

Finance

6.9.2 The authorised capital of the Company is Rs. 150 crores with effect from 7-1-1977. The paid-up capital as on 31-12-1976 was Rs. 92.54 crores and loans from Government/ SAIL as on that data stood at Rs. 68.91 crores.

During the year 1975-76, the Company earned a net profit of Rs. 0.68 crores, bringing down the commulative loss to Rs. 10.37 crores as on 31-3-1976.

Production and Despatches

6.9.3 Production and despatches during the year 1976-77 are indicated in Appendix VIII.

Performance of Projects in Production

KIRIBURU

6.9.4 The mine at Kiriburu supplies both lump ore and fines to the Bokaro Steel Plant. Due to a surplus in the production of lump ore, however, Kiriburu had also been despatching some quantities of lump ore to the Rourkela Steel Plant and for exports. The Kiriburu Mine was programmed to despatch 22.7 lakh tonnes of ore (8.4 lakh tonnes of lump and 14.3 lakh tonnes of fines) to Bokaro during 1976-77. The requirements of Bokaro were fully met. Additionally, a surplus of about 1 lakh tonnes of lump ore from Kiriburu was despatched to Rourkela.

Bailadila-14

6.9.5 The performance at Bailadila No. 14 Mine during 1975-76 was lower than planned due to various constraints in the operation of mine and float ore contractors.

For the year 1976-77, the target of production from Bailadila was fixed at 60 lakh tonnes to match with the export target of the same order, against which the actual production was 54.65 lakh tonnes.

Due to a dispute about the vessel charge at Visakhapatnam Outer Harbour (VOH) commissioned in December, 1976, Japanese buyers suspended shipments of Bailadila Ore during December, 1976/January, 1977. As a result, there was heavy

accumulation of stocks of over 12 lakh tonnes of iron ore at the mine and port ends, resulting in dislocation in production, despatches and unloading. The loss of production on this account was about 2.60 lakh tonnes.

Panna Diamond Mines

6.9.6 During the year 1975-76, the production from Panna diamond mines was 18,892 carats against the target of 18,000 carats. During 1976-77, actual production of diamonds was 20,031 carats against the target of 18,750 carats. Diamond auctioned during 1976-77 weighed 35,054 carats and sold for Rs. 179.33 lakhs, as compared to Rs. 62.67 lakhs sold during the fiscal year 1975-76.

Projects under Construction

Kiriburu Expansion

6.9.7 The expansion and modification of the Kiriburu mine to produce 1.17 million tonnes per annum of lump ore and 2.66 million tonnes of fines, to meet the expanding requirements of Bokaro is under commissioning trials.

Bailadila Deposit No. 5

6.9.8 This new mine in the Bailadila range is being developed for a rated capacity of 4 m.t. of sized ore for exports to Japan under the long-term contract. The technological problems encountered in tunnelling were successfully over-come during the year. The entire civil and structural works on the project were completed during the year and the project entered trial production stage. Only the erection/commissioning of some of the equipment *e.g.*, reclaimer and second primary crusher, remain to be completed. This mine is expected to make substantial contribution to exports through Visakhapatnam Port during 1977-78.

Donimalai Iron Ore Project

6.9.9 This mine is designed to produce 1.6 m.t. of washed lump ore and about 2 m.t. of high grade beneficiated fines annually. Completion of the project has been behind schedule mainly on account of delay in the import of Crushers for the plant and

difficulties with civil contractors. However, civil and structural works have been completed in all the sections except in the screening plant, where the main civil works are expected to be completed in early 1977-78. Mine development work is also completed. The stacker, reclaimer and wagon loader have been commissioned. Construction of Phase I of the township is also completed. The whole project is expected to be completed by the middle of next year. In the meantime, trial despatches of manually mined ore have already commenced.

In order to utilise the fines produced from the Donimalai and Bailadila mines, it has been decided to set up two pellet plants with a capacity of about 2 m.t. each per annum. An up-dated feasibility report for the Donimalai pellet plant is being processed and negotiations have been taken up for construction of the plant. Engineering Consultants have been appointed and tenders have also been invited for the Bailadila Pellet Plant.

Meghahatuburu Iron Ore Project

6.9.10 In view of the importance of developing this mine to synchronise with the 4 million tonnes stage of Bokaro, advance action has been taken for the procurement of items of equipment involving long lead time and for preliminary mine development works, etc. in anticipation of Government approval of the Detailed Project Report.

Feasibility Studies

6.9.11 The NMDC have continued investigations during the current year on the following important iron ore project :

(i) Ramandurg and Kumaraswamy in Karanataka mainly as potential sources of supply for the Vijayanagar Steel plant;

(ii) Malangtoli range in Orissa; and

(iii) Bailadila Deposit No. 4 and Rowghat in Madhya Pradesh. Investigations on the Bababudan Magnetite deposits in Karnataka were taken up by NMDC in June, 1976 and substantial reserves have been established.

Personnel

6.9.12 The total number of employees of NMDC, as on 31-12-1976, is shown in the following table—indicating separately those belonging to Scheduled Castes and Scheduled Tribes :—

Group	Total	S/C	S/T
A	530	23	2
B	86	4	1
C	4,463	390	555
D	2.288	407	800
Total	7367	824	1358

6.9.13 *Iron Ore Board*

The Iron Ore Board has been functioning since 1973. The role of the Board being purely advisory, rather than executive, its main function is to initiate, guide and co-ordinate research and planning on iron ore extraction and utilisation. This involves studies relating to the reserves of iron ore, their qualities and their location, the organisation for and the techniques of extraction, and the best methods of transport and distribution, both for domestic use and for export. The constitution of the Board provides for 15 members, of which 5 are to be whole time members, including the Chairman and Member Secretary. The Board has, however, been functioning with a part-time Member-Secretary.

6.9.14 The expenditure on the Board is met through grants by the Government of India. During 1975-76, Rs. 44.66 lakhs were released as grant to the Board. During 1976-77, the original budget provision was Rs. 53.00 lakhs and this has been revised to Rs. 52.00 lakhs in the revised budget estimates.

6.9.15. The exploration of the Chiria deposit in Bihar, to which a brief reference was made in the last report, has not only maintained its early promise but has, in fact, improved upon it. The reserves are now estimated at 1970 m.t. against the figure of 1600 m.t. reported last year, and against the original estimates before detailed exploration was taken up at the instance of the Iron Ore Board of 200 m. tonnes. This makes Chiria the largest single deposit of heametite iron ore in the country. The proper utilisation of this reserve is, therefore, of

considerable importance, and this can be ensured only by further exploration and tests, which would establish the quality of the reserves. The Board has accordingly undertaken the Second Phase of Chiria Exploration at an estimated total cost of Rs. 98 lakhs. The result of the Second Phase exploration, will be of immense help in determining the sources of iron ore to be used for the further expansion of Bokaro or for any other Steel Plants that may be located in the Bihar-Orissa region.

6.9.16 The Board have taken up another study to prepare a shelf of proposals for the development of the iron ore industry in the light of the anticipated requirements during the next fifteen years.

6.9.17 Reports of two other studies were received during the year. One is the report of MECON on the relative merits of iron ore in the forms of sinters, pellets or sponge iron, as against the normal form of lump ore, for the production of steel. The other is a study on the adequacy or other-wise of the facilities available in the country for the testing of iron ore and the need, if any, to establish a separate institute for iron ore for this and other purposes.

6.10. *Manganese Ore India Limited*

6.10.1 Manganese Ore India Ltd. was formed in 1962 as a Government Company. 51% of the share capital of MOIL are held by the Government of India (through SAIL) and the State Government of Maharashtra and Madhya Pradesh in equal proportions, i.e., 17% each. The balance 49% is held by the Central Provinces Manganese Ore Co. Ltd., a company incorporated in U.K. As per the companies Amendment Act, 1974, the company is a deemed Government Company.

Finance

6.10.2 The authorised capital of the company is Rs. 6 crores consisting of 4 lakhs Equity Shares and 2 lakhs 7½% Preference Shares of Rs. 100/- face value each. The paid-up capital of the company is Rs. 2,15,45,100. The company is engaged in the mining of manganese ore in the Nagpur and Bhandra Districts of Maharashtra State and Balaghat District of Madhya Pradesh. The Company has eight major mines namely Balaghat, Tirodi and Ukwa in Madhya Pradesh and Chickla, Gumgaon, Kandri, Munsar and Beldongri in Maharashtra State. Balaghat mine is the largest manganese mine in

Asia. The company is the largest producer of manganese ore in the country and the bulk of its production is high grade ore. MOIL also meets the entire requirements of the Bhilai Steel Plant for low grade ore.

Production and Despatches

6.10.3 Production and despatches during 1975-76 and 1976-77 are indicated in Appendix IX.

Performance

6.10.4 The performance of Manganese Ore India Ltd. during 1975-76 and 1976-77 had been very satisfactory. The production of 4.08 lakh tonnes in the year 1976-77 was higher than the target of 3.19 lakh tonnes.

The target fixed for 1976-77 are again higher than the actual achievements of last year. The achievement during the year under review has been much in excess of even the higher targets fixed for this year. The figures of production and stock of manganese ore held by the company during the last three years were as under :—

Year	Production	(in lakh tonnes) closing stock
1974-75	3.05	2.53 as on 31-3-75
1975-76	3.09	1.7 as on 31-3-76
1976-77	4.08	2.5 as on 31-3-77

The financial performance of MOIL during the same period has been as under :—

Year	Rs. Profit/Loss	
1974-75	(+)	8,21,487
1975-76	(+)	80,27,643
1976-77	(+)	92,29,000 (Provisional)

There has been progressive improvement in the norms of production as evidenced by the trend in figures of output per man-shift.

Year	Output per man-shift	
	On mining	on total average attendance
1974-75	0·22	0·09
1975-76	0·24	0·10
1976-77	0·28	0·13

6.11. *Bolani Ores Limited*

6.11.1 Bolani Ores Limited was incorporated in 1957. The company was formed by the Government of India in collaboration with Orissa Mineral Development Company Ltd. for the supply of iron ore to the Durgapur Steel Plant. It started with an authorised and paid-up share capital of Rs. 100 lakhs, which was subscribed by the Government of India and Orissa Mineral Development Company Limited in the ratio of 50.5 : 49.5. With the formation of Steel Authority of India Limited, the shares held by the Government of India in the company were transferred to Steel Authority of India Limited in 1973. The authorised share capital of the company is now Rs. 165 lakhs.

Board of Directors

6.11.2 The Board of Directors of the company presently consists of 7 (seven) Directors of which the Chairman and 2 (two) Directors are the nominees of Steel Authority of India Limited, 2 (two) Directors are the nominees of the Orissa Mineral Development Company Limited, 1 (one) is the nominee of Industrial Development Bank of India and the other of the Industrial Finance Corporation of India. The financial institutions are authorised to nominate 1 (one) representative each in accordance with the terms and conditions attached to the loans sanctioned to the company by these Institutions.

Production

6.11.3 The production of the company is meant mainly for feeding the Durgapur Steel Plant. The production programme is, therefore, chalked out to conform to the demands of this plant. The company also produces manganese ore but due to

scanty deposits, making it uneconomical to operate, the company commenced production of Ferrugenous Manganese Ore. The production and despatches of iron ore and manganese ore during the last three years have been as under :—

(In '000 tonnes)

	1973-74	1974-75	1975-76
Production			
Iron Ore Lump	978	1,048	1,091
Iron Ore Fines	205	266	302
Manganese Ore/ Ferrugenous manganese	13	8	11
Despatches			
Iron Ore Lump	1,082	1,096	1,088
Iron Ore Fines	205	266	302
Manganese Ore/ Ferrugenous manganese	13	8	11

Financial Year

6.11.4 Till recently, the financial year of the company was from 1st October through to the 30th September. The company has decided to change the financial year ending on 30th September to 31st March of each year i.e. from 1st April to 31st March of next year in conformity with the other subsidiaries of Steel Authority of India Limited. Accordingly the current financial year which commenced on the 1st October, 1975 will extend to the 31st March, 1977, instead of 30th September, 1976. The profit made/loss incurred, by the Company during the last three years has been as under :—

(Rs. in lakhs)

Year ending	Profit/Loss (+) (—)	(after provision for gratuity and depreciation)
Sept' 1974	(—)	36·05
Sept' 1975	(—)	41·38
Sept' 1976 (12 months period)	(—)	30·07 (Provisional)

Expansion

6.11.5 In order to meet the demand of special sized iron ore from the Durgapur Steel Plant, the company has taken up a scheme of expansion and mechanisation at its mines. The capital cost of the scheme was initially estimated at Rs. 411 lakhs.

This has since been revised to Rs. 452 lakhs. The company commissioned a part of the scheme in April, 1975 and the supply of new sized ore to Durgapur Steel Plant has commenced. The project has been fully commissioned in April, 1977.

6.11.6 The project is being financed by term loans to the extent of Rs. 275 lakhs received from the Industrial Development Bank of India, the Industrial Finance Corporation, the Industrial Credit and Investment Corporation of India and State Bank of India. Initially, it was expected that the balance amount would be financed from the company's own resources. However, as the company's own resources have not been upto expectation, the company is examining the question of raising a further loan from a suitable party.

Personnel

6.11.7 The total number of employees in the Company as on 31-12-1976, is shown in the following table, indicating separately those belonging to Scheduled Castes and Scheduled Tribes :—

Group	Total	S/C	S/T
A	20	—	—
B	16	—	—
C	389	15	36
D	755	167	206
Total	1,180	182	242

6.12. *Kudremukh Iron Ore Project*

Location

6.12.1 The Kudremukh Iron Ore Project is based on the iron ore deposits in the Kudremukh Aroli-Gangamoola range of the Western Ghats. These deposits are situated in Chikamagalur District of Karnataka and are at a distance of about 64 kms from the West Coast. By existing roads, the project site is at a distance of 380 kms from Bangalore and 170 kms from Mangalore.

Geology

6.12.2 The ore body is a sedimentary, pre-Cambrian formation composed of banded megnetite-quartzite with alternating strips of haematite. The ore is magnetic in character and contains about 39% of iron, on the average. Exploration has established reserves of about 1,000 million tonnes of ore in this formation. About 600 million tonnes (60%) of the total proved reserves consist of weathered ore. There is hardly an over-burden and the ore body is fully exposed, lending itself to exploitation by open cast mining.

Background of the Project

6.12.3 The development of the Kudremukh Iron ore deposit had been under consideration since 1964. A proposal for the collaboration of NMDC with M/s. Marcona Corporation of USA and the MON group of companies of Japan (Mitsui & Co., Okura Trading Co. and Nissho Iwai Trading Co.) for a pre-investment study and, implementation of the scheme, if found commercially viable, was approved in 1967. A detailed project report was submitted to the Government in April, 1971 for a project to export 7.5 million tonnes of high grade concentrate annually to Japan. The concentrate was to be transported from the project site to port in the form of slurry, which was to be pumped into special, large-sized slurry carriers.

6.12.4 Subsequently, however, because of certain developments in the Japanese steel industry, the prospective Japanese buyers lost interest in the project. The association of NMDC, Marcona Corporation and the MON group was, therefore, formally dissolved in June, 1974.

Iranian Interest

6.12.5 Meanwhile, Iran showed interest in the development of the project and in buying the concentrate for production of steel. After prolonged negotiations between the Iranian and Indian sides, the following two agreements were concluded by SAIL on the 4th November, 1975 :—

(i) A Sale and Purchase Contract with the National Iranian Steel Industries Company (NISTC) for supply of 150 million tonnes of iron ore concentrate over a period of 21 years, delivery to commence on completion of 4½ years from the effective date of the contract; and

(ii) A Financial Agreement with the Imperial Government of Iran for the loan of an amount not exceeding US

$630 million for implementation of the iron ore project, with an advance payment of $100 million.

The Financial Agreement came into effect on the 9th February, 1976. The Sale & Purchase Contract became effective on the 24th February, 1976, when the advance payment of $100 million under the Financial Agreement was received by SAIL. Accordingly, the delivery of concentrate to the Iranian company has to commence by the end of August, 1980. The project has to deliver 3 million tonnes of concentrate in the first full year of operation, 5 million tonnes in the second year and 7.5 million tonnes from the third year onward. If the annual production is in excess of 7.5 million tonnes, the Iranian company will have the right of first refusal.

Scope of the Project

6.12.6 The scope of the project, as defined in the Financial Agreement with the Imperial Government of Iran is described below :—

The Project is intended to produce annually 7.5 million tonnes of ore concentrate containing, on the average, 66.5% iron. The ore concentrate will be transported in the form of slurry through a pipeline to the New Mangalore (Penambur) Port where the slurry would be filtered. The resultant "filter cake" will then be loaded on board bulk carriers of upto 60,000 DWT.

To obtain a production of 7.5 million tonnes of concentrate per year, about 20.6 million tonnes of ore will have to be mined every year. The detritus left after extraction of the conecntrate (tailings) will be dumped in the Singsara and Lakya streams. To prevent contamination of the river Bhadra, dams are proposed to be built across the two streams to impound the tailings.

The New Mangalore Port is now in a position to handle general cargo ships of 9.15 meter draft. In order to handle 7.5 million tonnes of filter cake per annum with ships of up to 60,000 DWT,, it is necessary to have a separate mechanised iron ore loading berth, to deepen and widen the channel and the turning circle, to extend the break waters and to provide other supporting services, such as additional handling craft, navigational aids, etc. in the port. The development of the

port on these lines has been taken up by the Ministry of Shipping & Transport.

The Kudremukh Project is estimated to require about 90 MW of power and to consume about 400 million KWH of energy per year. There is at present no surplus availability of power in the Karnataka State. To meet the power requirements of the Kudremukh Project, it has been decided to augment the water availability in the Sharavati basin by diverting the waters of Chakra and Savehaklu rivers into this reservoir, by putting up dams across the two rivers. This work has been entrusted by the Government of Karnataka to the Mysore Power Corporation Limited.

Equipment and materials imported for the project will be received at the New Mangalore Port. They will, therefore, have to be carried to the project site by road. To enable this movement, a new road of highway standard is being constructed from Padubidri near Mangalore to the project site. The new highway will also shorten the distance between the project and the port by about 60 kms.

Townships are planned to be built both at the project site and near the port to house the employees of the Company.

Formation of New Company

6.12.7 Both the Financial Agreement and the Sale and Purchase Contract stipuated that within 6 months after the date of the respective agreement, a new wholly-owned Government company should be established in accordance with the Indian Companies Act for the management and implementation of the Kudremukh Iron Ore Project. Accordingly, a new company named Kudremukh Iron Ore Company Limited (KIOCL) was registered on the 2nd April, 1976 at Bangalore. The authorised capital of the company is Rs. 150 crores. Through deeds of transfer and indemnity executive on the 4th October, 1976, the Steel Authority of India Limited have transferred their rights and obligations under the Financial Agreement and the Sale and Purchase Contract to the new company.

According to its Articles of Association, KIOCL should have not less than 5 or more than 13 Directors, who will be appointed by the President. A full-time Finance Director has already been appointed and action is in hand for appointment of other functional Directors. The Company has at present 8

Directors, of whom 5 represent the Central Government and one the Government of Karnataka. Shri K. C. Khanna, who was Managing Director of Bokaro Steel Limited, assumed charge as Chairman-*cum*-Managing Director of the new company on the 10th June, 1976.

Appointment of Mining Associate & Engineer Constructor.

6.12.8 There are not many mines in the world where large scale concentration of low grade, magnetic ore is being done. The Kudremukh Project would be the first of its kind in the country and one of the largest in the world. Transportation of iron ore in slurry form is also a comparatively recent development and its technology is entirely unknown in India. It was, therefore, understood all along that foreign collaboration would be necessary for implementing the Kudremukh Project.

The foreign collaborator in this case has two clearly demarcated functions, *viz.*

(i) A Mining Associate responsible primarily for the planning and development of the mine, development of the process for concentration and transportation, advice on selection of mining equipment, working as a general technical consultant to the Indian company during the construction stage, providing experienced technical personnel for operation of the mine for a specified period and for training Indian personnel and guaranteeing output of the project in terms of quantity and quality; and

(ii) An Engineer-Constructor to engineer and construct the concentrator plant and allied units and facilities on a time-bound basis :

Internationally well-known companies in the field were invited to submit offers for appointment as Mining Associate and or Engineer Constructor. After detailed examination of the offers received and discussions with the tenderers, it was decided by KIOCL, with the approval of the Government, to appoint Canadian Met-Chem Consultants Limited, a wholly-owned subsidiary of U.S. Steel Corporation as Mining Associate-cum-Engineer Constructor. A Letter of Intent was issued to this Company on the 31st August, 1976. The formal contract is now under finalisation.

According to the offer of Canadian Met-Chem, the mechanical completion time for the project is 40 months from the date of the Letter of Intent. Start-up and commencement of operations will take another 4 months. In terms of this schedule, commercial production of concentrate could begin by May, 1980, i.e. well before the date stipulated in the Sale Contract with Iran.

It has been provided in the Letter of Intent that Met-Chem will draw upon the resources of MECON and Hindustan Steelworks Construction Limited to the extent as may be mutually agreed between the parties. It is further provided that MECON personnel would be associated in the basic engineering, including mine planning, and in the preparation of cost estimates. Met-Chem have issued Letters of Intent to MECON and HSCL appointing them as sub-contractors for detailed engineering for civil and structural works connected with the concentrator plant and crusher plant and for actual execution of these works respectively

Relaxation/Simplification of Rules and Procedures

6.12.9 Many of the existing rules and procedures for getting approvals for import of capital equipment, release of funds to the project, foreign exchange remittances, etc. are time-consuming. Considering the extremely tight time-schedule of the project, the Government have relaxed/simplified some of the rules and procedures so that there is no avoidable delay in the implementation of the project. All concerned Government Departments have been advised of the time-bound nature of the project so that their assistance, whenever required, is readily and promptly forthcoming.

Progress of Work

6.12.10 Immediately after the Letter of Intent was issued, specialists of Canadian Met-Chem arrived in India and started pilot plant tests. The tests are continuing.

Canadan Met-Chem have already submitted to KIOCL a preliminary project schedule and a preliminary mine plan. The project schedule has been examined by KIOCL and it has been mutually agreed by KIOCL and Met-Chem to advance the dates of commencement of work in certain important areas so as to ensure fuller utilisation of the 1977 working season. The mine plan is under examination KIOCL. The location of some of

the mine facilities has been finanlised, the location of the remaining units will be decided in consultation with Met-Chem.

Excavation work in the concentrator plant area was started by HSCL on the 5th November, 1976. The work is progressing according to schedule. They have also taken up soil investigation in the tailings dam location and in the Mangalore Port area. The work relating to the construction of the Lakhya tailings dam has already been awarded and work has started.

In terms of the Letter of Intent, Canadian-Met-Chem have engaged the services of Bechtel Corporation of USA for designing and advising on the work relating to the slurry pipeline. According to the detailed survey, the slurry pipeline from the project to the New Mangalore Port will have a length of about 70 Kms. The survey work on the pipeline route is nearing completion. The Petroleum Pipelines (Acquisition of Right of User in Land) Act, 1962, has been suitably amended so as to extend and apply its provisions for expeditious completion of the iron ore slurry pipeline for Kudremukh. A temporary helipad has been established near Karunjali Peak to facilitate speedy survey of the pipeline route.

There are already motorable roads from Bangalore upto Kalasa town, which is about 22 kms from the project site. The stretch of road from Kalasa to the project site has been improved and is now motorable throughout the year. On the western side, a new road from Padubidri near Mangalore to the project site is being constructed upto highway standards. This is expected to be ready by the end of 1977. Imported equipment and machinery for the project will be transported from new Mangalore port to the project site over this road.

Telecommunication facilities have been established from Bangalore to Kudremukh and Mangalore. A point-to-point telegraphic channel between Bangalore and Montreal has also been set up. The Kudremukh Company has also purchased a helicopter to facilitate movement of senior personnel to the project site.

The work of providing temporary water supply and sewage facilities in the project has been entrusted by Met-Chem to HSCL. The work is being taken up. The preparation of detailed design for the permanent water supply scheme and sewage disposal for the project township has also been assigned to HSCL.

Temporary construction power of 1 MVA was made available by Karnataka State Electricity Board on the 7th November, 1976. The permanent power supply scheme envisages, as stated earlier, construction of dams across the Chakra and Savehaklu rivers. This work is being executed by the Mysore Power Corporation Limited. The work on the construction of water conductor systems for the Chakra Scheme has already been taken up. Similar work in respect of Savehaklu scheme is likely to be commenced shortly. The contracts for construction of two dams are also expected to be finalised soon.

In order to meet the immediate requirements of accommodation at the site, three blocks of houses of 8 units each, 3 blocks of guest houses, 16 family units, a guest house for foreign specialists, a temporary marketing centre and an office block have already been built. 54 more residential units and 60 trench shelters for security and construction personnel are expected to be ready very soon. In the permanent scheme, a plan for construction of about 2,200 houses, including essential public buildings has been prepared. 356 permanent houses have been taken up for construction. Construction of more houses will be taken up in stages. A township is being built at Mangalore for the Company staff, who will be permanently stationed there. The work has been entrusted to the Central Public Works Department.

Personnel

6.12.11 Keeping in view the time-bound nature of the project, services of a limited number of experienced personnel have been obtained from the Steel Authority of India Limited and some of its subsidiaries, to form a core group. On the 31st March, 1977, the company had 475 employees, consisting of 143 executives and 332 non-executives. Further recruitment will be made as and when necessary. As on 31-12-1976 the position of employment of Scheduled Caste/Scheduled Tribe and other employees in Kudremukh Iron Ore Company Limited was as follows :—

Category	Scheduled Castes	Scheduled Tribes	Others	Total
Executives	5	—	119	124
Non-executives	22	—	181	203
Total	27	—	300	327

Project Estimate and Expenditure

6.12.12 The original project estimate which formed the basis for the Financial Agreement with Iran was Rs. 567 crores. The definitive cost estimate is to be submitted by Canadian Met-Chem in July, 1977.

An expenditure of Rs. 35.40 crores has been incurred on the project upto the end of March, 1977. The expenditure on port facilities during the same period was Rs. 1.08 crores. A provision of Rs. 136.97 crores, excluding the cost of development of the port for which provision is made by the Ministry of Shipping and Transport, has been made for the year 1977-78.

6.13. *Hindustan Steelworks Construction Limited*

6.13.1. Hindustan Steelworks Construction Limited was incorporated in June, 1964, with the principal object of undertaking all major construction works connected with setting up of steel plants and also to undertake other heavy construction work, both in the public and private sectors when it had spare capacity.

Activities

6.13.2. Originally started with the site levelling, civil and strucural engineering works of Bokaro Steel Plant, the company has expanded its activities in the field of erection of technological structures, mechanical and electrical equipment and also in refractory lining works of blast furnace, coke ovens, furnaces, etc.

6.13.3. The company has developed expertise to take up any complicated construction of steel plants right from the site investigation works to commissioning of sophisticated plants. In addition to the steel plant works, the Company has diversified its activities to the construction of dams, power houses and other industrial buildings, factories and bridges.

6.13.4. The authorised capital of the Company is Rs. 1 crore which has been fully paid-up. The Company has accumulated reserves to the extent of Rs. 327 lakhs as on 31-3-1976.

Turn Over

6.13.5. During the last 10 years, the annual turn-over of the Company has increased from Rs. 4 crores (1965-66) to Rs. 65 crores (1975-76). The significant feature during 1976-77 is the formal commissioning of hot strip mill of Bokaro Steel Plant on May 1, 1976, and of Blast Furnace No. 2 also of Bokaro on April 12, 1976, equipment erection for which was carried out by H.S.C.L.

6.13.6. The company is engaged at present on the following major construction projects:—

Steel Sector

1. *Bokaro Steel Plant*
   Stages I & II
   Township
   Bhawanathpur Limestone Quarry
2. *Bhilai Steel Plant*
   4 MT expansion
   Second Sinter Plant
   Dalli Mines
   Coke Oven Battery No. 8
3. *Durgapur Steel Plant*
   Coke Oven Battery 5A
   Second Slag Bridge
   GS office building
4. *Rourkela Steel Plant*
5. *Salem Steels Limited*
6. *Visakhapatnam Steel Project*
7. *Vijayanagar Steel Project*

Works outside Steel Sector

8. *Bailadila Iron Ore Project—Deposit 5*
9. *Kudremukh Iron Ore Co. Ltd.*
10. *Bharat Aluminium Co. Ltd., Korba Smelter Complex*
11. *Supa Dam in Karnataka*
12. *Obra Thermal Power Station*
13. *2nd Hooghly Bridge—Calcutta & Howrah side approaches.*

Personnel

6.13.7. The total number of employees in Hindustan Steelworks Construction Limited, as on 31-12-1976 is shown in the following table, indicating separately those belonging to Scheduled Castes and Scheduled Tribes:—

Group	Total	S.C.	S.T.
A	1,555	14	6
B	475	9	4
C	4,590	353	118
D	16,588	2,662	2,707
Total	23,208	3,038	2,835

6.14. *Metallurgical and Engineering Consultants (India) Ltd.*

6.14.1. The authorised capital of the Company, a wholly-owned subsidiary of steel Authority of India Limited, is Rs. 4 crores. Its paid-up capital continues to be Rs. 5,000. The turn-over of the Company during 1975-76 was Rs. 5.72 crores, as compared to the turn-over of Rs. 5.95 crores in 1974-75. The company earned a net profit of Rs. 56.70 lakhs in 1975-76, as against the profit of Rs. 60.23 lakhs in 1974-75.

6.14.2. *Activities*

During 1975-76, a number of assignments were completed. These include detailed project report for the completion/expansion of the refractory plant of Hindustan Steel Limited at Ramgarh; a report on the problems of mini steel plants in the northern and eastern regions, project report for Titanium Pigment Project for M/s. Kerala Minerals and Metals Limited; pre-investment report for the Indian Copper Complex, Ghatsila; feasibility report for Calcium Carbide Plant of Travancore Cements Limited.

6.14.3. *The Major assignments in hand are* :—

(a) Expansion of Bokaro Steel Plant from 1.7 to 4.0 million ingot tonnes, including the Solar Oil Regeneration Unit and Slag Granulation Plant. Further expansion of the plant to 4.75 million tonnes.

(b) Expansion of Bhilai Steel Plant from 2.5 to 4.0 million ingot tonnes. Other units at Bhilai for which detailed engineering is being done include Dalli Mines, second sintering plant, 8th Coke Oven Battery and the refractory plant. At Rourkela Steel Plant, detailed engineering is being done for coke oven battery 1A, medium pressure boiler, new diesel loco shop and wagon repair and structural shop. The work at Durgapur Steel Plant covers detailed engineering for additional coal tippler and coke oven battery No. 2.

(c) Detailed engineering for forge shop, lime calcination plant and optimisation scheme of Visvesaraya Iron and Steel Ltd.

(d) Detailed engineering and consultancy work for aluminium smelter and fabrication complex of Korba Project of Bharat Aluminium Company Limited.

(e) Detailed engineering for seamless tube plant at Trichy, Titanium Dioxide Pigment Project of M/s. Kerala Minerals and Metals Limited, Ore Processing Plant and Ore Handling Plant at Meghahatabura Iron Ore Project of National Mineral Development Corporation and for Meghani Alloy Strips Limited Bombay.

(f) Design and supply of complete blooming mills for expansion of Alloy Steel Plant for Mahindra Ugine, Bombay and of complete cold rolling mill complex for Government of India Mint, Bombay. Revamping of the existing structural mill of M/s. Mukund Iron and Steel Works, Bombay.

(g) Detailed project report for Vijayanagar Steel Plant and Carbon Black Plant of M/s. Carbon and Chemicals India Limited, Cochin and

(h) Feasibility reports for alumina/aluminium complex in Andhra Pradesh and in Orissa, rolling mill unit for Universal Industries & Cotton mills Ltd., mini steel plant for Soneast Alloys Limited and for Nirbudihal Limestone and dolomite quarry.

6.14.4. MECON has entered into a long-term agreement with Bharat Aluminium Company Limited for rendering consultancy and engineering services for the setting up of alumina/aluminium

complexes in the country. The Department of Mines have also appointed Metallurgical and Engineering Consultants (India) Ltd. as general consultants for advice on the development of aluminium industry (including bauxite and other essential raw materials and manufacture of alumina). It has undertaken a detailed study for the preparation of a report on the development of aluminium industries up to 2,000 A.D.

6.14.5 *Foreign Assigumenis*

The company has been appointed as consultants to the Federal Ministry of Industries, Government of Nigeria, for rendering consultancy and monitoring services for the setting up of two direct reduction integrated steel plants in Nigeria, each of one million tonne capacity. It will be rendering consultancy services covering the entire range of disciplines for the setting up of integrated steel plants, including scheduling, manpower planning, supervision of construction up to commissioning and advice on related techno-economic maters. MECON was able to secure this assignment against stiff competition from internationally well known firms from the advanced steel producing countries.

The company continues to function as consultants to the Department of Steel. An agreement for study, engineering input and development and commercial exploitation of processes/projects developed or to be developed by National Metallurgical Laboratory has been entered into by MECON with Council of Scientific and Industrial Research and National Metallurgical Laboratory.

MECON has entered into an agreement with M/s. Altos Hornes of Mexico for rendering consultancy and detailed engineering services for the development of Iron and Steel industry and various allied industries owned by Altos Hornes in Mexico. The operation of this Agreement is expected to commence some time during the first half of 1977.

6.14.6. *Amenities to Staff*

As a welfare measure, MECON has introduced a Life Insurance Corporation policy under group Gratuity-*cum*-Life Insurance Scheme under which the nominee of an employee who dies prematurely during service will be paid gratuity not only

for the period of service rendered till death but also for the service he would have rendered to the Company till the age of superannuation had he remained alive.

The Company is having merit-*cum*-means scholarships to enable meritorious children of the employees to have higher education in the field of engineering, medicine, arts, science and technical subjects. One of these scholarships is reserved for the employees belonging to Scheduled Castes/Scheduled Tribes.

6.14.7 *Personnel*

The total number of employees in the company as on 31-12-1976 is given in the following table, indicating separately those belonging to Scheduled Castes and Scheduled Tribes :—

CLASS	Total No. of Employees	Scheduled Castes	Scheduled Tribes
Group A	1,362	23	6
Group B	185	—	6
Group C	908	66	103
Group D	21	15	5
TOTAL	2,476	104	120

7. THE PRIVATE SECTOR

7.1. *Tata Iron and Steel Company Limited*

7.1.1 The industrial complex of Tata Iron and Steel Company Limited, consists of the integrated steel plant at Jamshedpur, captive collieries at Sijua and Jamadoba and an iron ore mine at Noamundi. This steel plant is the oldest integrated steel plant in the country. Its installed capacity is 2 million tonnes of steel ingots per annum equivalent to 1.5 million tonnes of saleable steel. This capacity was achieved through a series of modernisation and expansion programmes which were assisted by the Government of India and the World Bank through loans. The plant produces a variety of semi-finished and finished steel items like blooms, billets, tin bars, rails and heavy structurals, plates, sheets, etc.

7.1.2 *Production*

The production in the plant during the past few years has been as under :—

(Figures in thousand tonnes)

	Steel Ingots	Saleable Steel
Capacity	2,000	1,500
1973-74	1,154	1,200
1974-75	1,722	1,461
1975-76	1,787	1,486
1976-77 (March, 1977)	1,908	1,550

7.1.3. Export during 1975-76 amounted to 88,000 tonnes. As against this, the exports during 1976-77 amounted to 176,000 tonnes.

7.1.4 *Important Capital Schemes*

As the steel plant at Jamshedpur is old, it is necessary to undertake a continuous programme of replacement, repairs and modernisation in order to maintain its rated capacity. The Board of Directors of the company approved, in principle, in April, 1976 a capital expenditure programme amounting to

Rs. 149 crores during the five year period from 1976-77 to 1980-81. The progress on some of the important projects included under this programme is as under :—

(i) *Coke Oven rebuild programme*

Tata Iron and Steel Company has drawn up a phased programme of rebuild of coke oven batteries. Under this programme, a new battery of 54 coke ovens was commissioned in March, 1973. The rebuilt coke oven battery No. 3 went into operation from September, 1975 and the rebuilt coke oven battery No. 1 in November, 1976.

Coke oven battery No. 2 has been dismantled and is expected to be rebuilt within two years.

(ii) *Colliery expansion project*

Considerable progress has been made on the completion of the first phase of the project. The company has applied for grant of industrial licence for expansion of the West Bokaro colliery which is included in the second phase of the Colliery Development Project.

7.1.5 *Feasibility report on expansion of the plant*

In 1972, Government approved the preparation of a detailed feasibility study by Nippon Steel Corporation of Japan on the possible expansion of the steel plant of TISCO at Jamshedpur to determine how best to increase the capacity of the Steel Plant from its existing level of 2 million tonnes of ingot steel a year to 4 million tonnes or more of ingot steel. Government also constituted a Steering Committee to assist in the implementation of the decision. Nippon Steel Corporation submitted its feasibility report in April, 1974. By the time the Sterring Committee finshed its examination of the report by the middle of 1974, there was a drastic pruning of the Fifth Plan affecting the investment programme in the public sector. According to the Committee, an investment decision on TISCO expansion would have to be taken at a more appropriate time later. At that time, the national

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demand forecast for steel would have to be looked into again to see if the scope of expansion visualised in this report would still be valid. Similarly, capital costs and its operation costs would have to be up-dated. By then sufficient experience might also be gained in the working on the Bokaro Steel Plant which might have a bearing on the technical and operating details of the above project. In the circumstances, no further action was taken on the feasibility report.

7.2. *Mini Steel Plants*

7.2.1. Making of steel was reserved for the Public Sector under the Industrial Policy Resolution 1956. Since 1960, making of Mild Steel Ingots/Billets in small or medium sized electric furnaces using ferrous scrap as the principal raw material, was allowed in the Private Sector. The acute shortage of steel in 1970 and post-recession industrial 'pick-up' resulting in a sharp increase in the demand for steel by the re-rolling and engineering industries, gave momentum to the electric furnace units (popularly known as Mini Steel Plants) producting steel ingots/billets. Most of these units came up during the Liberalised Licensing Policy Period i.e. 19-2-1970 to 31-10-1973.

7.2.2. As on 1-1-77 there were 206 licensed/registered electric furnance units for production of mild steel ingots/billets. Their total capacity was 43.64 lakh tonnes per annum. Since it came to the notice of the Government that some of the licensed units had not implemented their projects, their cases were reviewed and 23 licences with a total capacity of 3.63 lakh tonnes were revoked. In addition, 3 Letters of Intent of total capacity of 2.00 lakhs tonnes have been revoked. The balance 180 electric furnace units have a total capacity of 40.41 lakh tonnes.

7.2.3. Out of 180 units mentioned above, only 136 units (capacity 32.55 lakh tonnes) are operative units—89 units (capacity 21.76 lakh tonnes) are in production, 23 units (capacity 5.47 lakh tonnes) are lying closed, 9 units (capacity 2 lakh tonnes) are ready for production and 15 units (3.32 lakh tonnes) are under erection. Cases of units which are not implemented are reviewed and wherever implementation is not satisfactory, the ILS are revoked.

7.2.4. Production was 6.70 lakh tonnes in 1974-75, 6.05 lakh tonnes in 1975-76 and 12 lakh tonnes in 1976-77. Thus, the capacity utilisation has been very poor. Most of these units were conceived during shortage of steel due to lower production in the integrated steel plants. With production picking up in the integrated steel plants and slump in demand for steel, the viability of the mini steel plants suffered.

7.2.5. Main problem of the mini steel plants today is marketability of their products. Their cost of production is higher than that of the integrated steel plants because of the production method as well as range of production. In recent past, the demand for products made from their steel-bars, rods, and structurals, suffered owing to restrictions on building construction activity. Because of their weaker viability these units also could not get adequate credit facilities.

7.2.6. In order to improve the viability of these units, Government have already reduced excise duty on ingots produced from mini steel plants from Rs. 200 to Rs. 50 per tonne. To allow flexibility in operation, these units have been allowed to diversify into production of certain specified categories of low alloy and special steels, and castings. Units viable enough to have cogging mills are allowed to install them. Export of steel has been promoted to improve the total marketability of steel which is expected to help the mini steel plants as well.

7.2.7. In order to improve the long term prospect for the mini steel plant industry, Government have obtained a study of the problems of the mini steel plants and measures which may be considered by the Government, from M/s. Metallurgical and Engineering Consultants (India) Ltd. and M/s. Dastur and Co. Pvt. Ltd., Calcutta. The question of allowing : (i) further concession in excise duty (ii) production of certain additional categories of alloy and special steels (iii) re-rolling activity; are under consideration. Ways and means of stepping up exports are also under consideration.

7.3. *Re-Rolling Industry*

7.3.1. The Re-rolling Mills supplement the production of rolled steel products like bars, rods, wire rods, twisted deformed bars, light sections and other profiles and satisfy a very wide range of consumer demand.

7.3.2. A realistic estimate of the capacity of re-rolling industry in the private sector is not available. The last comprehensive study of the re-rolling industry was made by the Technical Committee on 'Re-assessment of Capacity' in July, 1966. The Committee had assessed the capacity of billet re-rollers at 2.78 million tonnes and of scrap rerollers at 0.73 million tonnes, and other (un-assisted) units at 1.20 million tonnes on double shift basis. Thus, in accordance with the Technical Committee's assessment, the total capacity of the Re-rollers as mentioned above is 4.71 million tonnes. To this, a capacity of 1,52,860 tonnes was added during LILP period. In addition there are a large number of rerolling mills in the Small Scale Sector. The Iron and Steel Controller, Calcutta, is carrying out a status review of the licensed units in order to get a clear idea about the total capacity available with the Re-rollers. The report is expected to be ready by June, 1978.

7.3.3. The production in the Re-rolling sector, however, has been quite low. Past production by Billet and scrap Re-rollers was as under :—

(in tonnes)

	Billet Re-rollers	Scrap Re-rollers	Total
1973-74	5,71,807	1,56,300	7,28,107
1974-75	5,64,000	1,62,600	7,26,600
1975-76	6,68,000	N.A.	N.A.

The main reason for low production by the Re-rollers is the increased production in the integrated steel plants and a slower rise in demand within the country.

The future of rerolling section lies in improving its own efficiency of operation; having closer links with the Electric furnace units; developing capabilities to roll quality products especially various grades of Carbon Steel and special steels.

7.4. *Wire Drawing Units*

7.4.1. There are about 70 Wire Drawing Units in the organised sector. Out of these, 15 are comparatively large units engaged in the manufacture of different types of steel wires. Besides these, there are about 400 Small Scale Units under the perview of Director of Industries of different States which mainly

manufacture alloy steel wires of thicker diameter. During the Liberalised Industrial Licensing Policy period from 19-2-1970 to 31-10-1973, about 33 units took effective steps either for installation of new units or expansion of their existing units. These units were given COB licences with an ad-hoc capacity, mostly based on their past production. In March, 1976, Government appointed a Committee to go into the details of these units to assess their actual capacity. The question of revision of the capacity of the units which have been granted Carry on Business licences in the light of the recommendation of the Committee is under consideration.

7.4.2. The perspective demand of various categories of wires consisting of mild steel, low carbon, high carbon and alloy steel wires is estimated at 8 lakh tonnes per annum in 1980. Against this estimate, the capacity in the organised sector will be about 7 lakh tonnes and in the Small Scale Sector it will be more than 3 lakh tonnes. Production of Wire Drawing Units in the organised sector during 1975-76, and April, 1976 to February, 1977 is given below :

Year	Total
1975-76	265.8
1976-77 (upto Feb)	282. 0

7.4.3. The availability of mild steel wire rods is satisfactory but there is shortage of high carbon and alloy steel wire rods. Some additional capacity for high carbon wire rods has already been licensed. It is proposed to license more capacity keeping in view the perspective demand for high carbon wires and wire rods. As regards shortage of alloy steel wire, rods, it is due to lack of production from the licensed units, owing to shortage of stainless steel wire rods, which at present has to be largely met from imports. Also production of certain sophisticated grades of stainless steel wires of thinner gauzes is technically difficult. Sufficient capacity has already been licensed for the sophisticated categories. Steps for improvement in the availability of alloy and stainless steel wire rods from indigenous sources are also under consideration.

7.5 *Tin Plate*

Apart from Rourkela Steel Plant (annual capacity 1,50,000 tonnes) there are two producers of tinplates in the Private Sector, namely Tinplate Co. of India with a capacity of 70,000

tonnes (under expansion by addition 90,000 tonnes per annum capacity) and M/s. K. R. Steel Union with a capacity of 60,000 tonnes.

Total production of tinplate during 1975-76 was 1,12,000 tonnes and during 1976-77 (provisional upto February) was 1,08,500 tonnes.

7.6. *Cold Rolled Strips*

By 1980 the total demand for Cold Rolled Strips is estimated at 3.1 lakh tonnes—of which 47,100 tonnes is of Medium Carbon, High Carbon and Alloy Steel Strips (including stainless steel strips), the rest being mild steel cold rolled strips. As against Mild Steel Strips, with Bokaro's 5.75 lakh tonnes capacity for Mild Steel Strips already installed, the total capacity for Mild Steel Strips is over 8 lakh tonnes. Thus, the availability of Mild Steel Cold Rolled Strips is surplus to the estimated demand. The capacity licensed for Medium Carbon, High Carbon, and Alloy Steel Strips is 91,130 tonnes. Thus, the capacity licensed is more than adequate, although actual production has been low on account of inadequate availability of raw materials i.e., hot rolled strips. Steps are proposed to be taken for augmentation of production of hot rolled strips in the country. Production of High Carbon and Alloy Steel Strips by way of diversification by the existing Cold Strips Rolling units is also being encouraged. A large capacity for producing stainless steel strips is expected to come up in the 6th Plan period in the proposed Salem Steel Plant.

7.7. *Ferro Alloys*

Ferro Alloys are required as input in alloy and special steel industry and, therefore, play a very important role in the steel development programme of the country. The position regarding the demand and availability is reviewed from time to time and it has been observed that there is no immediate need for creating any additional capacity for the principal ferro alloys like ferro manganese, ferro silicon, ferro chrome, ferro molybdenum, ferro tungsten and ferro vanadium and the capacity already created/planned is sufficient to meet the country's requirements.

At present indigenous production of ferro-vanadium, ferro-molybdenum ferro-tungsten, ferro-boron, ferro-titanium is based on imported concentrates. As regards ferro-vanadium recently feasibility of production of ferro-vanadium with indigenously available vanadi-ferrous ore, and know-how, has been established

by Visvesvarya Iron and Steel Ltd. The Industrial Development Corporation of Orissa also proposes to set up a Ferro-Vanadium Plant utilising indigenously available ores. The requirement of Ferro-Vanadium will be fully met by these units when they go into full scale production. It appears that production of Ferro-Molybdenum, Ferro-Tungsten, Ferro-Chrome, Ferro-Titanium whose requirements are comparatively small, will have to be continued on the basis of imported concentrates till the availability of the requisite raw materials from indigenous sources is established.

7.8 *Pig Iron*

Existing capacity in the integrated steel plants and other units is 15.87 lakh tonnes of pig iron per annum. While actual production of 15 to 16 lakh tonnes per annum has been adequate, there is need to develop production of special categories of pig iron such as Low/High Phosphorous, Spheriodal and low carbongrain.

7.9 *Sponge Iron*

7.9.1 There is at present world wide interest in methods of steel making that seek to by-pass the traditional Blast Furnace and Steel Melting shop route of the integrated steel plants. The core of these new schemes, in the long run, is expected to be the Sponge Iron.

7.9.2 The feasibility of production of Sponge Iron with Hydro Carbon Gases as reductant is already established and uuits have been licensed for production of Sponge Iron by gaseous reduction. These units are however yet to go into actual production.

7.9.3 For India, which has abundant iron ore and non-coking coal, but is not rich in indigenous supply of High Carbon Gases, production of Sponge Iron with non-coking coal is more important. Experiments have been conducted by the National Metallurgical Laboratory, Jamshedpur, using solid reductants. Andhra Pradesh Industrial Development Corporation has a scheme for the production of Sponge Iron based on Solid reductant like non-coking coal. Assistance under the United Nations Development Programme has been assured for this scheme. To promote accelerated development of facilities for production of Sponge Iron in the country, it has also been decided to allow Private Sector units to set up Sponge Iron Plants.

8. RAW MATERIALS

8.1 *Iron Ore*

In overall terms, India is well endowed with rich resources of iron ore, both in quantity and quality. According to the Planning Gorup on Iron Ore (1972) for the Fifth Plan, the total reserves of iron ore in the country were estimated at 10,536 million tonnes, including 8,621 million tonnes of haematite ore. However, according to recent estimates made by the Iron Ore Board, the reserves of haematite ore alone are now placed at 10,000 million tonnes, in addition to the reserves of banded magnetite/quartizite of about 2,150 million tonnes. Recent investigations being carried out by the Mineral Exploration Corporation of India Limited, in Chiria (Bihar), have revealed a quantity of about 2,000 million tones of haematite ore, which will add to the figures relating to reserves of haematite ore in the country.

8.2 The production of iron ore in the country has recorded a big increase from 36.1 million tonnes in 1974-75, to about 42.0 million tonnes in the year ended 31st March 1976 *i.e.* an increase of 16.7%. The production was made up of 26.6 m. tonnes lump ore and 15.40 m. tonnes fines. The production of iron ore during 1975-76 as compared to the production in the previous year and the projected level in 1978-79 *i.e.* at the end of the Fifth Plan, is indicated below :—

(in million tonnes)

	Annual in the years 1974-75	1975-76	1976-77 (April-Dec.)	Projected 1978-79
Production of Iron ore for :				
1. Internal consumption	13.7	15.6	13.1	23.0
2. Exports to other countries	22.4	25.6	16.9	35.0
	36.1	41.2	30.0	58.0

8.3 *Pelletisation Plants*

Recent trends in blast furnace technology have favoured the use of sinter and iron ore pellets produced from fines, instead of lump ore. The first pelletisation plant in the country, with a

capacity of 0.5 m.t. was set up by M/s Chowgule & Co. a private company in Goa in 1967, for exports to Japan under a long term contract. Another pellet plant in the country with a capacity of 1.0 m. tonnes per annum was established at Noamandi by TISCO for their own use in 1971.

8.4 In view of the higher unit realisations from exports of pellets *vis-a-vis* export of raw fines, proposals for other pellet plants have been taken up. A 1.80 million tonne capacity pellet plant is presently under construction by the Joint Sector Company—M/s. Mandovi Pellets Ltd., in Goa. The equity capital of their company is held equally in the proportion of 1/3rd each by the Steel Authority of India Ltd., M/s. Chowgule & Co., Goa and by public subscription. The possibility of setting up some more pellet plants based on the fines from Goa is being explored. A feasibility study has also been prepared by MECON for the setting up of a pelletisation plant based on iron ore deposits in Bihar-Orissa.

8.5 In the public sector, the NMDC have prepared Feasibility reports for the setting up of pellet plants of a capacity of 2m. tonnes per year, each based on the iron ore fines from Donimalai and from Bailadila.

8.6 *Manganese*

According to the Planning Group on Manganese Ore the total estimated *in situ* reserves of manganese ore are 985.6 lakh tonnes. The *in situ* reserves of High Grade ore are 513 lakh tonnes. In view of the need for conservation of the limited manganese ore reserves for indigenous use, a ban was imposed on export of high grade manganese ore and appropriate ceilings were imposed on exports of other grades. In accordance with this policy, exports of medium/low grade manganese ore was restricted to 7 lakh tonnes during 1976-77. In consideration of the likelihood of submersion of the manganese ore reserves by the Kalinadi Hydel Project in Karnataka, now under construction, an additional quantity of 1.10 lakh tonnes of manganese ore produced from this area, by Mysore Minerals Ltd. (a Govt. of Karnataka Undertaking), was also authorised for export. While exports of manganese ore containing more than 46% Mn. have been generally banned, in view of the problems created by large surpluses with MOIL, *ad-hoc* permission was granted to export of 1.90 lakh tonnes of high grade ore during 1975-76 and exports against this have since been completed.

8.7 The figures of production and export of manganese ore during the last three years are indicated below:—

Year	(lakh tonnes)	
	Production	Exports
1974	15.02	10.35
1975	15.88	8.00
1976	17.60	6.50

CHROMITE ORE

8.8 The known reserves of chromite in the country as on 1-1-1975 are estimated at 17.30 million tonnes, the bulk of which, 13.84 million tonnes are located in Orissa. Chromite is used mainly in the production of ferro-chrome, for alloying with steel, in production of refractories and in the manufacture of chemicals *e.g.* dychromate, etc. The indigenous requirement of chromite is presently around 90,000 tonnes, but is estimated to increase to about 1.4 lakh tonnes by 1978-79 and to 3.5 lakh tonnes per year by the end of the 6th Plan, depending upon the pace of expansion of the steel industry.

8.9 In view of the limited reserves of chromite, particularly high grade variety lumpy, the exports of high grade lumpy chromite suitable for metallurgical purposes has been altogether banned. Ceilings have also been imposed on the exports of other grades of chromite in the interest of conservation and special incentives have been provided to encourage beneficiation of low grade chromite ore not directly useable. As a result of these conservation measures, the production of chromite during 1976 came down to about 4 lakh tonnes from the level of about 5 lakh tonnes in 1975.

8.10 Proposals for installation of additional capacity for the production of ferro-chrome based on utilisation of surplus chromite fines not directly useable within the country are also under consideration.

9. PROGRESSIVE USE OF HINDI

9.1 In pursuance of the language policy of Government, almost all noting and drafting in the Hindi Cell is done in Hindi. All Sections of the Department have started writing short routine notes in Hindi. Some officers have also started writing short notes in Hindi; others have been requested to make a beginning and use Hindi for Government work to the extent possible, so that it may serve as an encouragement to the staff working under them to use Hindi. Each Section in the Department has opened one file in which all noting and drafting is being done in Hindi.

9.2 All communications, received in Hindi are replied to in Hindi. All communications whether received in Hindi or in English, from the Governments of Haryana, Rajasthan, Bihar, Himachal Pradesh, Uttar Pradesh, Madhya Pradesh, Maharashtra, Gujarat, Punjab and Delhi Administration are replied to in Hindi. Originating correspondence with these States is done in Hindi.

Entries in the Service Books of Group C & D employees are done in Hindi.

9.3 An official Language Implementation Committee is functioning in the Department. The Committee periodically reviews the progress made in the use of Hindi for official purposes in the Department, its Attached/Subordinate Offices and Undertakings and decides on the measures to be taken to accelerate its use in Government work. So far 15 meetings of this Committee have been held. An Official Language Implementation Committee is also functioning in the office of the Iron and Steel Controller, Calcutta, and so far 3 meetings of this Committee have been held.

9.4 A small committee consisting of one representative each of the Ministry of Home Affairs (Department of Official Language), the Central Translation Bureau, the Official Language (Legislative) Commission and this Department maintains liaison between these translation agencies and helps in expeditious disposal of translation work.

9.5 A Hindi Salahakar Samiti has been set up for the Ministry of Steel and Mines under the Chairmanship of Minister

for Steel and Mines. This Samiti will advise the Ministry on matters relating to the progressive use of Hindi for official purposes.

9.6 A sub-committee of the Official Language Parliamentary Committee visited the Public Sector Undertakings under the administrative control of this Department from 22-28 July, 1976 to review the progress made by them in the use of Hindi. The Committee was impressed by the progress made and was satisfied with the assurance given by the officers of the Undertakings that they would fully implement the language policy of the Government in those Undertakings.

9.7 Minister for Steel and Mines issued a directive on 25-6-76 to all the officers/executives to increase the use of Hindi in the Government work and advised the officers/employees, who do not know Hindi to take advantage of the Hindi Teaching Scheme of the Government and obtain the requisite Hindi qualifications and start using Hindi at the earliest in their day to day official work.

9.8 The position regarding training of Government servants in Hindi/Hindi Typewriting/Hindi Stenography in this Department is as under :—

Total number of employees (Group A, B & C)	223
Total number of employees possessing requisite Hindi qualifications	157
Total number of employees who have passed Prabodh, Praveen and Pragya/Intensive Course/Special Departmental Examinations, etc.	44
Total number of employees under Training .. .. .. —	3
Total number of employees yet to be trained .. .. .. —	22

	Trained	Under training	Yet to be trained
Number of employees trained in Hindi type-writing	3	7	30
No. of employees trained in Hindi Stenography	4	2	22

9.9. Statistical details (covering the quarters ending 30-6-76, 30-9-76 31-12-76 and 31-3-1977) regarding the use of Hindi in the work of this Department are given below :—

Correspondence	No. of letters received	No. replied to	
		In Hindi	In English
(a) From States/Union Territories which have adopted Hindi for purpose of communication with Government of India.	161	129*	
(b) From Ministries/Departments/ Offices.	506	359*	
(c) From Public /Individuals ..	227	224*	
*replied to others were not required.			
Documents issued in both Hindi and English			
(1) No. of Notifications		121	
(2) Fulfilment of Assurances given in Parliament		27	
(3) Rules		1	
(4) General Orders		85	
(5) Annual Report of the Department for the year 1975-76		1	
(6) Budget performance of the Department for the year 1976-77		1	
(7) Government Reviews on the Annual Reports of :—		1	
(a) Steel Authority of India Ltd.		1	
(b) Mysore Iron & Steel Ltd.			
(8) Agenda notes and minutes of the Meetings of the Staff Council.		1	

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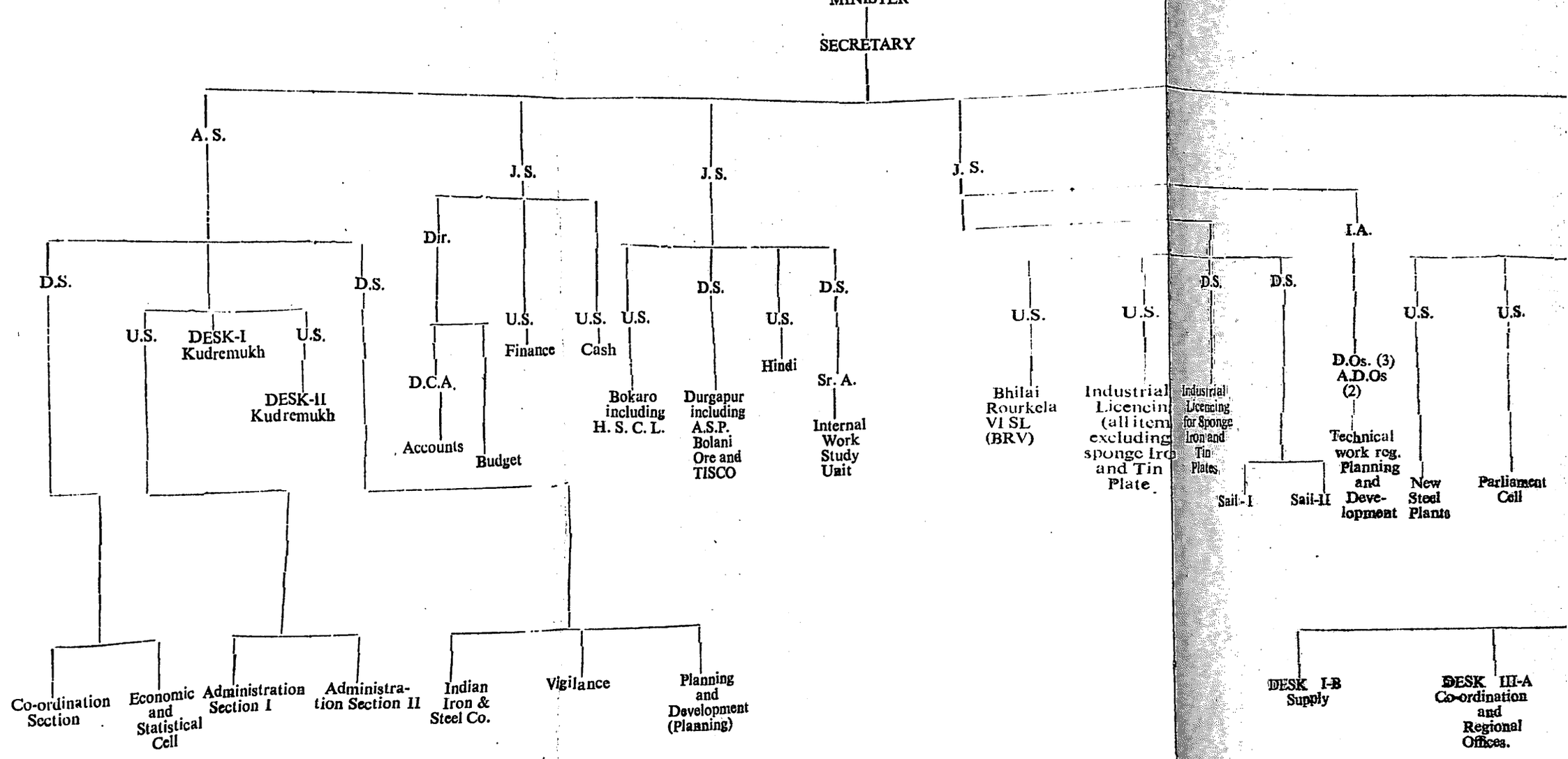
APPENDIX I

List of subjects 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) Visveswaraiya Iron and Steel Ltd.
   (2) The Bolani Ores (India) Ltd.
   (3) The Manganese Ore (India) Ltd.
   (4) The Metal Scrap Trading Corporation.
9. Other Public Sector Enterprises or undertakings falling under the subjects included in this list except such as are sepcifically allotted to any other Department.
10. All Attached or Subordinate Offices or other organisations concerned with any of the subjects specified in this list.
11. Iron and Steel Companies Amalgamation Act, 1952 (79 of 1952).
12. The Indian Iron and Steel Company (Taking over of Management) Act, 1972 (50 of 1972 dated 3-9-1972).
13. The Indian Iron and Steel Company (Taking over of Management) Amendment Act, 1974 dated 31-8-1974.
14. The Indian Iron and Steel Company (Acquisition of Shares) Act, 1976, dated 2-9-1976.

APPENDIX II

ORGANISATIONAL CHART OF THE DEPARTMENT OF STEEL (*Ministry of Steel and Mines*)



LEGEND :
A.S. = Additional Secretary.
J.S. = Joint Secretary
Dir. = Director.
D.S. = Deputy Secretary
I.A. = Industrial Advisor
U.S. = Under Secretary.
Sr. A. = Senio Assistt.
D.C.A. = Deputy Controller of Accounts.
D.O. = Develop
A.D.O. = Assistt

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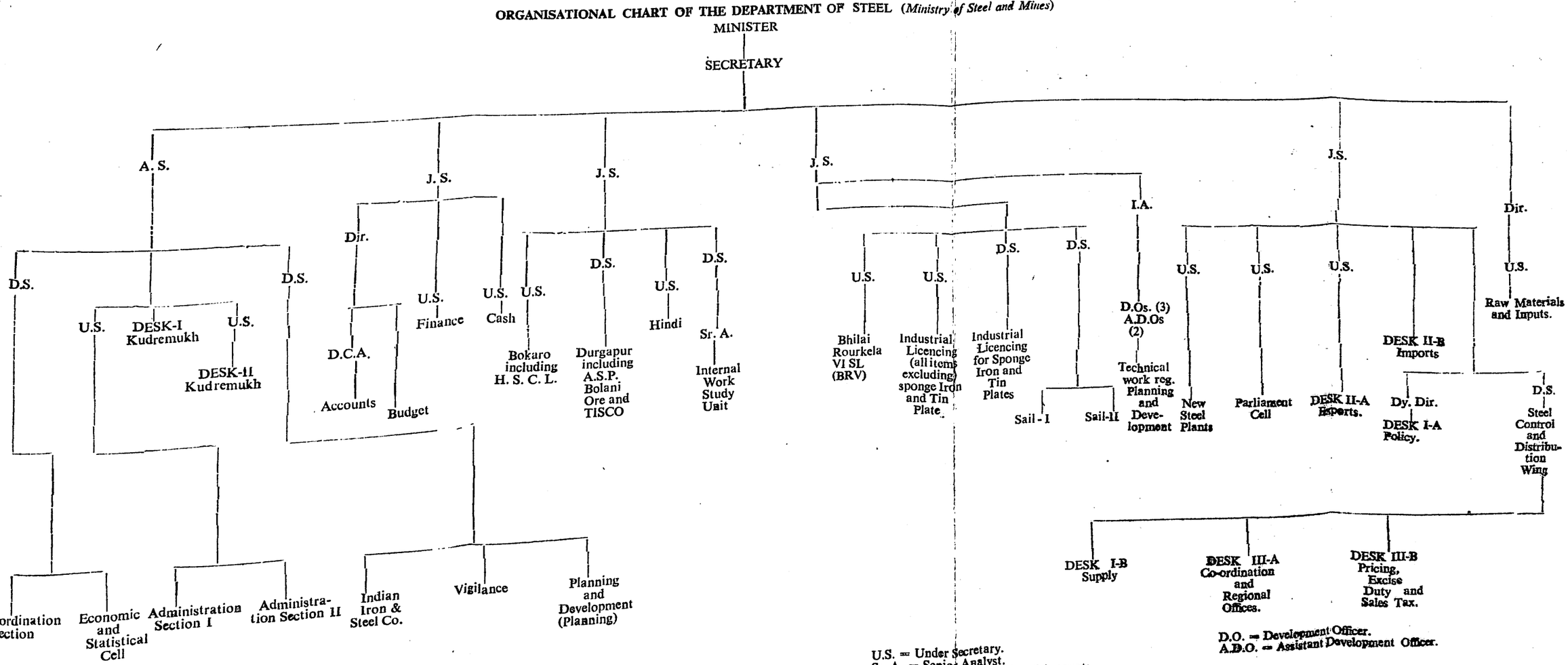
ORGANISATIONAL CHART OF THE DEPARTMENT OF STEEL (*Ministry of Steel and Mines*)



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A.D.O. = Assistant Development Officer.

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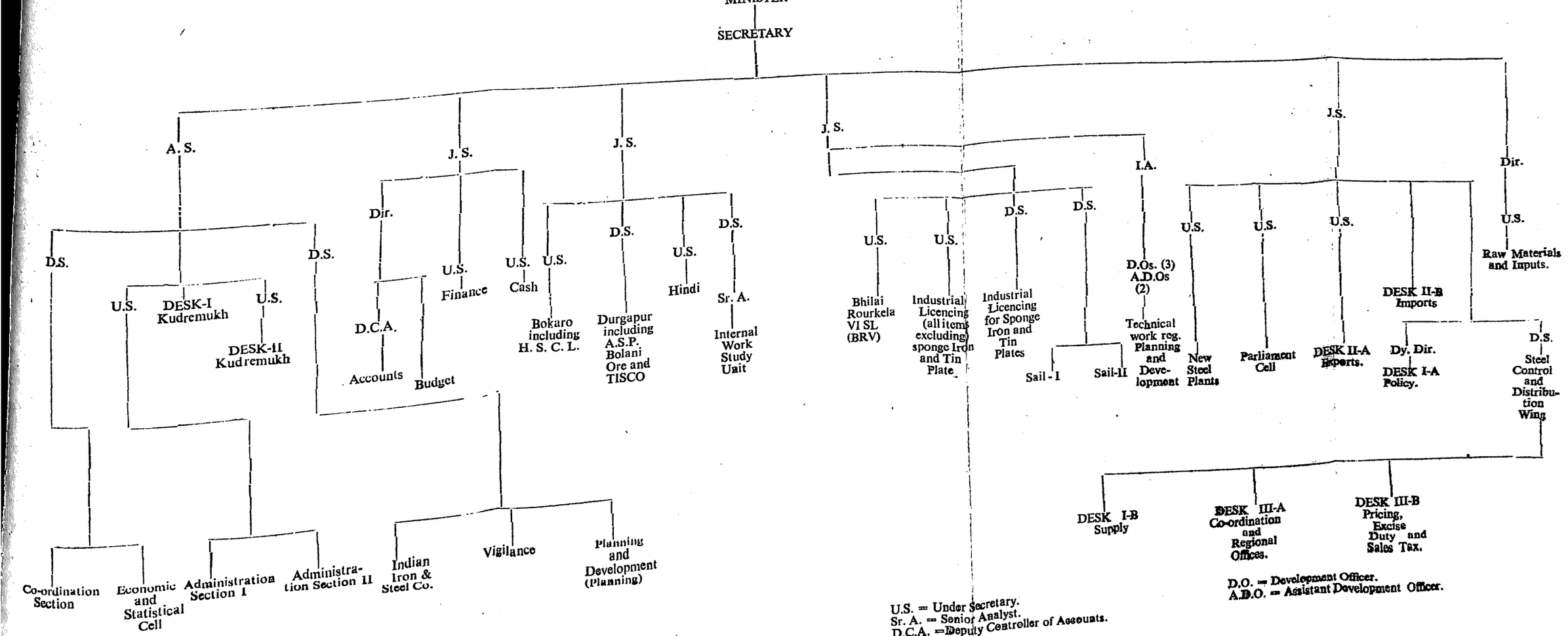

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APPENDIX—III

DUTIES AND FUNCTIONS OF REGIONAL IRON AND STEEL CONTROLLERS

(i) They would collect factual information of the capacities of all Iron and Steel based units registered with the Iron and Steel Controller. They will *inter alia* monitor particulars of the various inputs, production and capacity utilisation of these units on a regular basis. Ferro Alloy Units and manufacturers of special steels will be given particular attention.

(ii) In all cases where import clearance is given by the Iron and Steel Controller, Regional Controllers will ensure proper utilisation of imported materials and also report about the actual requirements of raw material, spare parts and other consumables. This, however, is subject to formal concurrence of the Ministry of Commerce.

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

(iv) They will conduct monthly market surveys, and report the overall availability and supply position of iron and steel materials in their regions with particular reference to price trends of critical items.

(v) They will render assistance to Core Projects and priority sectors to ensure that their demands of steel, particularly of critical sections, are met by the producers.

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

(vii) They will inspect iron and steel based units registered with DGTD and also report progress of implementation of letters of Intent and licences issued by the

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(vii) They will inspect iron and steel based units registered with DGTD and also report progress of implementation of letters of Intent and licences issued by the

Government of India so far as they pertain to the iron and steel Industry.

(viii) The Regional Controllers may take up any other items of work, which may be assigned to them from time to time, like collection of basic statistical data, regulation of growth of any particular sector of industry, *e.g.* mini steel plants or scrap trade, etc.

(ix) They will conduct status survey of the units registered with Iron and Steel Controller according to a calendar of continuous survey drawn by him. The units are :—

1. Electric Arc Furnace
2. Re-rolling Industry
3. Ferro Alloys
4. Wire Drawing
5. Cold Rolled Strips
6. Pig Iron.

APPENDIX-IV

ALL INDIA PRODUCTION OF IRON AND STEEL

(In '000' tonnes)

Products	1972-73	1973-74	1974-75	1975-76	1976-77*
Pig Iron for Sale	1528	1587	1640	1629	2054
Saleable Semis					
Blooms	106.3	127	83	139	434
Slabs	24.3	19	35	213	
Billets/Squares	558	76	904	1271	1094
Others	135	110	128	140	445
Total saleable semis	824	962	1150	1763	1973
Finished Steel					
Hy. Structurals	208	138	200	164	148
Lt. & Medium Structurals	631	427	565	693	771
Rounds, Flats	1,734	2,170	2,241	1,944	2474
Plates	320	303	344	447	706
H.R. Sheets	194	170	204	169	248
C.R. Sheets	104	95	92	171	91
Corrugated Sheets	..	..	..	..	..
GP Sheets	70	71	75	62	187

Products	1972-73	1973-74	1974-75	1976-77	1977-78
G C Sheets	93	88	81	111	..
HR Coils	198	171	198	322	..
C R Coils	101	87	98	104	186
Skelp	244	194	246	264	943*
Tinplates	115	88	81	112	124
Wire	241	480	522	512	673
Wire Wods	406				
Hoops	8	6	..	..	
Heavy Rails	322	252	243	201	305
Light Rails	4	10	12	14	15
Sleepers	45	37	50	61	41
Wheel, Tyre, Axles	30	22	33	37	37
Bearing Plate Bars	1	..	..	3	..
Grossing Sleepers Bars	11	15	12	..	..
Ribbed Sole Plate Bars	..	..	..	..	..
Fish Plates	5	4	4	2	1
Sheel Bars	7	10	9	8	4
Special Sections	820	59	69	40	35
Electrical Sheets	48	39	51	50	43
Tool & Alloy Steel	208	257	264	248	270
Total (Finished Steel)	5,430	5,193	5,694	5,739	7302

SOURCE : SAIL INTERNATIONAL LTD.
*HR Strips/Skelp.
**Provisinal

APPENDIX V

*IMPORT OF IRON AND STEEL**

(Quantity in tonnes & valvue in Rs '000')

Category	1976-77 (Apl-Dec.)		1975-76		1974-75	
	Quantity	Value	Quantity	Value	Quantity	Value
1 2	3	4	5	6	7	8
1. Sponge Iron, Steel powder Angular, girt wire pellets, etc.	400	1857	518	2502	672	1945
2. Mild Steel	186177	594972	355306	1253507	876570	2514788
3. High Carbon Steel	24026	104814	66156	285224	159492	490597
4. Alloy Steel	28304	231491	51777	438116	80138	618383
5. Railway rails, tram rails, wheels, axles, sleepers, etc.	4516	25116	6639	48528	16739	59156
6. Iron and Steel Scrap	23272	41110	17588	32850	10546	21390
Total Iron & Steel	262195	999360	497984	2060727	1144157	3706259
7. Ferro Alloys	429	16270	1138	24469	1104	6920
Grand Total	262624	1015630	499122	2085196	1145261	3713179

SOURCE : D.G.C.I.S.
*Itmes appropriate to the Department of Steel.

APPENDIX VI

EXPORT OF IRON AND STEEL

(Quantity in tonnes & value in crores).

Cateogry	1976-77		1975-76		1974-75	
	Quantity	Value	Quantity	Value	Quantity	Value
1 2	3	4	5	6	7	8
1. Pig Iron	1022,182	71.33	291,604	23.10	138,551	7.70
2. Steel	1409,252	260.51	506,141	86.91	52,135	10.93
2.1. Ingots/Slabs	..	..	9,978	1.34	..	..
2.2. Billets	450,233	62.53	175,336	25·50	16,262	2.27
2.3. Bars & Rods	728,462	134.34	249,915	42.84	32,887	7.85
2.4. Structurals!	83,493	16.73	45,408	9.61	2,227	0.45
2.5. Rails & other railway materials	115,497	39.48	16,198	4.81	..	..
2.6. Plates/Sheets/Strips	13,491	2.69	..	..	..	..
2.7. H.R. Coils	2,986	0.55	..	..	..	..
2.8. C.R. Coils	47	0.01	..	..	..	..
2.9. GP/GC Sheets	1,265	0.39	8,271	2.42	..	..
2.10. H.R. Silicoin Sheets	..	..	..	..	..	..
2.11. Wires	9,841	2.93	1,035	0.39	759	0.36
2.12. Pipes	328	0.13	..	..	..	..
2.13. Tinplates	72	0.04	..	..	..	..
2.14. Special Steel	3,537	0.70	..	..	..	..
Sub-total (1+2)	2431,434	331.84	797,745	110.01	190,686	18.63
3. Ferro Alloys	54,551	17.04	12,614	3.43	..	..
Grand Total (1+2+3)	2485,985	348.88	810,359	113.44	190,686	18.63

SOURCE : SAIL INTERNATIONAL

APPENDIX VII

EXPORT OF FERROUS SCRAP

(Quantity in tonnes & value in lakhs)

Category	1976-77 (Apl-Jan.)		1975-76		1974-75	
	Quantity	Value	Quantity	Value	Quantity	Value
1 2	3	4	5	6	7	8
1. Mild Steel Scrap	50,578	64.357	62,606	79.722	40,216	50.935
2. C.I. Skull Scrap	39,845	222.836	26,377	160.182	57,504	514.548
3. Ingots moulds/Bottomplates	25,858	164.631	19,476	148.034	622	3.644
4. C.I. Chilled roll Scrap	1,010	5.638	..	..	699	7.862
5. Tool and alloy steel scrap	826	51.933	..	..	..	..
6. Steel skull scrap	30,519	171.003	32,525	198,334	..	..
7. C.I. Borings	19,620	64.993	10,981	33.783	14,324	68.666
8. Detinned bundles	8,553	49.488	1,182	7.644	..	..
9. Rejected Steel Ingots	..	..	..	..	..	..
10. Pig Iron Scrap	..	..	..	..	..	..
11. No. 2 & 3 Bundles	7,559	36.090	..	..	..	..
12. High Speed Steel Scrap	..	..	1,283	62.735	283	8,964
13. Other Grades	..	..	..	..	..	..
Total	184,368	830.969	154,430	690.434	113,688	654.619

SOURCE : M.S.T.C.

APPENDIX VIII

PRODUCTION, DESPATCH & SHIPMENT BY N.M.D.C.

PARTICULARS	1975-76		1976-77	
	Target	Actuals	Target for the year	Actuals
		I-PRODUCTION		
1. *BAILADILA*-14				
Plant (lakh tonnes)	30.00	24.38	27.00	23.21
Float	29.18	25.73	31.00	31.44
Total	59.18	50.11	58.00	54.65
2. *KIRIBURU*				
Lump	9.73	7.76	10.10	8.97
Fines	11.50	R 8.47	R 14.30	P 9.79
Total	21.23	R 3.10	24.40	R5.39
		19.33		24.15
3. *DONIMALAI* (Manual Ore)	0.75	0.81	3.55	1.57
4. *PANNA DIAMOND MINING PROJECT*				
Majhagwan (Carats)	16000	16548	18000	18272.53
Ramkheria -Do-	2000	2324	2000	1758.08
Total	18000	18892	20000	20030.61
		II- DESPATCHES		
1. *BAILADILA*-14	60.00	49.58	60.00	52.14
2. *KIRIBURU*				
Bokaro : Lumps	3.38	4.02	8.36	8.34
Fines	14.57	11.05	14.30	15.16
Rourkela: Lumps	3.14	2.81	1.20	@0.51
Vizag : Lumps	3.21	0.92	..	0.25
Total	24.30	18.80	23.86	24.26
3. *DONIMALAI* (Manual Ore)	0.75	0.81	..	0.75
		III-SHIPMENT		
1. *BAILADILA*	61.90	46.45	60.00	50.39
2. KIRIBURU	..	0.93	..	..
		IV-DIAMONDS SOLD (AUCTIONED)		
1. PANNA DIAMOND MINING PROJECT	..	16428	..	**35053.73 (Carats)**

P—Plant

R—Reclaimed

@—including fines.

APPENDIX IX

PRODUCTION AND DESPATCHES BY MANGANESE ORE INDIA LTD.

(000' tonnes)

S.No. Production	1975-76	1976-77
1. Targetted Production (Tonnes)	2,97,797	3,19,500
2. Actual production (Tonnes)	3,09,180	4,08,614
3. Excess(+) or shortages(—) (tonnes)	11,383	89,114
Despatches		
1. Targeted Despatches (Tonnes)	3,73,956	3,13,116
2. Actual Despatches (Tonnes)	3,91,650	3,24,850
3. Excess(+) or shortages(—) (Tonnes)	17,694	11,734

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ERRATA

S.no.	Page No.	Reference		
1.	4	Para 3 first line sixth word	of	to
2.	5	Para 7 line 3 -7th word	January	March
3.	12	Para 4.5 line 3	10.49	1.409
4.	23	Para 6.2.10 line 2	bi-partinte	bi-partite
5.	24	para 6.2.12 line 16	ball	half
6.	25	para 6.2.13 line 5	Plan	Plant
7.	28	para 6.3.7 line 2	roderactory	refractory
8.	39	para 6.6.3 line 6	Stage I of	Stage I is of
9.	42	para 6.9.2 line 4	data	date
10.	53	para 6.12.7 line 10	executive	executed
11.	55	para 6.12.10 last line	Examination KICCL	Examination of KICCL
12 ..	58	para 6.13.2. line 2	Strucural	Structural
13.	62	para 6.14.5. Heading	Assigunents	Assignments
14.	62	para 6.14.5. line 9	maters	matter
15.	65	para 7.1.5 line 9	sterring	ste ring
16.	71	para 7.9.2. line 3	uuits	units
17.	73	para 8.4 line 6	their	this
18.	83	Appendix IV last col.line 2	431	584
19.	83	Appendix IV - Headline Col.1976-77	1976-77*	1976-77**
20.	83	Appendix IV last col.line 3	1094	1257
21.	83	Appendix IV col.1973-74 line 4	76	706
22.	83	Appendix IV col.1976-77 line 4	445	132
23.	84	Appendix IV headline	1976-77	1975-76
24 .	84	-do-	1977-78	1976-77
25.	84	-do- lines 6 & 7	241 406	241) 406)
26.	84	-do- line 17	sheel	shell
27.	84	-do- col.1972-73 Line 18	820	82
28.	85	Appendix V col.1976-77 line 2	186177	181677
29.	86	Appendix VI col.2 Line 12	H.R.Silicoin sheets	H.R. Silicon sheets