

*Steel control book B*



सत्यमेव जयते

भारत सरकार  
Department of Steel  
पुस्तकालय / LIBRARY  
तारीख / Date.....

# REPORT

## 1975-76

GOVERNMENT OF INDIA  
(BHARAT SARKAR)  
MINISTRY OF STEEL AND MINES  
(ISPAT AUR KHAN MANTRALAYA)  
DEPARTMENT OF STEEL  
(ISPAT VIBHAG)  
NEW DELHI

# REPORT

1975-76

इस्पात विभाग

Department of Steel

पुस्तकालय/LIBRARY

तारीख/Date.....



GOVERNMENT OF INDIA  
(BHARAT SARKAR)  
MINISTRY OF STEEL AND MINES  
(ISPAT AUR KHAN MANTRALAYA)  
DEPARTMENT OF STEEL  
(ISPAT VIBHAG)  
NEW DELHI

DEPARTMENT OF STEEL  
ANNUAL REPORT 1975-76

Corrigenda

Page No.	Para No./ Line No.	Particulars
3	10	Insert between "battery" and "and" "was commissioned" on 6th March, 1976"
	10	Insert between "furnace" and "in" "is expected to be commissioned"
4	2/6	Delete "supply"
4	4/3	After "1-4-1975" insert "and "2.4.1975"
8	1/2	Delete "of" between "up" and "a"
9	4/8	For "though out" read "throughout"
11	3/3	Insert "on" between "advice" and "import"
15	item(b)	For "Budget Performance" read "Performance Budget"
17	2/4	Delete Comma after "tonnes"
17	2/9	For "term" read "terms"
19	3/11	For "steels" read "steel"
		Delete "The matter is under consideration of SAIL"
22	7	Paragraph heading: For "Meghatuburu" read "Meghahatuburu"
22	7/1	For "or" read "ore"
30	3/2	For "plant" read "plan"
30	4(a)/1	For "Naphatha" read "Naphtha"
33	Table index/last but third line	For "945" read "245"
36	4/11	For "manufactures" read "manufacturers"
38	1/19	For "affect" read "effect"
60	1/5	For "Feroka" read "Feroke"
65	1/3	For "new" read "now"
65	3/1	For "plan" read "plant"

Page No.	Para No. / Line No.	Particulars
67	3/1	For "Exports" read " export"
68	3/14	For "used" read "use"
70	3/12	For "complete" read "complete"
72	4/7	For "plan" read "plant"
77	1/8	For "ferrow-alloys" read "ferro-alloys"
77	2/4	For "governments" read "government"
77	3/3	Insert before line 3 the following:- "Production of ferro-silicon, however, showed marginal improvement by about 8,000 tonnes over the 1973-74 level of about 30,000 tonnes".
77	3/3-5 lines	Delete "production of ferro-chrome from about 10,500 tonnes in 1973- ment by about 8,000 tonnes over the 1973-74 level of about 30,000 tonnes".
92	Against III (1)	Under column "Proportionate" for "441" read "4,410"
93	Against 1969-70 last column	For "153" read "1539"
94	Above column (4)	For "Bokaro" read "Bhilai"
96	Against S.No. 10	Insert column for "34219" read "34129" .....

## CONTENTS

	PAGES
1. The Year at a Glance . . . . .	1—10
2. Functions and Organisational set-up of the Department of Steel . . . . .	11—15
3. Planning and Development . . . . .	16—26
4. Steel Authority of India Limited (SAIL) . . . . .	27—31
5. Hindustan Steel Limited . . . . .	32—38
6. Bokaro Steel Limited . . . . .	39—43
7. New Steel Plants . . . . .	44—46
8. National Mineral Development Corporation Limited . . . . .	47—50
9. Bolani Ores Limited . . . . .	51—52
10. Hindustan Steel Works Construction Limited . . . . .	53—57
11. Metallurgical and Engineering Consultants (India) Ltd. . . . .	58—60
12. Indian Iron & Steel Company Limited . . . . .	61—64
13. Mysore Iron and Steel Limited . . . . .	65—66
14. Steel Industry in the Private Sector . . . . .	67—78
15. Raw Materials . . . . .	79—85
16. Production, Prices and Distribution . . . . .	86—88
17. Imports and Exports of Iron and Steel . . . . .	89—91

## APPENDICES

I. Production and Despatches by National Mineral Development Corporation Limited during 1974-75 and 1975-76 (April-December) . . . . .	92
II. Production of saleable pig iron . . . . .	93
III. Production of steel ingots . . . . .	94
IV. Production of saleable steel by main producers . . . . .	95
V. Production of Tool, Alloy and Special Steels . . . . .	96
VI. Production of finished steel—Producer-wise . . . . .	97
VII. Production of finished steel—Category-wise . . . . .	98—99
VIII. Statement showing broad categories of inspections carried out by the Regional Offices (under the Iron and Steel Controller) from January-November, 1975, and cumulative total since the inception of these Offices . . . . .	100
IX. Statement showing suspension orders and follow-up action taken in the Regional Offices (under the Iron and Steel Controller) during January-November, 1975 and cumulative total since the inception of these Offices . . . . .	101
X. Imports of Iron and Steel-1973-74 to 1975-76 (April-June) . . . . .	102
XI. Category-wise Exports of Iron & Steel-1973-74 to 1975-76 (April-June) . . . . .	103
XII. Export of Iron & Steel Scrap during 1973-74 to 1975-76 (April-June) . . . . .	104
XIII. Category-wise Export of Ferro alloys during 1973-74 to 1975-76 (April-June) . . . . .	105

The Steel Authority of India Limited with its following wholly owned subsidiaries function under the administrative control of this Department :—

- (i) Hindustan Steel Limited;
- (ii) Bokaro Steel Limited;
- (iii) Salem Steel Limited;
- (iv) Hindustan Steelworks Construction Limited;
- (v) National Mineral Development Corporation Limited;
- (vi) Metallurgical & Engineering Consultants (India) Limited; and
- (vii) SAIL International Limited

Besides the above, the other subsidiaries of SAIL are as under :—

- (i) Bolani Ores (India) Limited;
- (ii) Metal Scrap Trade Corporation Limited; and
- (iii) Indian Fire Bricks and Insulation Company Limited.
- (iv) Bharat Refractories Limited.

The Office of the Iron and Steel Controller, Calcutta, is also under the Administrative control of this Department.

The Department also deals with the following undertakings :—

- (i) Indian Iron & Steel Company Limited;
- (ii) Mysore Iron & Steel Company Limited renamed as Visveswaraiya Iron & Steel Ltd.; and
- (iii) Manganese Ore (India) Limited.

The important data relating to the undertakings are given in the following table.

Name of the Company	Year of incorporation	Capital expenditure upto 31-3-75	Equity capital as on 31-3-75	Government loans as on 31-3-75	Cumulative net profit/loss as on 31-3-75	Cumulative depreciation on 31-3-75	Cumulative interest on Government loans as on 31-3-75	Number of employees as on 31-3-75
	(Rs. lakhs)	(Rs. lakhs)	(Rs. lakhs)	(Rs. lakhs)	(Rs. lakhs)	(Rs. lakhs)	(Rs. lakhs)	
1. Steel Authority of India Limited	1973	24	1,34,615	28,899	—	5	—	223
2. Hindustan Steel Limited	1954	1,37,571	66,422	34,935	(—)19,792	73,999	30,534	1,34,912
3. Bokaro Steel Limited	1964	1,03,600	60,000	19,346*	(—)2,754	4,060	—	31,112
4. Bharat Refractories Ltd.	1974	201	40	Nil	(—) 9	17	Nil	
5. Hindustan Steel works Construction Limited	1964	1,522	50	163 (+)	290	396	57	21,595
6. National Mineral Development Corporation Ltd.	1958	10,711	8,404	1,516	(—)1,105	2,608	984	6,578
7. Salem Steel Limited	1972	495	677	Nil	**	1	Nil	205
8. Metallurgical & Engineering Consultants (India) Limited	1973	82	0.05	Nil	(+)	18	Nil	2,286
9. Metal Scrap Trade Corporation Limited	1964	2	20	Nil	(+)	0.64	Nil	19
10. SAIL International Ltd.	1974	3	1	Nil	(+)	0.70	Nil	34

\*Loans given directly to BSL upto end of 1972-73.

\*\*Under Construction.

Some of the more important developments during the year 1975-76 are given below :—

#### Progress on Bokaro Steel Plant

The first blast furnace complex commissioned on the 3rd October, 1972, has consistently exceeded its rated capacity. The cumulative production of hot metal till the end of December, 1975 was 25,74,424 tonnes. The second blast furnace is ready and will be commissioned as soon as the allocation of additional coal for operating the third coke oven battery is arranged. The third coke oven battery and the second blast furnace in the first quarter of 1976.

The first two converters were commissioned on 31-1-1974 and 4-4-1974 respectively. Till the end of December, 1975, 3,62,014 tonnes of ingots were produced. The slabbing mill, commissioned on the 30th December, 1974, has produced 1,08,082 tonnes of slabs till the end of December, 1975. The production from the steel melting shop and slabbing mill had to be restricted for want of off-take and also because the finishing mills were not ready.

With the commissioning of the hot strip mill on the 10th December, 1975, the plant has commenced production of finished steel.

The entire work with regard to the first stage of the plant (including cold rolling mill) is expected to be completed by December, 1976. The second stage of four million tonnes is expected to be commissioned by December, 1977.

#### Progress of Production from the Integrated Steel Plants

The production of ingot steel from the integrated steel plants at Bhilai, Durgapur and Rourkela under Hindustan Steel Limited, Bokaro, Jamshedpur (TISCO) and Burnpur (IISCO) during the period April-December, 1975, was 5.201 million tonnes as against 4.514 million tonnes during the corresponding period last year i.e. an increase of 6,87,000 tonnes (15.2%). The production of saleable steel during this period came to 4.145 million tonnes against the production of 3.550 million tonnes in April-December, 1974, i.e. an increase of 5,95,000 tonnes (16.8%). Excluding Bokaro Steel Plant where some of the units have either still to be commissioned or are under gestation, the overall capacity utilization in terms of saleable steel during the period April-September, 1975 was 79.8%. This represents higher capacity utilization by 9.5% as against that achieved in the corresponding period in 1974.

The target for 1975-76 fixed in the beginning of the year envisages a production of 7.697 million tonnes of ingot steel and 5.700 million tonnes of saleable steel. Based on the trends of production upto December, 1975, it is anticipated that while the target for saleable steel is likely to be achieved in full, there will be a marginal shortfall in the case of ingot steel production. This is made possible by decumulation of the ingot stock. It is also expected that Bhilai and Rourkela Steel Plants will exceed the year's targets for saleable steel production.

The position would have been still better but for the impact of certain external factors. In the case of Bokaro Steel Plant, the target of production was based on the assumption that the second blast furnace would be in operation from August, 1975. It has, however, not been possible to commission this furnace on account of inadequate availability supply of coal. The production of ingots and slabs, which are intermediate products, has been restricted on account of high stocks and limited demand. At Durgapur, the main constraint has been the supply of inferior quality of coal resulting in poor quality of coke, affecting the output of the blast furnaces and operation of the integrated plant.

#### *New Steel Plants*

The Detailed Project Report for the Salem Steel Plant, submitted by the Consultants, has been scrutinised by an Expert Committee appointed by Salem Steel Limited, and, on the basis of the recommendations of the Expert Committee, the Board of Directors of Salem Steel Limited have accepted the Detailed Project Report. The Steel Authority of India Limited, the holding Company, are now considering this and are expected to send their recommendations shortly to the Department of Steel for an investment decision by the Government of India. The total capital requirement has been estimated at Rs. 517 crores and Rs. 116 during construction). Work is on hand, in the meantime, in re-envisages the setting up of a cold rolling mill complex for the manufacture of 30-35,000 tonnes of cold rolled stainless steel sheets/strips per year initially with imported hot rolled sheets.

The Steel Authority of India Limited have already commissioned the preparation of the Detailed Project Reports for the respective Consultants, viz., M/s. Dastur & Co., and the Metallurgical and Engineering Consultants (India), Limited. The detailed Project Reports are expected to be submitted by the Consultants by the end of 1976. Each of these two Projects would have an

ultimate capacity of about 3 million tonnes of ingot/liquid steel. Work relating to the acquisition of land required for these two projects and studies for the development of infra-structure facilities are progressing satisfactorily. The offices of the General Managers of the Projects have been shifted from New Delhi to Visakhapatnam and Bangalore to ensure better co-ordination of the Project work.

#### *New Wage Agreement for Steel Workers*

A wage agreement covering workers employed in the major steel plants was signed in October, 1970 by the Joint Wage Negotiating Committee for the Steel Industry, a bipartite Committee comprising representatives of employers, of recognized unions at the steel plants and of three Central Trade Unions, namely, INTUC, AITUC and HMS. The agreement was 4 years effective from the 1st September, 1970. Among other things, the agreement provided for a minimum wage of Rs. 240/- (basic Rs. 200 plus dearness allowance Rs. 40) and a formula for variable D.A. linked with All India Consumer Price Index (base 1960=100). The minimum wage as on 1-9-74 was Rs. 383.

A new wage agreement for 4 years effective from 1-9-1974 was signed by the Committee on the 30th July, 1975, after prolonged discussions. The agreement covers nearly 2,25,000 workers employed in the public sector Steel Plants at Bhilai, Durgapur, Rourkela and Bokaro, the Mysore Iron and Steel Works at Bhadravati and private sector plants of TISCO and IISCO. As a result of the agreement, the basic pay has been raised from Rs. 200 to Rs. 300 (by merging Rs. 100 from D.A.) and the minimum wage has been fixed at Rs. 393. This includes fixed D.A. of Rs. 62 and variable D.A. of Rs. 31. In addition, the agreement provides for a guaranteed minimum benefit of Rs. 18 or one increment in the revised scales, whichever is higher. The agreement also provides, for the first time, house rent allowance at 10% of pre-revised basic pay (subject to a maximum of Rs. 65) from 1-8-1975 to those employees who have not been allotted Company quarters. The employees will also enjoy better social benefits from extension of free education from middle class to matriculation standard for their children, increased transport subsidy, liberal benefits in case of disablement or death while on duty and improved distribution system for essential commodities. One of the terms of the agreement is that industrial peace and harmony will be maintained and efforts will be made to increase productivity. However, no demand will be made or raised in regard to matters covered by the agreement.



### *Financial Results of Undertakings*

There has been further improvement in the working results of a number of undertakings under this Department. Hindustan Steel Limited made a profit of Rs. 48.24 crores in 1974-75 against a profit of only Rs. 4.71 crores in 1973-74. Metallurgical and Engineering Consultants (India) Limited made a profit of Rs. 60.23 lakhs in 1974-75 as compared to a profit of Rs. 45.14 lakhs in 1973-74. The profit of Hindustan Steelworks Construction Limited went up from Rs. 94 lakhs in 1973-74 to Rs. 1.04 crores in 1974-75. SAIL International Limited, which was registered on the 10th June, 1974, earned a profit of Rs. 11.25 lakhs during the first year of its operation. National Mineral Development Corporation Limited also made a profit in 1974-75, though, at Rs. 1.20 crores it was marginally less than that in the previous year when the profit was Rs. 1.58 crores.

### *Kudremukh Project*

Two agreements were signed on the 4th November, 1975 between the Governments of Iran and India. These provide for the development of the Kudremukh Project with a view to supplying 7.5 million tonnes of Iron Ore Concentrate per annum to Iran for a period of 20 years. Iran has agreed to give a loan of six hundred thirty million US \$ for implementing the project. With the receipt of an advance payment of US \$ 100 million, in terms of the provisions of the financial agreement, the two agreements have become 'effective' from the 24th February, 1976.

It is proposed to establish a wholly owned Government Company under the Administrative control of the Department of Steel to take charge of the constructions of the Kudremukh Project and the implementation of the related Indo-Iran agreements. Action is being taken for the completion of necessary formalities and procedure with regard to the formation of the new Company. The new Company is proposed to be formed with an authorised capital of Rs. 150 crores.

### *Joint Sector Pelletisation Plant in Goa*

An agreement was reached during the year between the Government of India and M/s. Chowgule and Company Private Limited for the formation of a new company namely M/s. Chowgule Metal Industry Limited renamed Mandovi Pellet Ltd. in the joint sector for the setting up of a pelletisation plant in Goa with a capacity of 1.8 million tonnes.

### *Chromite Ore*

Chromite ore ( $\text{FeO} \cdot \text{Cr}_2\text{O}_3$ ) is used mainly in the production of refractories and ferro-chrome. Limited quantities are also

used in the chemical industry. In the case of chromite required for the refractory industry only, the chemical composition and some physical properties are the limiting factors. For metallurgical and chemical use, however, besides the above two parameters the ratio of chromium to iron is of significance.

2. Except for certain grades and specifications, exports of chromite ore have, in the past, been free from any restriction and have shown a steep upward trend in the last few years due to a sharp increase in world prices. Various measures for the conservation and proper utilisation of chromite ore have been taken up during the current year. Among these are :—

- (i) exports of high grade lumpy chromite ore which is required for indigenous use, have been stopped;
- (ii) Instead of free exports of certain categories of chromite ore permitted hitherto, grade-wise ceilings have been imposed on exports of this mineral;
- (iii) in order to ensure proper regulation, exports are being canalised through a public sector agency;
- (iv) in order to review the overall position with regard to production/internal consumption/exports of chromite ore, and to make suitable recommendations for the optimum utilisation of all grades arising during the course of mining by beneficiation, pelletisation, etc. a Study Group has been constituted by SAIL. Further measures for the conservation and proper utilisation of this mineral will be considered on receipt of the report of the Study Group.

### *Ferro Vanadium Project in Orissa*

The proposal of the Steel Authority of India Limited for setting up of a plant for the manufacture of ferro vanadium with a capacity of 480 tonnes per annum at Rairangpur in Orissa has been received from them, and is under consideration of Government.

### *Sponge Iron Demonstration Plant*

The Andhra Pradesh Industrial Development Corporation were issued a letter of intent for the production of 30,000 tonnes of Sponge Iron per annum, based on non-coking coal from Singareni Collieries as solid reductant. This scheme is being implemented as a demonstration scheme with the assistance from the UNDP/UNIDO. SAIL has agreed in principle to participate in this scheme. A global tender for the plant and machinery was issued and bids have been received by UNIDO. The unit is expected to be commissioned in 1977.

### *Steel Industry in the Private Sector*

The following are the important developments during 1975-76 in regard to steel industry in the private sector :—

- (i) As one of the relief measures afforded, the excise duty on ingots produced in Mini Steel Plants was reduced from Rs. 200/- to Rs. 50/- per tonne.
- (ii) In May, 1975, Government decided to allow private sector units to manufacture steel by "Side-Blown Converter Process" or other refinement of this process.
- (iii) By a notification dated 13-11-1975, the Cold Rolled Strips and Box Strappings Industry has been brought within the purview of licensing.

Recognising that the Electric Arc Furnace Industry requires an indepth study to enable an identification of their problems to which the entrepreneurs engaged in the industry must find practical solutions, Government have commissioned in January, 1976 a detailed study of the problems by two professional consulting engineers namely M/s. Metallurgical & Engineering Consultants of India Ltd. and M/s. M. N. Dastur & Company Limited to undertake the necessary investigation and study. Each of the two agencies will cover units in the geographical zone allotted to them so as to expedite the work.

In order to coordinate the studies of the two consulting engineers to present to government a composite report on the findings of the two agencies, Government have also set up a Committee consisting of representatives of the Department of Steel, Steel Authority of India Limited, Metallurgical and Engineering Consultants India Ltd. and M/s. M. N. Dastur & Company Limited. The reports of the consultants and the recommendations of the Committee are expected to be submitted by November, 1976.

### *Streamlining of the distribution system*

The distribution policy is reviewed from time to time keeping in view the requirements of the changing situation. With the overall improvement in the supply position of most categories of steel, particularly as a result of increased production, even plates including coils and forging quality steels have been taken out of the purview of the Steel Priority Committee and are now made available by the producers directly to the consumers under a Government Notification dated 20-12-1975.

With the easy availability of billets, the Billet Re-rollers Committee was abolished on 3-3-1975 and the residual work of that Committee is being done by the Joint Plant Committee.

Government have also reviewed certain sections of the Iron and Steel (Control) Order, 1956 and have kept clauses 7 & 19 of the Order in abeyance through a Notification dated 17-12-1975 under which the restrictions on end-use of iron and steel and scrap have been removed. This new change makes steel business a free exchange of goods to meet genuine customer demand. This will also help traders to participate in the steel business and help the producers to make available steel through out the country.

As a result of the various steps taken by Government the availability of most categories of iron and steel has become easy.

### *National Metallurgists Day*

The 13th National Metallurgists Day was celebrated at Jamshedpur on the 14th November, 1975, when 6 distinguished metallurgists were honoured with cash awards of Rs. 3,000 each for their outstanding contribution in various fields of metallurgy.

### **IMPLEMENTATION OF 20-POINT PROGRAMME**

Minister of Steel and Mines has also revived the system of periodical review of the performance of the various undertakings under the Department. These meetings with the Chief Executives of the enterprises ensure a close watch on their working and prompt reporting of their difficulties as also removal of these difficulties and other bottlenecks.

### Steel Production

In pursuance of the Programme, concerted efforts have been made to raise steel production and to maximise utilization of existing steel production capacity. This has yielded highly satisfactory results. A record saleable production of 5.7 million tonnes is expected from the integrated steel plants in 1975-76 which would mean an additional production of 8 lakhs tonnes over the production in 1974-75 and an overall capacity utilization of 82.0% (excluding Bokaro).

Not only the position in regard to domestic availability of steel has become comfortable, this has also led to a significant reduction in imports and a sizeable export of iron and steel materials. It is also expected that the country will be a net exporter of these materials in 1975-76.

Special emphasis has also been laid on improvement in quality by increasing the proportion of tested quality steel in total saleable steel output.

### Workers association with management

The system of workers' association with management has been given a further impetus and a new orientation in the various public sector undertakings under the Department and a large number of bi-partite committees are now functioning in various areas like production and productivity, welfare amenities and facilities, grievances, safety etc.

### Apprentices Act

Special attention has been paid to the implementation of the Apprentices Act and, in particular, to the recruitment of apprentices from Scheduled Castes and Scheduled Tribes.

### Workers' Welfare

Public sector undertakings continue to take keen interest in the welfare of their employees and provide statutory and non-statutory welfare facilities in ample measure. These have been considerably augmented in the public sector steel plants as a result of the new wage agreement. To commemorate the services of late Shri S. Mohan Kumaramangalam to the steel industry, it has been decided to set up a Rehabilitation Project for steel workers and their dependents who fall victims to accidents or disabilities. Nehru awards have been instituted for outstanding performance in the public sector steel plants.

### FUNCTIONS AND ORGANISATIONAL SET-UP OF THE DEPARTMENT OF STEEL

The Department of Steel forms part of the Ministry of Steel and Mines and is responsible for :

- (a) Coordinating the growth of the steel industry both in the public and the private sectors—including re-rolling mills, alloy steels and ferro-alloys industry;
- (b) Implementation of the Iron and Steel (Control) Order, 1956;
- (c) Formulation of policies in respect of the distribution and imports/exports of iron and steel; and
- (d) Input Industries like Iron Ore and manganese ore, required mainly by the steel industry.

Steel Authority of India Limited and its subsidiaries are among the subjects allocated to the Department of Steel. Hindustan Steel Limited, Bokaro Steel Limited, Salem Steel Limited, Hindustan Steelworks Construction Limited, National Mineral Development Corporation Limited, Metallurgical and Engineering Consultants (India) Limited, and SAIL International Limited are wholly owned subsidiaries of SAIL. Metal Scrap Trade Corporation Limited, Bolani Ores Ltd., Bharat Refractories Ltd., and Indian Fire Bricks and Insulation Company Ltd. are its other subsidiaries. In addition, SAIL have share holdings in Indian Iron and Steel Company Ltd., Mysore Iron and Steel Limited and Manganese Ore (India) Ltd. The Chairman of the Steel Authority of India Ltd. is also the Secretary in the Department of Steel. The other Secretariat posts include one post of Additional Secretary, four posts of Joint Secretaries, three posts of Director (including the post of Internal Financial Adviser), three posts of Deputy Secretaries and six posts of Under Secretaries. In addition, there is a Technical Wing which at present comprises one Industrial Adviser, three Development Officers and two Assistant Development Officers posted in the Secretariat and one Industrial Adviser, two Development Officers and one Assistant Development Officer attached to the Office of the Iron and Steel Controller at Calcutta.

The Iron and Steel Controller is responsible for the implementation of the Iron and Steel (Control) Order, 1956 and for giving advice import/export policies. As Chairman of the Joint Plant Committee, he supervised the receipt and planned distribution of indents for supply of steel to consumers. In this work, he is

guided by the Steel Priority Committee, of which the Secretary in the Department of Steel is the Chairman. He also publishes a quarterly bulletin called the "Iron and Steel Control" which contains statistical information regarding production of iron and steel items and other matters of interest to Government, the traders and consumers of Iron and Steel.

There are six Regional Offices under the Iron and Steel Controller at New Delhi, Calcutta, Bombay, Madras, Hyderabad and Kanpur. These are small offices which are officer-oriented in their functioning.

To ensure easier marketability, Government by a notification dated the 17th December, 1975 removed the restrictions on end-uses of all categories of iron and steel, as specified in the Schedule to the Iron and Steel (Control) Order, 1956. Till the issue of this notification, the Regional Iron and Steel Controllers were checking on utilisation of iron and steel, obtained from the regulated sources. The six Regional Offices under the Iron and Steel Controller discharge functions as mentioned below.

The Steel-based exporters of engineering goods are getting supply of steel on overriding priority, both for forward contracts as well as for past contracts in replenishment. Such steel is being supplied to these exporters at JPC prices even if the supplies are made from stockyards. The Regional Iron and Steel Controllers are keeping a watch in this regard, so that these exporters do not mis-use the steel thus obtained on overriding priority at a concessional price. If instances of mis-utilisation come to their notice, they refer such cases to the appropriate sponsoring authorities for suitable deterrent action.

There is a proposal to entrust the Regional Iron and Steel Controllers with developmental activities.

#### PROGRESSIVE USE OF HINDI

The Hindi Cell of the Department of Steel comprises one Hindi Officer, four translators and two typists. Besides doing 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 the Government of India/Government Undertakings and the Hindi Teaching Scheme of the Ministry of Home Affairs.

#### *Noting and Drafting in Hindi*

Almost all the 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.

#### *Progress of Translation of Statutory Material*

The Iron and Steel (Control) Order, 1956, as amended from time to time, has already been translated into Hindi and is being sent to the Press for printing.

#### *Training of Government servants in Hindi/Hindi Typewriting/Hindi Stenography*

The position is as under :—

Total No. of employees (Class I, II, & III)	202
Total No. of employees possessing requisite Hindi qualification	139
Total No. of employees who have passed, Probodh, Praveen and Pragya/Intensive Courses/Special Departmental Examinations etc.	46

Total No. of employees to be trained	185
	17

	Trained	Yet to be trained
No. of Employees trained in Hindi Typewriting	1	40
No. of employees trained in Hindi Stenography	3	20

#### *Official Language Implementation Committee*

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 eleven meetings of this Committee have been held. An Official Language Implementation Committee has also been set up in the Office of the Iron and Steel Control, Calcutta and the first meeting of this Committee has also been held.

#### *Liaison Committee*

A small committee consisting of one representative each of the Ministry of Home Affairs, 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.

### Inspections

During the year under review, the Hindi Officer of this Department visited the Iron and Steel Controller's Office at Calcutta and the Regional Iron and Steel Controller's Office at Kanpur to review the implementation of the provisions of the Official Languages Act and the administrative instructions issued thereunder on the progressive use of Hindi in those offices. The Hindi Officer and the Deputy Secretary in the Official Language Department of Ministry of Home Affairs also inspected the Regional Iron and Steel Controller's office at Delhi.

Statistical details (covering the quarters ending 31-3-1975, 30-6-1975 and 30-9-1975) regarding the use of Hindi in the work of this Department are given below :—

### Correspondence

	No. of letters received in Hindi	No. replied to	
		In Hindi	In English
(a) From States/Union Territories which have adopted Hindi for purposes of communication with Government of India . . .	109	59*	—
(b) From Ministries/Departments/Offices . . . . .	160	80*	—
(c) From Public /Individuals . . . . .	148	34*	—

\*Replies to others were not required.

### Documents issued in both Hindi and English

(1) No. of Notifications . . . . .	60
(2) Fulfilment of Assurances given in Parliament . . . . .	74
(3) Rules . . . . .	2
(4) General Orders . . . . .	29
(5) Annual Administrative Report of the Department for the year 1973-74. . . . .	

	No. of letters received in Hindi	No. replied to	
		In Hindi	In English
(6) Budget performance of the Department for the year 1974-75			
(7) Government Reviews on the annual reports of :—			
(i) Steel Authority of India Limited . . . . .			
(ii) Mysore Iron and Steel Limited . . . . .			
(8) Agenda notes and minutes of the Meetings of the Staff council held from time to time. . . . .			

### Planning and Development

Steel forms the basic input material for diverse industries and other sectors of economy. If there is an assured supply of steel of the right quality, there is enormous scope for industrial growth, especially so in a country like ours with a large population and low per capita income. Because of its long forward and backward linkages, an integrated iron and steelmaking plant generates a large potential for employment which is crucial to our country in its present state of development. Further, through bulk steel production, revenues can be generated for the country to be utilised in other areas of industrial and economic activity. India also has the potential to be a large producer of steel in Asia and Far East.

There are, in all, six integrated steel plants in the country—four in the public sector and two in the private sector. Of the private sector steel plants, the management of the Indian Iron and Steel Co. Ltd. has been taken over by the Government of India. The present capacities of the integrated steel plants are as under :—

Plant	Rated capacity in '000 tonnes	
	Ingot Steel	Saleable Steel
1. Bhilai		
2. Durgapur	2,500	1,965
3. Rourkela	1,600	1,239
4. Bokaro	1,800	1,225
5. TISCO	1,700*	1,364*
6. IISCO	2,000	1,500
	1,000	800
	10,600	8,093

\*This relates to the first stage of Bokaro which is being commissioned at present.

#### Fourth Plan Target

In the Fourth Plan, an installed capacity of 12 million ingot tonnes was envisaged to be achieved. This was based on the partial utilisation of capacity from the continuous expansion of Bokaro to 4 million tonnes stage, of Bhilai Third stage to 4 million tonnes and expansion of IISCO from 1 million tonnes to 1.3 million tonnes. In the mid-term appraisal of the Fourth

Plan in December, 1971, the target of installed capacity by 1973-74 was fixed at 11 million tonnes of ingot steel. No increase in capacity could, however, be achieved by the end of the Fourth Plan. The expansion of IISCO to 1.3 million tonnes from the then existing capacity of 1 million tonnes was given up by the then IISCO management. The attainment of 1.7 million tonnes capacity at Bokaro also did not materialise. The expansion of Bhilai to 4 million tonnes has been rescheduled. Actual production during the last year of the plan i.e. 1973-74 was 5.722 million ingot tonnes.

#### Draft Fifth Five Year Plan

The Draft Fifth Five Year Plan envisaged additional steel capacity by expansion of Bhilai to 4.0 million tonnes and continuing construction work on Bokaro up to 4.0 million tonnes, and then to 4.75 million tonnes, ingot capacity. However, due to constraints on financial resources the expansion of Bhilai Steel Plant and commissioning of Bokaro's 4.75 million ingot tonnes stage is likely to materialise in the early years of the Sixth Plan period only. Total production in the first year of the Fifth Plan was 6.575 million ingot tonnes and in term of saleable steels was 4.9 million tonnes (from five integrated plants) which was an all-time record. Actual production during April-December, 1975 was 5.2 million ingot tonnes from all the integrated steel plants.

The thrust on achieving maximum capacity utilisation of existing plants, by providing balancing facilities, additions, modifications, replacements of worn out assets and planned preventive maintenance and overall planning of scarce infra-structural inputs was intensified with the creation of a holding company, i.e. the Steel Authority of India Limited. The estimated production at the end of the Fifth Plan from the integrated steel plants has been projected at 8.49 million tonnes of saleable steel and about 1.369 million tonnes from electric arc furnaces, totalling to 9.86 million tonnes. As against this availability, the domestic demand is estimated at 7.658 million tonnes by 1978-79, leaving an overall surplus of about 2.2 million tonnes by that period. These demand estimates have been worked out by the Steel Authority of India Limited and are based on past consumption pattern, present market trend, expected growth in the economy and also keeping in view financial constraints which may limit our industrial activities for some time more.

#### Developmental Programmes for diversification/expansion of existing facilities

In addition to the expansion of steel capacity by way of future expansion of Bhilai and Bokaro, SAIL have a number of capital investment schemes in hand for maintenance of production, for

development of major input material and infra-structure, and for further expansion and product diversification. Some of the major schemes in this sphere are :—

#### (A) Continuing Schemes

##### *Expansion of Bhilai Steel Plant*

In April, 1966 Bhilai Steel Plant had submitted a techno-economic report indicating three alternatives for expansion beyond 2.5 million tonnes per year. The third alternative, which visualised installation of a new scheme comprising of converters, continuous casting units and a heavy plate mill, was accepted. Government had sanctioned advance action on the following associated schemes :

- (a) *Sixth Blast Furnace Complex* : This will have a capital cost estimate of Rs. 46.02 crores. The scheme has been completed in January, 1972.
- (b) *Second Sintering Plant* : The revised estimate of capital cost is Rs. 29.92 crores, and the work has been taken in hand. The scheme is scheduled for completion by December, 1976.
- (c) *Mechanisation of Dalli Iron Ore Mines* : This will have an estimated cost of Rs. 28.398 crores. The work on this unit was taken in hand in January, 1972 and is scheduled for completion by December, 1976.

The detailed project report for expansion to 4.0 M.T. capacity was submitted by MECON in September, 1973 and was scrutinised by Bhilai Steel Plant, Indian and Soviet Experts and a Memorandum of Acceptance was signed in February, 1974. The work is being progressed accordingly keeping in view present financial constraints.

##### *Expansion of Bokaro to 4.0 M.T. and then to 4.75 M.T.*

Considerable progress has been made in the construction of the Steel Plant. Almost all the major units of Bokaro Steel Plant at its 1st stage have been commissioned. The entire work relating to this stage including cold rolling mills is expected to be completed by December, 1976. The slabbing mill which is the mother mill of the integrated plant started trial rolling in December, 1974. Trial rolling in hot strip mill has also been carried out in December, 1975.

The construction work on expansion to 4.0 MT ingot capacity (Stage-II) is also in hand, and is scheduled for completion by December, 1977 with the related cold rolling mills complex a year later. Further expansion to 4.75 MT may have to be rescheduled.

The revised estimated capital cost of the 1.7 MT Stage is Rs. 941 crores of which Rs. 850.63 crores have been spent till the end of 1974-75. The revised estimate for expansion to Stage-II is Rs. 948 crores of which Rs. 193 crores have been spent till the end of 1974-75.

##### *Salem Steel Plant :*

Detailed Project Report for installation of an Alloy Steels Plant at Salem with a capacity of 220,000 tonnes of finished sheets and strips including 70,000 tonnes of stainless steel was submitted by M/s. Dastur & Co. in December, 1974. This report has been examined by an Expert Committee constituted by the Salem Steel Board with the approval of SAIL. Based on the report of Expert Committee, the DPR was approved by the Salem Board and submitted to SAIL in December, 1975 for sanction of the Project Report. The report will be submitted to the Government shortly for sanction after approval by the SAIL ad-hoc Committee/Board. The matter is under consideration of SAIL. The project is estimated to cost Rs. 517 crores.

##### *Vijayanagar Steel Plant*

SAIL has commissioned MECON in April, 1975 for preparation of Detailed Project Report for setting up an integrated steel plant at Vijayanagar. It is expected that the Report would be available in 21 months. In the meantime preliminary work of land acquisition, survey and testing of raw materials etc. has been taken up.

##### *Visakhapatnam Steel Plant*

M/s. M. N. Dastur and Co. Pvt. Ltd. have been commissioned in April, 1975 for preparation of the Detailed Project Report for the integrated iron and steel works at Visakhapatnam. This is expected to be available in about 21 months. Preliminary work of land acquisition, survey and linkage of raw materials is in hand.

##### *Modification & Expansion of Kiriburu Iron Ore Mine*

Kiriburu mine is being modified and expanded to meet the iron ore requirements of Bokaro Steel Plant and is accordingly

designed for an annual production of 1.17 million tonnes of lumps and 2.66 million tonnes of fines (at 90% capacity utilisation). The revised capital cost is Rs. 16.42 crores. Owing to delay in the supply of equipment, only one of the two lines of the plant has been put on trial runs in November, 1973 and the second line is partly put on trails since April, 1975. The scheme is now expected to be completed by middle of 1976.

#### *Spirally Welded Pipe Plant*

A spirally Welded Pipe Plant at an estimated cost of Rs. 15.3 crores is being set up at Rourkela Steel Plant to meet the demand of Indian Oil Corporation for higher diameter pipes required for long distance oil transportation. The project is scheduled for completion by May, 1976.

#### *Slag Granulation Plant at Rourkela*

A Slag Granulation Plant is being installed at Rourkela at an estimated cost of Rs. 3.84 crores for annual production of 6 lakh tonnes of granulated slag. It is scheduled for commissioning in July/August, 1976.

### **KUDREMUKH PROJECT**

1. The negotiations with Iran on the Kudremukh Project, which were commenced last year, were brought to a successful conclusion this year. A contract for the sale and purchase of iron ore concentrate from Kudremukh and a financial agreement for a loan of US \$ 630 million by Iran to India for the construction of the project were signed at Teheran on 4th November, 1975. With the receipt of an advance payment of US \$ 100 million, in terms of the provisions of the financial agreement, the two agreements have become 'effective' from the 24th February, 1976.

2. The Salient features of the agreements are reproduced below :

#### **A. Contract for Sale and Purchase of Concentrate :**

- (i) A total quantity of 150 million tonnes of concentrate is to be supplied to the National Iranian Steel Industries Company over a period of about 20 years @ 7.5 m.t. per year,
- (ii) The Iranian Government is to finance the cost of implementation of the project, not exceeding US \$ 630 million.
- (iii) Delivery of the concentrate is to commence 4½ years after the 'effective date'.

#### **B. The Financial Agreement :**

- (i) A credit not exceeding US \$ 630 million will be provided by the Imperial Government of Iran for financing the cost of the Kudremukh Project.
- (ii) Out of this an advance payment of US \$ 100 million has been given on 24th February, 1976.
- (iii) The balance payments are to be disbursed, according to the procedure laid down, during the period of construction spread over 4½ years.
- (iv) The loan will carry interest at the rate of 2½% p.a. and is repayable in 31 equal, successive and semi-annual instalments, beginning from 5 years after the 'effective date'.

3. The cost of the Kudremukh Project, including provision for the development of the related infrastructural facilities, is presently estimated at US \$ 630 million or about Rs. 567 crores. The important schemes relating to the development of infrastructure facilities include the following :

(i) construction/improvement of direct road to link the Kudremukh mines to the port of Mangalore via Bajedoli and Padubidri. Preliminary work on the construction of the road has already been commenced by the State Government of Karnataka at the instance of the Department of Steel.

(ii) a scheme for the generation of additional electric power from the Sharavati Hydel Project by the diversion of additional water from the river Chakra. This scheme is estimated to cost Rs. 54 crores and preliminary work has been commenced by the Government of Karnataka. A sum of Rs. 1.50 crores has been advanced to the Government of Karnataka during the current year for taking up work on the road and power schemes;

(iii) development of Mangalore Port to handle ships of size 60,000 DWT, including an additional berth mechanised ore loading facilities and navigational aids etc. The Ministry of Shipping & Transport have prepared a project report for the development of Mangalore port.

4. It is proposed to establish a wholly owned Government Company under the Administrative control of the Deptt. of Steel to take charge of the construction of the Kudremukh Project and the implementation of the related Indo-Iran agreements. Action is being taken for the completion of necessary formalities



and procedure with regard to the formation of the new company. The new Company is proposed to be formed with an authorised capital of Rs. 150 crores.

5. For the timely construction and smooth operation of the project, it is proposed to appoint international firms of experience and repute as Mining-Associate and/or Engineer-Constructor. Negotiations have been commenced with the firms from whom offers for such appointment were received.

6. The Kudremukh Project will be the single largest mining project in the country. The project will be unique in many other respects employing comparatively new and sophisticated techniques and equipment, e.g., Magnetic concentration, Slurry pipeline and very large-size mining equipment etc.

#### *Refractories Plant at Bhilai*

In order to find a long-term solution to the problem of providing the steel plants with high quality refractories, a modern refractories plant is being set up at Bhilai. The project is estimated to cost Rs. 28.4 crores. The plant will be capable of making 110,000 tonnes of quality refractories per annum at 80% capacity utilisation.

#### *Production of Cold Rolled Grain Oriented (CRGO) Sheets at Rourkela*

SAIL has signed an agreement with ARMCO of USA on the 14th November, 1975 for preparation of a Master Plan to set up a silicon steels project at Rourkela. The Master Plan is expected by May, 1976.

#### *Long-term expansion of Special Steel Plate Plant at Rourkela*

In order to meet the long-term demand of defence, a proposal for expansion of special plate plant at Rourkela Steel Plant is under consideration. It is estimated to cost Rs. 35.10 crores. Department of Defence Production have been requested to confirm the demand projections for special steel plates for a period of 10-20 years.

#### *Meghatuburu Iron Ore Project*

The project is being designed to meet the iron ore requirements of Bokaro Steel Plant for its expansion upto 4.75 MT. The mine is planned to produce 1.20 million tonnes of lumps and 2.66 million tonnes of fines and is to be completed by 1978-79. The capital cost of the project is estimated at Rs. 58 crores and the Detailed Project Report prepared by

NMDC is under examination of an Expert Committee appointed by SAIL. Steps have already been taken for initial infrastructure and construction facilities.

#### *Pellet Plant at Donimalai*

SAIL has approved in principle the construction of 2.5 MT capacity for Pellet Plant at Donimalai at a cost of about Rs. 80 crores and the scheme is under the consideration of Government for sanction.

#### *Ferro-Vanadium Plant in Orissa*

A proposal is under consideration to set up a ferro-vanadium plant at Rairangpur, Orissa with a capacity of 480 tonnes of ferro-vanadium per year at an estimated cost of Rs. 18.6 crores to meet the increasing demand of ferrovanadium for the steel industry. The scheme has been approved by the SAIL Board on the 10th November, 1975 and is now under examination of Government.

#### *Feasibility Studies and other Developmental Work*

SAIL had commissioned MECON to prepare feasibility reports for setting up of integrated steel plants of 3.0/6.0 million tonnes in Bailadila region of Madhya Pradesh and another steel plant at Surajgarh region of Maharashtra with a capacity of 2.5/5.0 million tonnes of liquid steel per year. The feasibility reports have been prepared and are under examination of the Government.

In addition to this MECON has been commissioned for preparation of a feasibility study for expansion of Alloy Steels Plant at Durgapur.

Efforts are also being made to establish plants to produce iron ore concentrate and pellets which can be used for direct reduction to iron & Steel.

#### *Demand Projections for Sponge Iron*

Till now, virtually there has been no use of sponge iron in the country. It would thus be very difficult to estimate the future requirements. The use of sponge iron as a substitute for steel scrap would basically be dependent upon the cost at which sponge iron is made available. Main steel plants may also consume sponge iron in various stages of iron and steel making. On a very rough basis, it is expected that the consumption of sponge iron in the country by the end of Sixth Plan period may be around 4-4.5 million tonnes.

### *Alloy and Special Steels*

The major schemes under implementation during the Fifth Plan period were the expansion of Mahindra Ugin Steel Co. from their licensed capacity of 36,000 tonnes per annum to 60,000 tonnes per annum of tool, alloy and special steels and the commissioning of a 40,000 tonnes of alloy steel making capacity with M/s. Bihar Alloy and Steels Limited. Bihar Alloy and Special Steels Ltd. have already started commercial production. Apart from this, Government clearance has already been accorded for the Forge Shop of Mysore Iron and Steel Ltd. Electric Arc Furnace capacity of M/s. Firth Sterling Ltd. is also likely to be implemented during 1976.

Since electric arc furnace industry has been permitted to diversify to certain specified categories of low alloy and special steels category, the overall availability of alloy and special steels seems to be in excess of our demand projections. However, some imports would be inescapable since the facilities available with the existing electric arc furnaces may not permit production of high alloy steels/stringent specifications in special sections required by the various industrial sectors.

### *25-Year Perspective Plan for Steel Industry*

The Steel Authority of India Limited (SAIL) is preparing a blue print for a 25-year programme for Steel Industry in India. They are having a series of discussions with the Planning Commission to determine the perspective growth in various steel-using sectors which will determine the growth rate of the steel industry. The Metallurgical & Engineering Consultants (India) Ltd. is actively engaged in making detailed studies regarding availability of raw materials and other infrastructural facilities and has already prepared a report entitled "Techno-economic study on utilisation of Indian Iron Ore", giving the reserves and prospects of utilisation of iron ore in steel industry. They are also studying the availability of other infrastructural facilities like transportation, power, etc.; and the possibilities of expansion of existing steel units as also creation of new units. A long-term planning on coal is being done by a Committee in the Department of Coal. An interim report of the Committee has already been submitted.

A blue print of the steel development which is under preparation is expected to be ready by the end of 1976 and can be utilised as a basic document for subsequent updating as required depending on the various other features of the economic development in the country.

Presently, there is some fall in demand in the steel market and with the pick-up in the production with the existing facilities the overall availability of steel is more or less adequate to meet the country's present requirement. However, the present growth rate may not necessarily be an indicator of the future trends. We have to plan our steel production targets on the basis of overall economic growth of the country expected in the next 25 years or so. Due to constraints on resources, we have not been able to implement in the past steel development programmes expeditiously but resources have to be mobilised to achieve the expected level of economy.

### *Research & Development*

The primary goals of an industrial research and development organisation are to reduce production costs and enhance value of products by implementation of process improvements and/or by introduction of new technologies. In order to achieve these goals sustained and scientific efforts are required. For the past one year, a nucleus group of 51 engineers at the Central R&D has been assessing the opportunities for improvement of performance in our Iron and Steel Industry. On the basis of a thorough review of technical literature, study of existing plant practices and also discussions with plant personnel, the various technology development, improvement and adaptation programmes have been formulated.

Following are some of the programmes on which significant progress has been made :—

#### *(i) Beneficiation of Indian Iron Ore & Refractory raw materials :*

A project on beneficiation of Indian Iron Ore and Refractory raw materials for steel plants is on hand. This essentially involves reducing the alumina/silica ratio from the blast furnace burden so as to increase the productivity of Blast Furnace.

#### *(ii) Agglomeration of ore fine and other metallurgical wastes :*

A project on Agglomeration of ore fines has been initiated with an objective to utilise economically the iron ore fines and other metallurgical wastes generated in an integrated iron and steel plant.

(iii) *Development of Technology of Cold Bonded Pellets :*

Another project is the development of technology of cold bonded pellets. The basic objective of this project is production of cold bonded pellets on a commercial scale.

(iv) *Project on performance valuation of Indian Blast Furnace :*

A project on performance valuation of Indian Blast Furnace to analyse the process of operating Blast Furnace in the country has been taken up so that corrective and timely measures may be taken under operating changes in the raw materials conditions.

(v) *Coal Dust Injection into Blast Furnace :*

A project on Coal Dust Injection into Blast Furnace at Bhilai and Rourkela has been initiated for reducing the coke rate in Blast Furnace. This would lead to direct replacement of coking coal by non coking coal and there would be a simultaneous increase in productivity of the Blast Furnace.

(vi) *Help in producing high strength or low alloy steels at Rourkela.*

## STEEL AUTHORITY OF INDIA LIMITED

The authorised capital of the Company is Rs. 2,000 crores. Its paid-up capital went up from Rs. 1317.48 crores as on 31-3-1974 to Rs. 1346.15 crores as on 31-3-1975 (excluding share money of Rs. 28 crores pending allotment). In addition, Government loans amounting to Rs. 170.33 crores were advanced to the Company during 1974-75 for its subsidiaries. The amount of Government loans outstanding as on 31-3-1975 was Rs. 288.986 crores.

The total expenses of the Company for 1974-75 amounted to Rs. 251.75 lakhs as compared to Rs. 53.89 lakhs in 1973-74. This increase was almost entirely due to increase in interest charges which amounted to Rs. 194 lakhs in 1974-75 as compared to Rs. 11 lakhs only in 1973-74. The Company did not draw any funds from Government as grant-in-aid in 1974-75.

The Company has become a public limited company with effect from 1st May, 1975.

The Company's investments increased from Rs. 1326 crores as on 31-3-1974 to Rs. 1372 crores as on 31-3-1975. The equity investment position in the various companies in which Steel Authority of India Limited has acquired interest is indicated below :—

Name of the Company	(Rs. in lakhs)	
	As on 31-3-74 (2)	As on 31-3-75 (3)
<i>Subsidiaries</i>		
1. Hindustan Steel Ltd . . . . .	62,358.00	66,422.00
2. National Mineral Development Corporation . . . . .	8,204.00	8,404.03
3. Bharat Coking Coal Ltd. . . . .	185.01	—
4. Bokaro Steel Ltd. . . . .	60,000.00	60,000.00
5. Hindustan Steel works Construction Ltd. . . . .	50.00	50.00
6. Salem Steel Ltd. . . . .	356.53	812.53
7. Bolani Ores Ltd. . . . .	50.50	50.50
8. Metallurgical & Engg. Consultants (India) Ltd. . . . .	0.05	0.05
9. Metal Scrap Trade Corporation Ltd. . . . .	16.00	16.00
10. SAIL International Ltd. . . . .	—	1.00
TOTAL . . . . .	1,31,220.09	1,35,756.11

(1)	(2)	(3)
<i>Other Companies</i>		
1. Indian Iron & Steel Co. Ltd.	32.43	106.54
2. Manganese Ore (India) Ltd.	36.62	36.62
3. Mysore Iron & Steel Ltd.	1,320.00	1,320.00
TOTAL	1,389.05	1,463.16
GRAND TOTAL	1,32,609.14	1,37,219.27

In 1975-76, the Company has acquired 58% of the total equity capital and 11.68% of the total preference share capital of India Fire-bricks and Insulation Company Limited at a nominal consideration of Rs. 19 only. This company has a refractory plant at Ramgarh near Ranchi which had been closed in January, 1974, and the workers had been laid off. The financial institutions which have a stake had approached Steel Authority of India Limited to help restart the plant and provide it with proper management. Steel Authority of India Limited was also interested in the proper functioning of the plant to ensure supply of refractories to the steel plants. This Company has now become a subsidiary of Steel Authority of India Limited. Its Board of Directors has been reconstituted and steps are being taken to restart the factory. The Government of Bihar have also agreed to transfer to Steel Authority of India Limited its holdings in the company.

*Financial results of leading subsidiary companies of Steel Authority of India Ltd. in 1974-75.*

The financial results of the subsidiary companies of Steel Authority of India Ltd. improved substantially during 1974-75. The total turnover of the subsidiaries increased to Rs. 1112.95 crores in 1974-75 as against Rs. 795.30 crores in 1973-74. The total net profit in 1974-75 was Rs. 39.27 crores as compared to a loss of Rs. 2.75 crores in 1973-74.

*Hindustan Steel Limited*

Hindustan Steel Limited earned a net profit of Rs. 48.24 crores in 1974-75 against the profit of Rs. 4.71 crores only in 1973-74. All its units except Durgapur Steel Plant made a profit. Bhilai Steel Plant and Rourkela Steel Plant earned a profit of

Rs. 38.69 crores and Rs. 18.14 crores respectively. Alloy Steels Plant, Durgapur, Fertilizer Plant at Rourkela and the Central Coal Washeries made a profit of Rs. 1.96, 2.71 and 1.07 crores respectively. Durgapur Steel Plant reduced its loss from Rs. 18.44 crores in 1973-74 to Rs. 14.32 crores in 1974-75.

*National Mineral Development Corporation Ltd.*

The National Mineral Development Corporation Ltd. recorded a profit of Rs. 1.20 crores in 1974-75, as compared to the profit of Rs. 1.58 crores in the previous year.

*Metallurgical & Engineering Consultants (India) Ltd.*

This Company made a profit of Rs. 60.23 lakhs in 1974-75 as compared to a profit of Rs. 45.14 lakhs in 1973-74.

*Hindustan Steelworks Construction Limited*

The profit of Hindustan Steelworks Construction Ltd. went up from Rs. 94 lakhs in 1973-74 to Rs. 1.04 crores in 1974-75.

*SAIL International Limited*

This new company earned a profit of Rs. 11.25 lakhs during the first year of its operation i.e., in 1974-75.

There has been a substantial improvement in the production of steel from the integrated steel plants under the overall supervision and coordination exercised by Steel Authority of India Ltd. During the period, April—December, 1975, there was an additional production of 5,95,000 tonnes of saleable steel from these plants over the production in the corresponding period last year. The production also matched the target for this year. It is expected that the target of 5.7 million tonnes of saleable steel for the year 1975-76 would be achieved in full. Steel Authority of India Limited continues to maintain the requisite liaison and coordination with all the concerned agencies including the organisations producing coal and the Railways.

In the context of higher production and the streamlining of the system of distribution, the availability of steel materials in the domestic market has become very comfortable. There has also been a marginal fall in steel consumption this year and some accumulation of stocks largely due to fall in construction activities and reduced off-take by Government projects and private industries feeding the projects. A number of steps have been taken to meet the situation including a massive effort at export of steel to other countries.

There has been a marked improvement in the industrial relations situation in the subsidiaries of Steel Authority of India Limited, particularly after the proclamation of the Emergency. There has been no major dislocation in the steel plants on account of industrial unrest during the current year. Regular discussions continue to be held with the representatives of Central Trade Unions in the meetings of the Joint Negotiating Committee for the Steel Industry (now named as National Joint Consultative Committee) on issues common to all the steel plants and these have greatly contributed to better understanding and appreciation of the problems. Special attention has been paid to bringing about closer participation of workers at the shop floor level and in production programmes in pursuance of the Government Resolution dated the 30th October, 1975, on workers participation in industry. Similarly, special steps have been taken to engage the required number of apprentices under the Apprentices Act, with particular emphasis on the recruitment of Scheduled Castes and Scheduled Tribes.

The Research and Development Organisation has undertaken/drawn up a number of R&D projects involving technological improvement, particularly in regard to conservation in the consumption of coking coal, raw materials preparation/beneficiation improvement in the lining life of L. D. converters, better yields and reduction in the usage of materials in the production process. These projects are being implemented in close coordination with the steel plants.

Government have asked Steel Authority of India Limited to prepare a 25 year perspective plan for the development of the steel industry in the country. Detailed studies have been undertaken in this connection.

A number of capital schemes have been sanctioned/recommended to Government for sanction during the current financial year. The important amongst them are indicated below :—

- (a) Installation of additional Naphtha Refining Unit of 180 T/day ammonia capacity at an estimated cost of Rs. 18.60 crores.
- (b) Installation of a slag granulation plant at Bokaro Steel Plant with an annual capacity of 1.35 million tonnes of granulated slag at an estimated cost of Rs. 8.2 crores.
- (c) Establishment of a Ferro-Vanadium Plant with a capacity of 480 tonnes of ferro vanadium and 48,000 tonnes of pig iron at Rairangpur, Orissa, at an estimated cost of Rs. 16.06 crores.

- (d) Participation by Steel Authority of India Limited in the equity capital of Chowgule Metal Industries Limited to the extent of Rs. 2.55 crores for the implementation of the Second Pelletisation Plant at Goa.

Steel Authority of India Limited has commissioned MECON and M/s. M. N. Dastur & Co. Private Limited to prepare detailed project reports for Vijaynagar and Visakhapatnam Steel Plants respectively.

Steel Authority of India Limited continues to assist Government in improving and streamlining procedures for distribution of steel.

## HINDUSTAN STEEL LIMITED

### Investment

The authorised capital of the Company is Rs. 700 crores. The paid-up capital as on 31-3-1975 was Rs. 664.22 crores. The entire capital is owned by the Steel Authority of India Limited.

Long-term loans advanced to the Company by Government amounted to Rs. 358.75 crores as on 31-3-1974. The Company repaid an amount of Rs. 22.48 crores during 1974-75 bringing down the outstanding on this account to Rs. 336.27 crores as on March 31, 1975.

In addition, the Company owed to Government an amount of Rs. 14.75 crores as on 31-3-1974 on account of short-term loans sanctioned from time to time to enable it to finance capital expenditure on schemes other than new capital schemes and expansion of townships. The Company repaid an amount of Rs. 1.67 crores in 1974-75, leaving a balance of Rs. 13.08 crores as on March 31, 1975.

During 1975-76, a sum of Rs. 22.5 crores has been subscribed by Government towards the equity capital of HSL upto December, 1975, for financing expenditure on major capital schemes and for expansion of townships of the Company.

### Production

The following table indicates the annual capacity and production in the various units of the Company during the year 1974-75 and for the period April—December, 1975, in relation to the targets for this period :—

Plants/Units	(In '000 tonnes)	
	Ingot steel	Saleable steel
1	2	3
<b>Bhilai Steel Plant</b>		
Annual capacity		
1974-75	2500	1965
Target April-Dec., 1975	2001	1693
Actual April-Dec., 1975	1671	1317
	1608	1350

1	2	3
<b>Durgapur Steel Plant</b>		
Annual capacity	1600	1239
1974-75	819	520
Target April-Dec., 1975	734	560
Actual April-Dec., 1975	718	510
<b>Rourkela Steel Plant</b>		
Annual capacity	1800	1225
1974-75	1066	812
Target April-Dec., 1975	970	663
Actual April-Dec., 1975	904	730
<b>Total (Bhilai, Durgapur &amp; Rourkela)</b>		
Annual capacity	5900	4429
1974-75	3886	3025
Target April-Dec., 1975	3375	2540
Actual April-Dec., 1975	3230	2590
<b>Alloy Steels Plant, Durgapur</b>		
Annual capacity	100	60
1974-75	78.4	36.7
Target April-Dec., 1975	67.4	33.7
Actual April-Dec., 1975	66.3	34.1
<b>Fertilizer Plant, Rourkela</b>		
	Calcium Ni-	Am-
	trate (25 %N <sub>2</sub> )	monium
Annual capacity		460
1974-75		945
Target April-Dec., 1975		221
Actual April-Dec., 1975		188

The total production of ingot steel from Bhilai, Durgapur and Rourkela Steel Plants during the period April—December, 1975, was 3.230 million tonnes and of saleable steel 2.590 million tonnes. The production of ingot steel exceeded the production in the corresponding period last year by 4,33,000 tonnes and of saleable steel by 3,89,000 tonnes, representing an increase of 15.5% and 17.6% respectively. Although the total ingot production fell short of the target marginally, the production of saleable steel was in excess of the target. There was an appreciable improvement in capacity utilization in terms of saleable steel, particularly at Durgapur and Rourkela Steel Plants. A welcome feature of the production performance is the steady recovery staged by Durgapur Steel Plant; the production of saleable steel in this Plant during the period, April—December, 1975, was 5,10,000 tonnes against 3,87,000 tonnes in the corresponding period last year i.e.

an increase of 31.8%. The increase in the production of saleable steel registered at Rourkela Steel Plant during the same period was 26.7%.

There was similar improvement in the production of ingot steel and saleable steel at the Alloy Steels Plant, Durgapur, during the period April—December, 1975. The production of ingot steel was 66,300 tonnes and of saleable steel 34,150 tonnes as against the production of 56,000 tonnes of ingot steel and 27,350 tonnes of saleable steel in the corresponding period last year, representing an increase of 18.4% and 24.9% respectively.

The production of calcium ammonium nitrate from the Fertilizer Plant, Rourkela, during the period April—December, 1975, was 1,88,000 tonnes as against 1,68,000 tonnes in April—December, 1974 i.e. an increase of 11.9%.

Concerted efforts continue to be made by the management of the Company under the over-all supervision and direction of SAIL to maximise production during the remaining months of the year, taking full advantage of improved availability of inputs, a marked improvement in industrial relations, greater discipline among the workers and closer cooperation between the management and labour. Based on the trends of production upto December, 1975, it is anticipated that the total production of saleable steel in 1975-76 will not only exceed the production in 1974-75 by a sizeable quantity but will also exceed the aggregate target. Similarly, the production from the Alloy Steels Plant, Durgapur, and the Fertilizers Plant at Rourkela will exceed the production in 1974-75 substantially.

#### Despatches

The table below gives figures of despatches during the year 1974-75 and during the period April—December, 1975.

Plant	(in '000 tonnes)			
	(Saleable Steel)		(Pig Iron)	
	1974-75	April-Dec. 1975	1974-75	April-Dec. 1975
Bhilai				
Durgapur	1736.1	1218	532.1	329
Rourkela	557.7	557	106.4	101
	823.7	715	88.7	42
<b>TOTAL</b>	<b>3117.5</b>	<b>2490</b>	<b>727.2</b>	<b>472</b>
Alloy Steels Plant	36.7	33.6	—	—
Fertilizer Plant, Rourkela	247.9 (CAN)	(Calcium 233 (CAN) Ammonium Nitrate)	—	—

#### Working Results

The net sales of the Company went up from Rs. 546.95 crores in 1973-74 to Rs. 804.79 crores in 1974-75, i.e. an increase of 47%. The Company earned a net profit of Rs. 48.24 crores in 1974-75 against a profit of Rs. 4.71 crores only in 1973-74. The cumulative loss of the Company has now come down from Rs. 246.16 crores as on 31-3-1974 to Rs. 197.92 crores as on 31-3-1975. The working results of the various units of the Company in 1973-74 and 1974-75 and the cumulative results since inception are indicated below :—

Plant/Unit	(Rs. in crores)		
	1973-74	1974-75	Cumulative since inception
Bhilai Steel Plant	(+)17.778	(+)38.696	(+)43.186
Durgapur Steel Plant	(-)18.435	(-)14.320	(-)189.43
Rourkela Steel Plant	(+)9.737	(+)18.146	(+)0.186
Alloy Steels Plant	(-)4.799	(+)1.956	(-)39.065
Fertilizer Plant, Rourkela	(-)1.200	(+)2.709	(-)17.197
Coal Washeries	(+)0.874	(+)1.069	(+)4.976
Unrealised profit on inter-plant transfers	(+)0.757	(-)0.013	(-)0.064
<b>TOTAL</b>	<b>(+)4.712</b>	<b>(+)48.243</b>	<b>(-)197.921</b>

The profit for the year would have been more but for the impact of a number of escalatory factors amounting in all to Rs. 67.24 crores. These include : larger provision on account of variable dearness allowance (Rs. 11 crores), raw materials (Rs. 36.71 crores) stores and spares (Rs. 14.43 crores) power and fuel (Rs. 3.74 crores) and others (Rs. 1.36 crores).

#### Industrial Relations

The industrial relations situation in the various units of the Company has shown significant improvement, particularly after the proclamation of the Emergency.

The Wage agreement concluded by the Joint Negotiating Committee for the Steel Industry on 30th July, 1975, has been implemented practically in all the units of the Company.

#### Workers' participation in management :

The system of workers' association with management has been given a further impetus and new orientation in pursuance of the new economic programme. New Committees have been

constituted wherever necessary and measures have been taken to revitalise the functioning of the existing Committees. These Committees function in the areas of production, productivity, welfare amenities and facilities, grievances, safety etc. At present 343 committees are functioning in the four steel plants under the Company. Some minor changes in the composition and functions of the various bipartite committees are being made in the light of the provisions of the Government Resolution dated the 30th October, 1975, on workers' participation in industry at shop floor and plant level.

#### *Welfare measures*

The Company continues to provide statutory and non-statutory welfare facilities and amenities to its workers in ample measure so as to ensure a standard of living commensurate with the degree of hard work and efficiency required of them. These benefits have been further enlarged as a result of the new Wage Agreement. These include extension of free education to the children of the employees from middle class to matriculation standard, higher transport subsidy, liberal benefits in case of death or disablement while on duty.

#### *Apprentices Act*

The technical apprentices required to be recruited under the Act have been made. Their number comes to 1,726 (as on 31-12-1975). This includes 214 Scheduled Caste candidates and 345 Scheduled Tribe candidates.

#### *Capital Schemes*

The work on the implementation of capital schemes included in the Fourth Five Year Plan continues to progress. Bhilai Steel Plant is being expanded from the present capacity of 2.5 MT to 4.0 MT. The main features of the expansion are the construction of oxygen blown converters for the production of 1.5 MT of liquid steel, installation of continuous casting for producing blooms and slabs and the erection of 3600 mm heavy plate mill with associated services and utilities. Certain initial work like soil investigation, removal and relocation of muck dump, realignment of railway track, ordering of equipments on indigenous manufactures, design documentation contract with USSR, procurement of steel etc. are in advanced stages. The orders for the import of equipment for continuous casting plant and plate mill from USSR have been finalised. The concreting work for the plate mill was started in August, 1975. The mechanization of Dalli mines and the installation of the second sintering plant at Bhilai are now expected to be completed by the

middle and end of 1977, respectively. The completion of the 8th coke oven battery which is being erected at Bhilai to serve as a replacement unit during the period of shut-down of the existing batteries for rebuilding so as not to affect production, has been deliberately deferred pending an assessment of the technical condition of the existing batteries to which intensive repairs had been carried out earlier. The setting up of a refractory plant at Bhilai to produce 1,37,500 tonnes of quality bricks (75,000 tonnes of fire clay bricks, 37,500 tonnes of basic bricks and 25,000 tonnes of silica bricks) has been approved at a total cost of Rs. 26.0 crores with a foreign exchange component of Rs. 2.8 crores. The project will be completed in 39 months.

At Rourkela Steel Plant, the installation of the spirally welded pipe plant is now expected to be completed by the middle of 1976. The slag granulation plant is expected to be completed in July/August, 1976. An agreement has been signed with M/s. ARMCO of USA for the preparation of a Master Plan for a project for the manufacture of cold-rolled grain-oriented steel sheets which would be available by May, 1976. A coal-based medium pressure boiler house is being set up at Rourkela at a total cost of Rs. 5.18 crores to supply process steam so as to ensure full utilization of the capacity of the power plant as also to effect a saving in liquid fuel consumption. The construction work on the scheme commenced in May, 1975 and it is scheduled to be completed within a period of 3 years. A proposal for the setting up of the second naphtha reforming plant with a capacity of 180 tonnes per day of ammonia so as to augment the production of calcium ammonium nitrate from the Fertilizer Plant is presently under consideration.

There has been some delay in the execution of the scheme for the installation of an additional half coke oven battery at Durgapur Steel Plant which is now likely to be completed by the end of 1976.

#### *Refractory Plant of Assam Sillimanite Limited*

The management of the Refractory Plant of M/s. Assam Sillimanite Limited which had been taken over by the Government and entrusted to HSL for a period of 3 years from the 2nd November, 1972, was further extended upto the 2nd November, 1976. The right, title and interest of M/s. Assam Sillimanite Limited in respect of this refractory plant have been acquired under the Assam Sillimanite Limited (Acquisition and Transfer of Refractory Plant), Act, 1976.

Government had been considering the question of restructuring of Hindustan Steel Limited in consequence of the formation of SAIL. At present, the functions of Hindustan Steel Ltd.



are confined to planning, direction, control and provision of advisory services to the steel plants and other units under its control. With the formation of SAIL these functions have increasingly come under the direct control of this body and there is, therefore, a certain amount of avoidable duplication. It has been felt that this is not in the interest of efficient administration and that SAIL would be in a better position to perform these functions and to coordinate the activities of the various units under HSL. Moreover, the size of these units, measures in terms of capital employed, turn over, labour employed, their importance to the economy etc. are such that each of these units can appropriately be constituted into separate companies with their own Boards of Management. This would not only vest them with independent authority and responsibility but would provide them with new opportunities for developing their own independent styles of functioning and management thereby helping to achieve maximum production and profitability. Further, this type of structure would also stimulate and encourage healthy inter-se competition with beneficial affect on their efficiency. It has, therefore, been decided by Government that Bhilai Steel Plant, Rourkela Steel Plant (including the Fertilizer Plant at Rourkela) and the Alloy Steels Plant at Durgapur be formed into three independent Companies as fully-owned subsidiaries of Steel Authority of India Limited. Durgapur Steel Plant would continue as the residual Hindustan Steel Ltd. Internal and International sales and marketing of products of the public sector steel plants, will be done by one organisation. The Central Coal Washeries at Dugda, Bhojudih and Patherdih which supply prime washed coking coal to the steel plants will be transferred to Bharat Coking Coal Limited. This new arrangement will be made effective from 1st April 1976 and the assets and liabilities of the various steel plants/units would be transferred on the basis of audited accounts for the year 1974-75.

#### Personnel

The total number of employees in Hindustan Steel Limited as on the 31st December, 1975 is shown in the following table indicating separately those belonging to Scheduled Castes and Scheduled Tribes :—

	Total	No. belonging to	
		S.C.	S.T.
Class I			
Class II	7,193	71	17
Class III			
Class IV	82,050	4,271	3,294
	40,361	9,164	6,509
<b>TOTAL</b>	<b>1,29,604</b>	<b>13,506</b>	<b>9,820</b>

## BOKARO STEEL LIMITED

Bokaro Steel Limited was incorporated in January, 1964. As on the 30th September, 1975, the authorised capital of the Company was Rs. 850 crores. The subscribed capital of the company amounted to Rs. 600.33 crores.

#### Production

The following table indicates the production during April-December, 1975 :

	(in tonnes)		
	Target	Production	% to target
1. <i>Hot metal</i>			
April-December, 1975	927,500	718,903	77.5
October, '74 to March '75	434,400	429,307	98.8
Half year ending September, 1974	431,700	356,236	82.5
2. <i>Ingot Steel</i>			
April-December, 1975	338,500	221,121	65.2
October, '74 to March '75	57,000	59,401	104.2
Half Year ending September, 1974	60,000	58,157	96.9

The production of slabs on commercial scale was also taken up during the period and 108,085 tonnes of slabs were produced which was 77.2% of the target.

The production plan approved by SAIL envisaged commissioning of the second blast furnace in August, 1975. But due to uncertain position of supply of coal for the commissioning of the third coke oven battery, the second blast furnace, although ready, could not be commissioned. Hence the target of hot metal during second quarter could not be fulfilled.

The production programme during the remaining period of 1975-76 is as follows :

Month	(in tonnes)				
	Hot metal	Ingot Steel	Slabs	Hot rolled coil	Finished Steel
January, 1976	75,000	37,000	31,000	20,000	19,400
February, 1976	94,000	47,000	40,000	30,000	29,200
March, 1976	120,000	52,000	53,000	50,000	48,400

The maximum hot metal production on a single day was 3,233.5 tonnes on 22nd November, 1975, against the rated capacity of 2,640 tonnes which is a record production for any blast furnace in the country so far. During the year 1975, there was all round increase in the production as compared to the previous year.

#### Despatches

Despatches of various products during the period April-December, 1975, were as follows in comparison to despatches during October, 74 to March, 75 and April, 74 to September, 74.

Products	April -Dec. 75		Actual despatches during	
	Target	Actual	Oct. 74- March, 75	April, 74 Sept. 74
Slabs	125,000	64,275	—	—
steel ingots	151,000	108,345	33,808	53,665
Pig iron	557,000	409,428	320,213	273,661
Amm. sulphate	11,900	10,283	6,041	6,200
Crude tar	12,500	13,829	17,104	15,491
BF Coke	45,000	86,587	124,658	135,749
Pearl coke	18,000	12,402	3,982	3,535

#### Sales

Sales realisation from the various products during April-September, 1975 was as follows in comparison to previous half year and corresponding period in the previous year :

	Sales realisation in Rs. during		Corresponding period of previous year
	April-Sept., 1975	Previous half year	
Slabs	4,91,52,801	—	—
Steel ingots	8,08,16,855	3,20,39,406	4,04,74,050
Pig iron	9,31,39,405	12,18,12,244	15,01,79,653
Ammonium sulphate	40,99,479	36,63,755	34,33,403
Crude tar	60,54,750	89,04,446	88,04,431
BE coke	1,43,00,999	3,36,42,311	3,62,45,037
Pearl coke	8,39,419	10,09,814	8,83,800
Others	25,23,356	23,96,520	15,05,894
	25,09,27,064	20,34,68,496	24,15,26,268

#### Working results

The loss for the year ending September, 1975, is estimated to be Rs. 8.01 crores after making provision for depreciation to the extent of Rs. 10.70 crores. The total sales turnover during the period amounts to Rs. 40.256 crores and total income amounts to Rs. 45.173 crores. There is no cash loss.

#### Construction

The work on expansion of the plant to four million tonnes is simultaneously in progress along with the work on the first stage of 1.7 million tonne capacity. The progress of construction work during the period April-December, 1975, in relation to the work done in the two previous half years, is indicated below :

Item	Unit	April-Sept. 75	Oct. to Dec. 75	Oct. 74 to Mar. 1975	April to Sept. 1974
Concrete and RCC	M3	69,398	31,128	88,656	92,559
Erection of technological structures	T	3,063	1,225	4,144	4,658
Building structures	T	10,809	5,257	9,798	11,457
Mechanical eqpt.	T	17,932	10,829	16,930	19,819
Electrical eqpt.	T	3,092	1,435	5,670	6,287
Refractories	T	15,892	6,210	18,998	18,019

Due to concentration on completion of erection work on the hot strip mill, the rate of progress of construction work during the period was slightly below the progress achieved in the previous half year.

#### Blast furnaces

Blast furnace No. 2 is now almost ready for commissioning. The trial of several units has been carried out and that of other units is in progress. The work on blast furnace No. 3 is in an advanced stage. The civil work on blast furnace No. 4 and 5 is also in advanced stage and erection of the shell of furnace proper has been started.

#### Coke ovens

Third coke oven battery is ready for heating up. The refractory work on the fourth battery is completed and the mechanical erection is also well advanced. The work on three batteries of the expansion programme is also in hand.

### *Steel melting shop*

The third converter is now almost ready. The ingot mould foundry has also been commissioned. The erection of two more converters (100 T) is being carried out. The civil work on the second steel melting shop is in progress.

### *Slabbing mill*

The slabbing mill with four soaking pits is already in operation. Four more soaking pits are also ready for commissioning.

### *Hot strip mill*

The main emphasis is being laid on completion and commissioning of the hot rolling mills complex with one re-heating furnace and one coiler before the end of the financial year. Most of the work is in advanced stage of completion. 72 hours trial running of main drive motors of roughing mill stand No. 1, 2, 3 & 5 was successfully completed. Major reheating furnace equipment like charging roll tables, slab transfer cars, slab charging and discharging gate and crushers were also tried out. Two oil cellars for supply of lubricating oil and hydraulic oil to roughing mill have been commissioned. All refractory work in reheating furnace and its chimney was completed and made ready for heating.

### *Cold rolling mills*

The main working stands of the tandem mill have been grouted. Structural erection work has been started for expansion (2.5 million tonnes) in the hot rolled coil finishing section. A task force has been constituted to speed up the work on the cold rolling mills scheduled for completion by December, 1976.

### *Bharat Refractories Limited*

The refractory plant at Bhandaridah, Distt. Giridih, Bihar was acquired by the Govt. of India by Act 65 of 1971 and BSL were appointed as Managers. The plant, which was taken over on 19-2-1972 was managed by BSL on behalf of the Govt. of India upto 21-7-1974 and the new company named Bharat Refractories Limited was registered on 22-7-1974 as a subsidiary of BSL.

The assets of the undertaking of M/s. Asian Refractories Ltd. have since been transferred to the company by the Govt.

### *Investment*

Against the authorised capital of Rs. 2 crores, Rs. 73 lakhs have so far been subscribed by BSL. During the period from 1-4-1975 to 31-12-1975, a sum of Rs. 7.92 lakhs has been spent

on capital account, in addition to Rs. 100.47 lakhs spent upto 31-3-1975.

### *Financial performance*

During the first half year of 1975-76 ended on 30-9-1975 the company has incurred a loss of Rs. 7.16 lakhs against the estimated loss of Rs. 0.54 lakhs as originally envisaged in the budget estimates. Besides low production due to lack of balancing facilities and additional equipment, the higher quantum of loss during this half year was also due to stoppage of work during the month of April 1975 because of labour trouble. During the previous half year October, 1974 to 31st March, 1975, the loss incurred by the plant was Rs. 6.68 lakhs.

### *Production and sales performance*

During April-December, 1975 production of bricks and mortar in Bharat Refractories Ltd. was 9,460 tonnes and 1,903 tonnes respectively as compared to the targets of 12,550 tonnes and 3,800 tonnes respectively. The reasons for variations from the target are mainly the lack of additional equipment and balancing facilities, labour trouble during April, 1975, constant fluctuations in kiln temperature due to frequent power failures, inadequate drying facilities and consequent increase in rejections.

## NEW STEEL PLANTS

### Salem Steel Limited

#### General

In May 1972, Government took an investment decision to set up a special steels plant at Salem with the following product-mix :

Sheets and strips	tonnes/'year
Stainless Steel . . . . .	70,000
Electrical Steel . . . . .	75,000
Other Special Steels . . . . .	50,000
<b>TOTAL</b> . . . . .	<b>1,95,000</b>

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.

Salem Steel Ltd. was incorporated on October 25, 1972 with an authorised capital of 100 crores, and its Registered Office was located at Salem in Tamil Nadu. After the setting up of SAIL, Salem Steel Ltd. has become a wholly owned subsidiary of SAIL. The paid-up share capital of the Company stands at Rs. 900.53 lakhs, as on 31-12-75. This excludes the share deposit of Rs. 40 lakhs.

During 1975-76, the project has practically completed the infrastructure facilities required for taking up civil foundations

work and structural fabrication for the Cold Rolling Mill. However, in view of the constraint on resources, the construction schedule of phase I of the project is likely to be delayed by about two years.

The Detailed Project Report was received from the Consulting Engineers on December 30, 1974 and the report of the Expert Committee which examined the same was received in September, 1975. This report is now under consideration. The product-mix now envisaged is as follows :

	Tonnes/year
Stainless Steel . . . . .	70,000
Electrical Steel . . . . .	75,000
Other Special Steels and Mild Steel . . . . .	75,000
<b>TOTAL</b> . . . . .	<b>2,20,000</b>

Meanwhile all the land required for the plant, railway siding and township has been acquired, except for a small acreage. Mechanical and electrical specifications for major and auxiliary equipment required for Phase I have been received from the Consulting Engineers. The installation of facilities for construction power supply is nearing completion. Stage I of the construction water supply network has been commissioned and work on Stage II is in progress. As regards the railway approach siding from Salem Junction, work was started by the Southern Railway in September, 1974. Earthwork to the extent of 70% of the quantity involved has been completed and 10 out of the 15 culverts and bridges in the line have been completed. This is expected to be completed by the end of 1975-76.

Construction of boundary wall, project office and fly-over on the railway track, establishment of construction facilities like approach roads to plant area, construction laboratory, construction water, power and communication systems and work on diversion of natural water courses are in an advanced stage of completion. Excavation for the plant railway track system has almost been completed. Railway track materials have been laid and linked over a length of 3.2 Kms out of 4.5 Kms to be laid initially. Work in progress includes equipment storage sheds, drinking water overhead tank, drinking water treatment plant, mechanical and electrical repair shop, central stores and watch towers.

### *Visakhapatnam and Vijayanagar Steel Projects*

As regards the steel projects to be set up at Visakhapatnam and Vijayanagar, the Steel Authority of India Limited have commissioned the Detailed Project Reports for these two projects in April 1975. Messrs. M. N. Dastur & Co. and the Metallurgical and Engineering Consultants (India) Ltd. are the Consultants respectively for Visakhapatnam and Vijayanagar Steel Projects. The Detailed Project Reports are expected to be submitted by the end of 1976. Meanwhile, work relating to the acquisition of land required for these projects and studies for the development of infrastructure facilities are progressing satisfactorily. The office of the General Manager of the Visakhapatnam Steel Project has been shifted from New Delhi to Visakhapatnam with effect from the 1st September, 1975. Similarly, the office of the General Manager of the Vijayanagar Steel Project has been shifted from New Delhi to Bangalore.

### **NATIONAL MINERAL DEVELOPMENT CORPORATION LIMITED.**

The National Mineral Development Corporation Ltd., is entrusted with 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 and Bailadila No. 14 deposits. Mechanised iron ore mines are also under construction at Bailadila deposit No. 5, Donimalai and Megha-hatuburu, apart from the expansion and modification of the Kiriburu mine. In addition, the Corporation has in hand investigations and feasibility studies on certain other deposits such as Malangtoli, Bailadila Deposit No. 4, Kumaraswamy and Raman-durg.

#### *Finance*

The authorised capital of the Company is Rs. 100 crores. The paid up capital as on 31-12-1975 was Rs. 84.04 crores and loans from Government/SAIL as on that date stood at Rs. 54.08 crores.

During the year 1974-75, the Company earned a net profit of Rs. 1.20 crores, bringing down the cumulative loss to Rs. 11.05 crores as on 31-3-1975.

#### *Production and Despatches*

Production and despatches during the year 1974-75 and for the period April—December, 1975 are indicated in Appendix I.

#### *Performance of Projects in Production*

##### *Kiriburu*

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 has also been despatching some quantities of lump ore to the Rourkela Steel Plant and for exports during 1975-76. From April to December, 1975 the Kiriburu mine has met the full targetted requirements of Bokaro Steel Plant. Additionally, the mine has despatched 2.15 lakh tonnes of lump ore to the Rourkela Steel Plant and 0.84 lakh tonnes to Visakhapatnam for exports. In fact, additional quantities of lump ore were available for exports, but did not find acceptance with Japanese buyers.

### *Visakhapatnam and Vijayanagar Steel Projects*

As regards the steel projects to be set up at Visakhapatnam and Vijayanagar, the Steel Authority of India Limited have commissioned the Detailed Project Reports for these two projects in April 1975. Messrs. M. N. Dastur & Co. and the Metallurgical and Engineering Consultants (India) Ltd. are the Consultants respectively for Visakhapatnam and Vijayanagar Steel Projects. The Detailed Project Reports are expected to be submitted by the end of 1976. Meanwhile, work relating to the acquisition of land required for these projects and studies for the development of infrastructure facilities are progressing satisfactorily. The office of the General Manager of the Visakhapatnam Steel Project has been shifted from New Delhi to Visakhapatnam with effect from the 1st September, 1975. Similarly, the office of the General Manager of the Vijayanagar Steel Project has been shifted from New Delhi to Bangalore.

### **NATIONAL MINERAL DEVELOPMENT CORPORATION LIMITED.**

The National Mineral Development Corporation Ltd., is entrusted with 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 and Bailadila No. 14 deposits. Mechanised iron ore mines are also under construction at Bailadila deposit No. 5, Donimalai and Meghatuburu, apart from the expansion and modification of the Kiriburu mine. In addition, the Corporation has in hand investigations and feasibility studies on certain other deposits such as Malangtoli, Bailadila Deposit No. 4, Kumaraswamy and Raman-durg.

#### *Finance*

The authorised capital of the Company is Rs. 100 crores. The paid up capital as on 31-12-1975 was Rs. 84.04 crores and loans from Government/SAIL as on that date stood at Rs. 54.08 crores.

During the year 1974-75, the Company earned a net profit of Rs. 1.20 crores, bringing down the cumulative loss to Rs. 11.05 crores as on 31-3-1975.

#### *Production and Despatches*

Production and despatches during the year 1974-75 and for the period April—December, 1975 are indicated in Appendix I.

#### *Performance of Projects in Production*

##### *Kiriburu*

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 has also been despatching some quantities of lump ore to the Rourkela Steel Plant and for exports during 1975-76. From April to December, 1975 the Kiriburu mine has met the full targetted requirements of Bokaro Steel Plant. Additionally, the mine has despatched 2.15 lakh tonnes of lump ore to the Rourkela Steel Plant and 0.84 lakh tonnes to Visakhapatnam for exports. In fact, additional quantities of lump ore were available for exports, but did not find acceptance with Japanese buyers.

*Bailadila No. 14*

The performance at Bailadila No. 14 during 1974-75 was lower than planned due to a five-week strike by the mine workers in April-May, 1974, the All-India Railway strike from the 8th May to the 28th May, 1974, lower availability of plant on account of breakdowns and unfavourable weather conditions during July to October, 1974.

For the year 1975-76, the target for production was fixed at 60 lakh tonnes to match with the export target of the same order. Actual production till the end of December, 1975 was 34.97 lakh tonnes, against the proportionate target of 40.70 lakh tonnes. The shortfall in production/despaches was mainly on account of unsatisfactory operation of wagons tipplers at Visakhapatnam port, undue severity and prolongation of monsoon conditions up to October, and loss of production for about 10 days due to snapping of conveyor belt No. 203 and 204. Difficulties were also experienced due to high port stocks, caused by delayed nomination of ships by the Japanese buyers.

*Panna Diamond Mines*

In the year 1974-75, the production from Panna diamond mines was 20,114 carats against the target of 18,000 carats. During 1975-76, actual production of diamonds is expected to exceed the target. Against the proportionate target of 12,400 carats from April to December, 1975 actual production has been 13,314 carats. At the auctions held in Madras in September/October, 1975, 3,957.31 carats of Panna diamonds were sold for Rs. 20,48,725/-.

*Projects under Construction*

The expansion and modification of the Kiriburu mine to produce 1.17 million tonnes per annum of lump ore and 2.62 million tonnes of fines, to meet the expanding requirements of Bokaro, is under execution. The expanded mine and plant are ready and erection of equipment is in progress. Some of the equipment supplied by the Heavy Engineering Corporation has revealed certain defects which are under rectification. The scheme is expected to be completed shortly.

*Bailadila Deposit No. 5*

This new mine is being developed for the production of 4 million tonnes of sized ore for export to Japan under a long term contract. The civil and structural works for the plant have been practically completed. Most of the equipment in the

screening plant has been erected. There has been considerable delay on the part of the H.E.C. and M.A.M.C. in supplying essential equipment, apart from the technical difficulties encountered in the drive of the tunnel by the National Projects Construction Corporation. As a result of special arrangements made by the NMDC, progress of the tunnel drive has now picked up. Out of a total length of 2,022 metres, 1,913 metres have been completed leaving a balance of 109 metres. With the recent progress achieved in tunnelling it is expected that the entire tunnel excavation may be completed by March, 1976. The project is expected to be commissioned by the end of 1976-77.

*Donimalai Iron ore Project*

The project is designed to produce 1.6 million tonnes of washed lump ore and about 2 million tonnes of high grade beneficiated ore per year. Completion of the project is behind schedule, mainly due to the difficulties and delay in the import of crushers for the plant. Mine development work is complete and civil and structural works are progressing apace. The erection of the stackers has been completed and of reclaimers is nearing completion. The wagon loader is expected to be received shortly. The construction of township is almost complete. The project is expected to be commissioned by the end of 1976.

In order to utilise the fines produced from the Donimalai mines, it is proposed to set up a pelletisation plant with a capacity of 2 million tonnes per annum. Global tenders have been received for the construction of the pellet plant.

**MEGHAHATUBURU IRON ORE PROJECT**

The project report for the development of a new mine based on the Meghahatuburu deposits in South Bihar to meet the requirements of the expansion stage of Bokaro has been prepared by the NMDC and is under consideration of SAIL. In view of the importance of developing this mine to synchronise with the 4 million tonne stage of Bokaro, advance action is being taken for the procurement of long-lead items of equipment and preliminary mine development works etc., in anticipation of Government approval of the Detailed Project Report.

**FEASIBILITY STUDIES**

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

- (i) Ramandurg and Kumaraswamy in Karnataka, mainly as potential sources of supply for the Vijayanagar Steel Plant;

- (ii) Malangtoli range in Orissa; and
- (iii) Bailadila Deposit No. 4 and Roughat in Madhya Pradesh.

### ADMINISTRATIVE

In view of the growing activities of the Corporation and the expanding role envisaged for it in the coming years, important organisational changes have been instituted during the current year. The Corporation hitherto had a Chairman-cum-Managing Director, based at Hyderabad. To bring about a greater degree of coordination between the NMDC and the holding Company, a Director of SAIL has been concurrently appointed as part-time Chairman of NMDC. In addition to the Managing Director, a post of Joint Managing Director has been created to cope with the expanding activities of the Corporation.

### KUDREMUKH IRON ORE PROJECT

The work relating to this project is being transferred by the NMDC to a separate Company.

#### Personnel

The total number of employees in National Mineral Development Corporation Limited as on 31-12-75 is shown in the following table, indicating separately those belonging to Scheduled Castes and Scheduled Tribes:

	Total	No. belong to	
		S. C.	S.T.
Class I . . . . .	462	17	1
Class II . . . . .	77	4	1
Class III . . . . .	4,153	312	512
Class IV . . . . .	2,169	372	770
<b>TOTAL</b> . . . . .	<b>6,861</b>	<b>705</b>	<b>1,284</b>

### BOLANI ORES LIMITED

Bolani Ores Limited was incorporated in 1957. The Company was formed by the Government of India in collaboration with Orissa Mineral Development Company Limited 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 the Orissa Mineral Development Company Ltd. in the ratio of 50.5 and 49.5 respectively. With the formation of the Steel Authority of India Limited, the shares held by the Government of India in the Company have been transferred to SAIL. The authorised capital of the Company was increased to Rs. 150 lakhs in July, 1973 and further increased to Rs. 165 lakhs in August, 1975.

Till last year, the Board of Directors of the Company consisted of five members including the Chairman. The Chairman and two Directors were the nominees of SAIL and the other two Directors were the nominees of the Orissa Mineral Development Company Limited. Two more Directors have now been appointed on the Board, one each as the nominee of Industrial Development Bank of India and Industrial Finance Corporation of India, in accordance with the terms and conditions attached to the loans sanctioned to the Company by the financial institutions.

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 the Durgapur Steel Plant. The Company also produces manganese ore. The production and despatches of iron ore and manganese ore during the last three years have been as under:

	(In '000 tonnes)		
	1972-73	1973-74	1974-75
Iron Ore Lump . . . . .	1,166	978	1,097
Iron Ore Fines. . . . .	389	205	265
Manganese Ore . . . . .	20	13	8

The financial year of the Company is from the 1st October of one year to the 30th September of the next year. The profit made/loss incurred by the Company during the last three years



has been as under :—

Year ending	(Rs. in lakhs)	
	Profit/Loss (+)	(after provision for (-) gratuity and deprecia- tion).
September, 1973	(+)	4.99
September, 1974	(-)	36.85
September, 1975	(-)	59.94 (provisional)

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 mechanization 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 expansion and mechanization scheme in April, 1975 and the supply of new sized ore to the Durgapur Steel Plant has commenced. Full commissioning of the project is expected to be completed by February, 1976.

The Company has obtained term loans to the extent of Rs. 275 lakhs from the Industrial Development Bank of India, the Industrial Finance Corporation and the State Bank of India. Initially, it was expected that the remaining amount would be financed from the Company's own resources. As the Company's own resources to finance a part of the project have not been up to expectation, they are considering the issue of additional capital and obtaining a loan from the Steel Authority of India Ltd.

## HINDUSTAN STEELWORKS CONSTRUCTION LIMITED

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.

Originally started with the site levelling, civil and structural engineering works of Bokaro Steel Plant, the company had 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, hot rolling mills, etc.

The company has developed expertise to take up any complicated construction of steel plants right from the site investigation works to commissioning of the sophisticated plants. The company is already associated with the expansion works for Bhilai Steel Plant, Rourkela Steel Plant and Durgapur Steel plant.

In addition to the steel plant work, the Company has diversified its activities for the construction of dams, power houses and other industrial buildings and factories.

The authorised capital of the Company is Rs. One crore and its paid-up capital as on date is Rs. 50 lakhs. The Company has accumulated reserves to the extent of Rs. 290 lakhs as on 31-3-1975.

The Company has completed ten years of its existence. During this period the annual turn-over of the company had increased from Rs. 4 crores (1965-66) to Rs. 52 crores (1974-75). The significant feature during the period under review is the commissioning of hot strip mill of BSL whose equipment erection has been carried out by H.S.C.L.

### Review of activities

#### 1. Bokaro Steel Plant

The financial progress of different works in stage-I and stage-II of Bokaro Steel Plant during the 1st half of 1975-76 and the

target for the 2nd half is as follows :—

(Figures are in crores Rs.)

Sl. No.	Name of Works	Budget for 1975-76	Budget for the period Apr. 1975 to Dec. 1975	Actual for the period April 1975 to Dec. 1975	Budget for the period of Jan. 1976 to March, 1976
1.	Plant works for stage-I & II including equipment, erection and refractory works	27.27	20.45	15.66	11.61
2.	Township works at Bokaro	2.43	1.83	1.08	1.35
3.	Limestone quarry including township at Bhavanathpur	1.30	0.97	0.67	0.63
	Total	31.00	23.25	17.41	13.59

Physical progress of important items for the period of April, 1975 to December, 1975 is as follows :

Sl. No.	Item	Stage-I		Stage-II	
		Target	Achieved	Target	Achieved
1.	Excavation M3	550	1,850	435,360	5,12,691
2.	Concrete M3	21,162	21,315	90,579	80,356
3.	U.G.C. M	730	405	3,140	3,737
4.	Strl. Fbcn. M/T			6,797	6,185
5.	Strl. Ercn. M/T	9,401	5,537	14,750	9,504
6.	Eqpt. Ercn. M/T	16,156.03	10,271.55	4,563	4,318
7.	Refractory M/T	18,654	15,504	9,595	7,452

The shortfall was mainly due to heavy rain, non-availability of matching steel sections and certain sizes of reinforcement steel. Work also suffered due to non-availability of equipment in sequence and non-receipt of structures in sequence from time to time. Efforts are being made to adhere to commissioning schedule of various units.

## 2. Bhilai Steel Plant

Against a financial target of Rs. 6.57 crores for the period April—December, 1975, Rs. 4.21 crores have been achieved. The proposed budget for the year 1975-76 is Rs. 10.09 crores.

Physical progress of the important items for the period April—December, 1975 is as follows :

Sl. No.	Item	Target	Achieved
1.	Earthwork (M3)	10,04,300	8,07,544
2.	Concrete (M3)	55,864	36,650
3.	Strl. Fabn. (M/T)	5,700	4,204
4.	Strl. Erec. (M/T)	4,000	1,280

The shortfall is mainly due to backlog in excavation in plate mill area in 4 MT stage. As such fronts for concreting of mass foundation could not be created. Labour force employed on the work is being increased now and the work will now gain further momentum. Structural fabrication had suffered for sometime due to non-availability of matching steel but this has since been solved and the work is geared up and is progressing well.

## 3. Durgapur Steel Plant

Against a target of Rs. 0.39 crores for the period April—December, 1975, Rs. 0.25 crores have been achieved upto the end of November, 1975 in various works like coke oven battery No. 5A, 2nd slag bridge, General Superintendent's office building, refractory works, etc. Budget for the full year is Rs. 0.56 crores.

## 4. Rourkela Steel Plant

Civil and structural works of the spirally welded pipe plant have made satisfactory progress. Some delay occurred in structural fabrication which is now being made up. More agencies have also been arranged for erection works.

Regarding other expansion units, erection works including sheeting in stripper bay have been completed and the extended portion is being used by the operation department. Work in electric repair shop is on hand. Fabrication of structures of other units is also in progress and erection will be taken up shortly.

Against a target of Rs. 1.46 crores for the period April—December, 1975, the performance was Rs. 1.12 crores. Budget for the year is Rs. 2.28 crores.

## 5. Salem Steel Plant

Work is in progress on site levelling, railway track system, mechanical and electrical repair shop, storage reservoir, etc. Finishing works are in progress in project office building, watch

tower and car and cycle parks, etc. Diversion channel is nearing completion.

Budget for the year is Rs. 0.68 crores. During the period April—December, 1975, Rs. 0.40 crores have been spent.

#### 6. Visakhapatnam Steel Plant

Work is in progress on soil, hydrological/hydro-geological investigation works which were awarded to this company in August, 1975. Work to the extent of Rs. 0.04 crores have been done for the construction of boundary pillars and peg marking, against the target of Rs. 0.09 crores for April—December, 1975.

#### 7. Vijayanagar Steel Plant

Work to the extent of Rs. 0.017 crores have been done against the target of Rs. 0.02 crores for April—December, 1975. The soil, hydrological/hydro-geological investigation works will be taken up shortly.

#### 8. Works outside steel sector

(a) *Bailadilla iron ore deposit No. 5*: Against a financial target of Rs. 0.32 crores for the period April—December, 1975, Rs. 0.28 crores have been achieved. Total budget provision for the year 1975-76 is Rs. 0.40 crores.

(b) *Balco smelter complex/Korba*: Out of a financial target of Rs. 3.31 crores for the year 1975-76, Rs. 2.32 crores have been achieved.

(c) *Supa dam*: The work on this project is progressing satisfactorily. Because of the heavy rains and high flow of water the progress on rock excavation was less for the last two months and the work will be in full swing after the monsoon. Drawings for civil works for cableway are being received from the suppliers. Procurement of batching and mixing plant and crusher and screening plant is under way.

(d) *2nd Hooghly bridge*: Work is in progress on both Calcutta and Howrah side approaches. Against a target of Rs. 0.56 crores for April—December, 1975, Rs. 0.27 crores have been achieved.

(e) *Obra thermal power plant*: Against a target of Rs. 0.25 crores for the year 1975-76, Rs. 0.19 crores have been achieved upto December, 1975.

(f) *Other works*: Achievement during this period in respect of works other than mentioned above is Rs. 6.10 crores. The total target for the year 1975-76 is Rs. 8.52 crores.

*Budget*: Revised budget for the year 1975-76 for all the projects under construction is Rs. 60.71 crores. Total turn-over for the last year was Rs. 52 crores against a target of Rs. 57 crores.

#### Industrial relations:

Compared to the corresponding period of the last year, the industrial relation has improved considerably, especially after the declaration of emergency. Labour situation was peaceful in all the units of HSCL during the period.

## METALLURGICAL AND ENGINEERING CONSULTANTS (INDIA) LIMITED

The authorised capital of the Company, a wholly-owned subsidiary of Steel Authority of India Limited, is Rs. 4 crores. The paid-up capital as on the 31st March, 1975, was the same as on 31st March, 1974 namely, Rs. 5,000. The turn-over during 1974-75 was Rs. 5.95 crores as compared to the turn-over of Rs. 7.02 crores in 1973-74. The Company earned a net profit of Rs. 60.23 lakhs in 1974-75, as against the profit of Rs. 45.14 lakhs in 1973-74. The profit was transferred to the general reserve, raising the total amount in the general reserve to Rs. 105.37 lakhs.

Hindustan Steel Limited had signed a collaboration agreement with M/s. Tiajpromexopt of U.S.S.R. for provision of technical assistance to its Central Engineering & Design Bureau (now MECON) for designing iron and steel projects. The agreement which provided for supply of design documentation, deputation of Soviet specialists and training of Indian engineers in U.S.S.R. was for a period of 5 years effective from the 1st May, 1970. This agreement has been renewed for another 5 years. In December, 1975, an Addendum to this agreement has also been approved to facilitate the coordination of design and engineering work connected with the expansion of Bokaro and Bhilai Steel Plants to 4.0 million tonnes each.

The Company continues to provide consultancy and engineering services for the development of ferrous and non-ferrous metallurgical enterprises. Its major assignments are indicated below :—

(a) The Company continues as the principal consultant for the expansion of Bokaro Steel Plant from its first stage of 1.7 million to 4.0 million ingot tonnes. It has also entered into an agreement under which it has been assigned detailed engineering and technical consultancy work relating to expansion of Bokaro Steel Plant to 4.75 million tonnes.

Bokaro Steel Limited has entrusted MECON with detailed engineering for a slag granulation plant of a capacity of 1.3 million tonnes.

(b) It continues to be associated with a number of new capital schemes and schemes for facilities aimed at optimisation of

production at the steel plants of Hindustan Steel Limited. These include expansion of Bhilai Steel Plant to a Capacity of 4.0 million ingot tonnes, mechanisation of Dalli mines and setting up a sintering plant, 8th Coke Oven Battery Complex and a refractory plant at Bhilai; installation of an additional half coke oven battery and the rebuilding of one coke oven battery at Durgapur; rebuilding of a coke oven battery, setting up a spirally welded pipe plant a slag granulation plant and a medium pressure boiler and a detailed report on the revamping of hot strip mill at Rourkela Steel Plant. It has been commissioned to prepare a pre-investment feasibility report for the expansion of Alloy Steels Plant at Durgapur.

(c) The Company continues to supply detailed engineering and consultancy services to Mysore Iron and Steel Limited for the setting up of a forge shop at Bhadravati.

(d) MECON has been commissioned as consultants to Indian Iron and Steel Company for monitoring the plant rehabilitation scheme of their Burnpur Works.

(e) It has been commissioned to prepare the detailed project report for the Vijayanagar Steel Plant.

(f) It has been commissioned by SAIL for the preparation of feasibility reports for setting up ferro-manganese high carbon ferro-chrome plant in Orissa.

(g) MECON is associated in the preparation of a 25-year perspective plan for the development of the steel industry undertaken by SAIL.

(h) MECON continues to serve as the Prime Indian consultant to Bharat Aluminium Company Limited for the smelter and fabrication complex of their Korba Aluminium Project. The first phase of the complex has been commissioned successfully. It has also entered into an agreement with BALCO for technical consultancy and detailed engineering for future alumina and aluminium projects in India and abroad. It has been entrusted with the preparation of a planning note on the development of alumina/aluminium industry in the country by 2000 A.D.

It has been asked by the Andhra Pradesh Industrial Development Corporation to study the feasibility of setting up an aluminium complex in Andhra Pradesh.

(i) MECON has taken up the supply of a consultancy for a cold rolling mill complex for Nagarjuna Steel Project in Hyderabad, a blooming mill for Mahindra Ugine and a sizing-cum-reducing mill for Seamless Tubes Plant, ITC, Jamshedpur and the revamping of the existing structural mill of Mukund Iron and Steel Works. It has also been entrusted with detailed engineering

work for the setting up of a seamless tube plant at Trichi. Wheels India Limited, Madras, have entrusted MECON with the preparation of a feasibility report for setting up a rolling mill unit. A similar job has been given by the Kerala State Industrial Development Corporation for Steel Complex Ltd., Feroka.

(j) Among its other metallurgical assignments are the feasibility report for the utilisation of iron ore in Ongole in Andhra Pradesh for the manufacture of alloy steels after beneficiation and pelletisation, a ferro alloys plant in Orissa and a pelletisation plant in Bihar and Orissa area. It has also taken up detailed engineering of a pilot sponge iron plant in Heavy Engineering Corporation based on producer gas (R&D Project).

(k) MECON has recently further diversified its consultancy activities in chemical industries. It is preparing a detailed project report for M/s. Kerala Mineral and Metals Limited for their titanium dioxide pigment Plant as Quilon and a process evaluation report for M/s. Carbon and Chemicals India Limited for their proposed carbon black plant at Cochin. It is also preparing a feasibility report for the setting up of a calcium carbide plant for the Andhra Pradesh Industrial Development Corporation.

(1) MECON has prepared and submitted a feasibility report for the setting up of a sponge iron and steel complex at Abu Dhabi.

As a welfare measure, the Company has introduced a scheme for gratuity-cum-life insurance for its employees and necessary coverage has been taken from the Life Insurance Corporation of India.

The Company has been appointed as Consultants to the Department of Steel for a period of two years from the 1st February, 1976.

#### Personnel :

The total number of employees in MECON as on 31-12-1975 is given in the following table, indicating separately those belonging to Scheduled Castes and Scheduled Tribes.

Class	Total No. of Employees	Scheduled Caste	Scheduled Tribe
I	1,288	13	2
II	36		1
III	749	18	37
IV	277	52	65
	2,350	83	105

### INDIAN IRON AND STEEL COMPANY LIMITED

The Indian Iron and Steel Company Limited own, in addition to the integrated Steel Plant at Burnpur, an Iron Foundry at Kulti (which is also making spun pipes), captive collieries at Chasnalla, Jitpur and Ramangore and Iron Ore Mines at Gua and Manoharpur. The company also have a coal Washery at Chasnalla and ropeway to transport coal from Jitpur to the Washery and from the Washery to Burnpur works. The Company have a subsidiary, IISCO-Stanton, Pipe and Foundry Company Ltd. at Ujjain (Madhya Pradesh) which has been promoted in collaboration with the British Steel Corporation (International) Limited. This Company produces cast iron spun pipes of various dimensions. The rated capacity of the Steel Plant of the Company is 1 million tonnes of ingot steel corresponding to 0.8 million tonnes of saleable steel.

The management of the Company was taken over by the Government of India with effect from the 14th July, 1972 initially for a period of two years. This was done with a view to arresting the precipitous fall in production of the Steel Plant at Burnpur, to tone up the management and increase the production by undertaking the necessary repairs and renovations. Originally, a two-year period was considered adequate to improve the technical health of the Plant which had deteriorated owing to neglect of maintenance/replacement and repairs over a long period of time. On actually taking down some of the equipments, the condition was found to be worse than anticipated. Taking into account the necessity for carrying out repairs/replacement to restore the capacity of the Plant to its rated level, the need for continuity of control over the management of the Company by various public sector institutions and the need to stabilise the improvements made in administration, the period of take-over of the management of the Company was extended by three years with effect from the 14th July, 1974 through an amending Act. Enabling provision has also been made for further continuance of the take-over by a period of five years, if necessary.

During the first two years of the take-over, the management of the Company was run by a Custodian appointed by Government and assisted by an Advisory Board. During the extended period, the post of Custodian has been done away with and a Board of Management has been constituted. An Administrator

has been appointed to carry out the executive functions of the management.

After the take-over of the management of the Company in 1972, the technical health of the various items of plant and machinery were examined and a Plant Rehabilitation Programme was drawn up. This programme envisaged an investment of Rs. 43 crores to restore the capability of the Steel Plant to produce close to the installed capacity within a period of three years. The entire amount has been borrowed on term loans from a consortium of commercial banks/public financial institutions headed by the Industrial Development Bank of India.

The essential features of the Rehabilitation Programme are :—

- (a) Improvement of raw material handling facilities particularly in relation to coal and iron ore;
- (b) Emergency and hot repairs of No. 7, 8 & 9 coke oven Batteries and re-building of No. 7 battery;
- (c) Building of a new Ladle House for Blast Furnaces;
- (d) Repairs of open Hearth Furnaces and converters;
- (e) Augmentation of steam generation capacity and thus of power generation;
- (f) Rehabilitation of handling equipment like cranes and ground chargers;
- (g) Modernising and fully rehabilitating rolling stock; and
- (h) Providing facilities for oil firing.

Up to the end of December, 1975 a total expenditure of Rs. 31.06 crores had been incurred and the total value of orders placed amounted to Rs. 38.9 crores. Upto December, 1975, the overall progress in the implementation of the scheme was 68%.

The important activities completed during the year were Hot Repairs to No. 8 & 9 Coke Oven Batteries, New Ladle House, Central Oil Farm and several new additions to Locos, rolling stock and mobile plant and Equipment. It is expected that all major activities under the scheme would be completed by the end of 1976 with the exception of new boiler plant which is expected to be completed by the middle of 1977.

Due mainly to the escalation in price since the Oil crisis, the cost of the Project has gone up to Rs. 55 crores against the original estimate of Rs. 43 crores in 1973.

Apart from the Plant Rehabilitation Scheme the following two major Projects have been taken up for implementation at the Burnpur Steel Plant and the progress made in this regard is as under :—

- (a) *Re-building of No. 1 Blast Furnace.*—The No. 1 Blast Furnace which was brought in operation in January, 1973 after its last relining was blown out in October, 1974 due to the unsafe condition of the furnace structure. The site work in dismantling the furnace has been in hand and the target date of completion of the re-building work is October, 1976.
- (b) *Renovation of E.O.T. Cranes in the rolling mill complex.*—It had become necessary to re-condition 30 numbers of E.O.T. cranes in the rolling mills complex. Initially the first group of 12 cranes has been taken up. Erection of the first reconditioned crane has since been completed and the remaining 11 cranes will be reconditioned by January, 1977.

#### Production :

The actual production in the Steel Plant during the past few years has been as under :

Year	(in '000 tonnes)	
	Steel Ingots	Saleable Steel
	431	347
1972-73 . . . . .	439.	358
1973-74 . . . . .	532	415
1974-75 . . . . .	451	363
1975-76 . . . . .		
(upto December, '75)		

The production during the first two quarters of 1974-75 was low due to restricted supply of raw materials on account of Rail-way men's strike and also due to break-down in Blast Furnace No. 3. However, it picked up for the third quarter after the recommissioning of Blast Furnace No. 3.

During 1975-76 the targets of production are 6,30,000 tonnes of ingot steel and 5,00,000 tonnes of saleable steel. The production of ingot steel and saleable steel during the period from April to October, 1975 has been 93% and 97% of the targets respectively.

#### Exports

There was no export during 1974-75. However, during 1975-76 steel materials are being exported to Bangla Desh,

African countries and Middle East. The Company have committed for export of 68,000 metric tonnes of steel.

#### Working results

After charging depreciation of Rs. 517 lakhs, the profit for the year 1974-75 amounted to Rs. 105 lakhs as compared to the loss of Rs. 368 lakhs of the previous year. The better performance was mainly due to higher production and despatches of saleable steel, increase in output from company's collieries and ore mines, etc.

#### MYSORE IRON AND STEEL LIMITED

The Mysore Iron and Steel Works, which was started in 1923 with a small Blast Furnace to produce about 24,500 tonnes of pig iron annually, was expanded from time to time and is now one of the main producers of alloy and special steels in the country. In addition, it also manufactures Ferro Silicon, Cement, Castings etc.

Mysore Iron and Steel Limited was incorporated under the Indian Companies Act, 1956 on the 30th June, 1961 and it commenced business on the 1st April, 1962. It is a joint undertaking of the Government of Karnataka and the Government of India (through the Steel Authority of India Limited). Of the paid-up capital of Rs. 33 crores of the Company as on 31-3-75, Rs. 19.8 crores (60%) was held by the Government of Karnataka and the balance of Rs. 13.2 crores (40%) was held by the Government of India through the Steel Authority of India Limited.

The present installed capacity of the Plant is as under :—

	(tonnes)
Steel Sections (Mild Steel)	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
Cast Iron Railway Sleepers	15,000
Fire Clay Refractory Bricks	9,600

The actual production during 1974-75 and 1975-76 upto the end of December, 1975 and the targets for the year 1976-77 are

as under :—

Product	(in tonnes)		
	Actual 1974-75	Production 1975-76 (upto 31-12-75)	Targets for 1976-77
Mild Steel	44,360	26,683	43,000
Special Steel	50,078	34,958	65,000
Steel Ingots	1,31,056	1,05,414	1,63,700
Ferro Silicon	11,320	14,271	15,000
Ferro Alloys	2,333	2,333	2,860
Slag Cement	99,705	68,220	1,00,000
Pig Iron	1,24,542	91,717	1,08,000
Steel Castings	2,044	1,136	2,000
Cast Iron Spun Pipes	7,710	5,957	10,000
Grey Iron Castings	12,411	7,267	9,500
Cast Iron Plate sleepers			
Refractories	9,308	7,557	10,000
Structures	1,936	1,533	2,200
Calcium Carbide (New Product)	79		
Low Carbon Ferro Manganese	4		200
Terro Titanium	3	8	30

The production during 1974-75 was affected on account of power cut ranging from 20 to 60%. The power restrictions were taken on the pig iron and ferro silicon furnaces. The power cut continues during 1975-76.

The working results of the Company showed a substantial improvements during 1974-75 as compared to the previous year. The Company made a profit of Rs. 307.60 lakhs during the year 1974-75 as compared to the profit of Rs. 200.36 lakhs during the year 1973-74.

The Company's scheme for the installation of a Forge Plant at a capital cost of Rs. 13.45 crores was approved during the year. The scheme is to be financed from internal resources and loans from the financial institutions and further equity investment by the Government of Karnataka (Rs. 3.87 crores) and the Government of India (Rs. 2.58 crores). The foreign exchange component of the scheme is being met by a project loan from West Germany. Work on the scheme has commenced. The scheme is expected to be completed in 1977-78. The scheme would process 13,300 tonnes of steel ingots to yield 5,350 tonnes of finished forge products and 2,900 tonnes of semis to be rolled into 2,230 tonnes of finished rolled products.

The Company is also planning the establishment of a wire rod mill as a 5th Plan scheme. A feasibility study has been done by Metallurgical and Engineering Consultants (India) Ltd. and is under consideration.

## STEEL INDUSTRY IN THE PRIVATE SECTOR TATA IRON AND STEEL COMPANY LIMITED

The Tata Iron and Steel Company Limited own, in addition to the integrated steel plant at Jamshedpur, captive collieries at Sijua and Jamadoba and an Iron Ore mine at Noamandi. The Steel Plant at Jamshedpur is the oldest integrated steel plant in the country. The installed capacity of the plant is 2 million tonnes of steel ingots per annum equivalent to 1.5 million tonnes of saleable steel. The capacity was achieved as a result of introduction of modernisation and expansion programmes which were aided 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.

### Production

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

	Steel Ingots	Saleable Steel
	(Figures in million tonnes)	
	2.000	1.500
	1.690	1.458
Capacity	1.514	1.200
1972-73	1.722	1.461
1973-74	1.300	1.088
1974-75		
1975-76 (upto December. 75)		

### Exports

The Company is making all out efforts to secure exports orders. During the period from April to December, 1975, orders for export of 108,300 tonnes of steel were secured. Total despatches for export amounted to 50,300 tonnes.

### Important Capital Schemes

As the plant of the Company is old, it is necessary to undertake a continuous programme for replacement repairs and modernisation in the plant in order to maintain its rated capacity. In April, 1975 the Board of Directors of the Company sanctioned a capital expenditure programme amounting to Rs. 155 crores in the five year period from 1975-76 to 1979-80. The progress in



respect of some of the important projects is as under :—

(i) *Coke Oven re-building Programme*

TISCO have drawn up a phased programme of re-building the coke oven batteries. Under the programme a new battery of 54 coke ovens was commissioned in March, 1973. The rebuilt coke oven battery No. 3 has gone into operation from September, 1975. Coke oven battery No. 1 which is being rebuilt is expected to start production from August, 1976. Coke oven battery No. 2 is currently being dismantled and is expected to be rebuilt within two years.

(ii) *Colliery expansion Project*

Fines washing facilities to improve the quality of coal have been completed. At West Bokaro, an interim quarry for the production of an additional 60,000 tonnes of coal has gone into operation and fines washing facilities have been installed. Equipment for the main quarry is being progressively received. It is proposed to expand West Bokaro colliery from 0.4 million tonnes to 1.0 million tonnes of washed coal per annum, enabling the Company to increase its own coking coal supplies to 2.2 million tonnes per annum. On the completion of this scheme TISCO will be dependent on outside sources only for blendable coal, for which it does not possess any reserves. It was originally proposed to increase the capacity to 2.8 million tonnes of washed coal per year. This was on the assumption that blendable coal might not be available and that with increased use of pallets, the Blast Furnace output could be increased to 2.15 million tonnes. In view of Government's decision that 10% of the coal fed into the coke ovens should consist of blendable coal, and the possibility of blendable coal being available in the country and no expansion in the Blast Furnace output being envisaged in the near future, TISCO have decided to enhance the expansion to 2.2 million tonnes of coal per annum only. This will also bring down the capital cost of the project from about Rs. 80 crores to about Rs. 40 crores.

*Electric Arc Furnace Units*

Electric arc furnace units for the production of mild steel or alloy and special steel ingots/billets either by the conventional method or by continuous casting process are popularly referred to as 'Mini Steel Plants'. These units use ferrous scrap as the principal raw material and manufacture predominantly mild steel ingots/billets.

Until a few years ago, electric furnaces catered mainly to the demand of the foundries. However, with the recurrence of steel shortage and industrial pick-up in 1969-70, resulting in an increase in the demand for steel, particularly for the re-rolling and engineering industries, electric arc furnaces assumed an important role in steel making. One of the measures taken by Government to augment steel production for meeting the domestic demand was to allow the setting up of small and medium sized electric furnaces for conversion of scrap which, till then, was being exported. These units were encouraged, particularly on consideration such as smaller investment, shorter period of gestation, indigenous availability of equipment and amenability to regional dispersal.

In the past, a number of schemes were approved either for the production of alloy and special steels or for the production of steel ingots by re-rollers for their own consumption. On December 13, 1966, the setting up of electric furnaces for melting scrap was delicensed. This position continued till February, 1970. This was, however, a period of industrial recession and comparatively easy availability of steel. As such, not many parties availed themselves of the facility to set up such units during the period.

On February 19, 1970, the setting up of electric furnaces was again brought within the purview of industrial licensing. Although the new policy brought back the electric furnace industry within the fold of licensing, units not connected with larger industrial houses, foreign companies and dominant undertakings were nevertheless free to come up without any licence under the Industries (Development and Regulation) Act, 1951, provided their fixed assets did not exceed Rs. 100 lakhs, no import of equipment was involved and production of mild steel only was contemplated. Such units were required only to register themselves with the Iron and Steel Controller. This policy remained in force till October 31, 1973. Up to that date, 88 parties were registered by Iron and Steel Controller.

Keeping in view the growing shortage of ferrous scrap, as well as the critical power supply position in certain States, it was considered that unless some check was exercised on the growth of units with investment upto Rs. 1 crore, it might lead to serious difficulties in regard to vital inputs, such as ferrous scrap and power and certain items such as refractories and graphite electrodes. In this background on October 31, 1973, Government decided to exclude the electric arc furnace units from the Liberalised Industrial Licensing Policy and after that date, no electric arc furnace can be set up without an

industrial licence. Creation of additional capacity in this sphere was also to be on a selective basis. However, parties who had taken effective steps before October 31, 1973, were required to apply for COB (Carry On Business) licences for being considered on merits.

As on the 31st December, 1975, 202 Units have been permitted with an aggregate annual capacity of about 4.3 million tonnes. The total liquid metal production from the electric furnaces has remained at about 1 million tonnes during the last 3 years.

Till about a year ago, the two main problems facing the Electric Arc Furnace industry were the low availability of power and shortage of scrap. With the overall improvement in the power supply situation in the country, this is no longer a major problem for this industry. This Department had also specifically requested the Department of Energy to address the State Governments concerned to ensure adequate supply of power for this industry. As regards scrap, it is now available easily, though primarily because of the poor off-take of scrap by some of the mini-steel plants themselves, who are operating much below their capacity for other reasons, mainly, the fall in demand and their inability to complete with the products of the integrated steel plants. This also called for correction of imbalance between supply and demand to the extent possible. By way of affording relief to the industry, the following measures have been taken by Government :—

- (i) As far back as May, 1974, a Notification was issued allowing such of the units as were interested to diversify their production to cover specified categories of low alloy steels;
- (ii) More recently, requests from Mini Steel Plants for diversification into production of castings are also being considered sympathetically, subject to certain conditions;
- (iii) Persistent efforts are also being made to step up the export of steel and in spite of the recessionary trends in the international market, SAIL International has been able to book orders for export of over 1 million tonnes. HSL have also decided to offer rebates in the price of billets supplied to re-rollers against export orders. It is expected that with the siphoning of such quantities for exports from the overall availability in the country, the market situation within the country for those products would improve.

- (iv) Govt. have also announced certain relaxations in the restrictions which had been imposed on building construction activities and consequently, the demand for bars and rods (which are the main products from out of the ingots/billets produced by mini steel plants) is already registering an increase. It is hoped that this trend would continue.

- (v) The industry had also been pressing for abolition of excise duty on the production of the mini steel plants. This request was referred to the Bureau of Industrial Costs and Prices and their report has been examined in consultation with the Ministry of Finance. As a result, Government have already agreed to reduce the excise duty on steel ingots produced by mini steel plants from the earlier level of Rs. 200/- per tonne to Rs. 50/- per tonne.

Recognising that the Electric Arc Furnace Industry requires an indepth study to enable an identification of their problems to which the entrepreneurs engaged in the industry must find practical solutions, Government have commissioned in January, 1976 a detailed study of the problems by two professional consultants engineers namely M/s. Metallurgical & Engineering Consultants of India Ltd. and M/s. M. N. Dastur & Company Limited to undertake the necessary investigation and study. Each of the two agencies will cover units in the geographical zone allotted to them so as to expedite the work.

In order to coordinate the studies of the two consulting engineers to present to government a composite report on the findings of the two agencies, Government have also set up a Committee consisting of representatives of the Department of Steel, Steel Authority of India Limited, Metallurgical and Engineering Consultants India Ltd. and M/s. M. N. Dastur & Company Limited. The reports of the consultants and the recommendations of the Committee are expected to be submitted by November, 1976.

The production of electric furnace units during April-November, 1975 was as under :—

	(in '000 tonnes)
(i) Mild Steel Ingot	252.4
(ii) Alloy Steel Ingot	206.5
Total Ingot	458.9

### Re-Rolling Industry

The role of steel re-rolling mills is complementary to that of large integrated steel works in as much as these further roll steel into bars, rods, wire rods, twisted deformed bars, light sections and other profiles to satisfy a very wide range of consumer demand.

From its small beginning around 1928, as a salvaging industry, the re-rolling industry has registered a phenomenal growth. It now provides employment to nearly 75,000 persons and accounts for an investment of more than Rs. 80 crores.

The last comprehensive study of the re-rolling industry was made by the Technical Committee on Re-assessment of Re-rolling capacity. In its Report, submitted in July, 1966, the Technical Committee had assessed the capacity of billet re-rollers at 2.78 million tonnes, of scrap re-rollers at 0.73 million tonnes and other (unassisted) Units at 1.20 million tonnes on double-shift basis.

As these mills are being fabricated by several local manufacturers, in the last few years, a number of re-rolling mills were set up in different parts of the country, both under the Small Scale Sector as well as the provisions of the Liberalised Industrial Licensing Policy, introduced in February, 1970, which removed restrictions on the setting up of units within an investment upto Rs. 1 crore, provided the plan and machinery were procured from indigenous sources and certain other conditions were fulfilled.

The Technical Committee had pointed out in 1966 itself that the capacity of the re-rollers was far in excess of the raw materials available resulting in considerable under-utilisation of capacity in the re-rolling industry. Further proliferation of new units, as a result of the relaxations mentioned earlier, threatened to cut deeper into an already meagre availability of raw materials even for the existing units. In order to check this, with effect from the 31st October, 1973, the re-rolling industry was also excluded from the purview of the Liberalised Industrial Licensing Policy and setting up of new units is not being encouraged. However, the applications of parties who had set up such units or taken effective steps before the 31st October, 1973, towards implementation of the schemes are being considered on merits for issue of COB (Carrying on Business) licences.

Earlier the Billet Re-rollers Committee used to control planning, distribution and pricing of the finished products of the billet re-rollers. With greater availability of Billets the restrictions on BRC are removed.

As regards other re-rollers, under the earlier procedure, the units borne on the approved lists of various State Directorates of Industries used to receive two-thirds of the re-rollable scrap arising from the Integrated Steel Plants and the balance one-third was distributed among the other non-billet Re-rollers who are members of Steel Re-rolling Mills Association. With the easy availability of scrap as well as billets at present, the re-rollers are in a position to get their full requirements.

The production of Billet Re-rollers during April-November, 1975 was as under :—

	(in '000 tonnes)
(i) Lt./Med. Structurals . . . . .	18.7
(ii) Bars . . . . .	194.1
(iii) Rods . . . . .	144.7
(iv) Hoops . . . . .	4.2
(v) Spl. Section . . . . .	22.9
Total . . . . .	384.6

### Steel making through Side-blown Converter Process

In May, 1975, Government decided to allow private sector units in the field of production of steel by conversion of Pig Iron by the process known as "Side-Blown Converter Process", developed by the National Metallurgical Laboratory, Jamshedpur. The main advantages of this process are :

- (i) Low capital investment
- (ii) Usage of pig iron in place of scrap, the availability of which is uncertain
- (iii) Requirement of power is less, as compared with electric furnace units
- (iv) It is labour-intensive
- (v) Requisite equipment are available indigenously.

Initially, the licensing will be confined to the three units, which have already got the permission for the exploitation of the process from the National Research Development Corporation, for a capacity of 10,000 tonnes per annum each. Depending upon the performance of these three units the question of licensing further capacity would be considered. It is also proposed to licence a Unit in the public sector, using this process.

### Pig Iron and Sponge Iron

No new capacity for pig iron has been sanctioned during 1975-76 so far.

The Working Group on Ferrous Scrap, which was constituted to assess the present as well as the projected availability of scrap in the country, had in its report submitted in November, 1971, estimated the availability of melting charge for electric furnaces by 1975-76 at 2.18 million tonnes. As already mentioned, the aggregate annual capacity for electric arc furnace units is likely to be about 4.3 million tonnes, when all the licensed units commence production.

In the context of the inadequate availability of ferrous scrap, the development of an alternative feed stock assumes particular significance. There is at present intense world-wide interest in methods of steel making that seek to by-pass the traditional BF/LD route of the integrated steel works. The core of these new schemes in the long run, is expected to be the sponge iron which is produced by reducing iron ores with the help of non-coking coal without using blast furnaces. Both iron ore and non-coking coals are available in abundance in the country.

The importance of sponge iron technology was realised in India quite a few years ago, and a few organisations/institutions carried out considerable development work on sponge iron making in laboratories and pilot plant scale using different iron ores, non-coking coals etc. available in the country. Experiments have already been conducted by the National Metallurgical Laboratory, Jamshedpur, using solid reductants and the results are encouraging.

Six State Industrial Undertakings have been given Letters of Intent/Licences for production of sponge iron aggregating to a capacity of 7,40,000 tonnes. Of these, the scheme of the Andhra Pradesh Industrial Development Corporation for the production of 30,000 tonnes of sponge iron per annum, based on non-coking coal as solid reductant, is being implemented with assistance under the United Nations Development Programme. SAIL has in principle agreed to participate. A global tender for the plant and machinery was issued and bids have been received by UNIDO. A Chief Technical Adviser is stationed at Hyderabad to render necessary advice and assistance. The unit is expected to commence operation in 1977 and would primarily operate as a Demonstration Plant. The Gujarat Industrial Investment Corporation has also initiated preliminary work on testing of samples, etc., and contemplates use of natural gas as reductant. No significant progress by the others has been reported.

### Wire Drawing Industry

Over the past few years, the wire drawing industry in the country has steadily developed both in terms of the number of units as well as in regard to production of finer and sophisticated types of wires.

There are 15 comparatively large units engaged in the manufacture of different types of steel wires. Besides, there are a number of smaller units, 400 of them in the small scale sector, which manufacture thicker wires, predominantly of mild steel.

The setting up of wire drawing units was also permissible in terms of the relaxations announced under the Liberalised Industrial Licensing Policy in force from the 19th February, 1970, upto the 31st October, 1973 after which this industry was brought under the licensing procedure as adequate capacity had already been created.

The estimated demand for various categories of wires, such as, mild steel, low carbon, high carbon and alloy steel wires, by 1980, is about 8,00,000 tonnes. The existing capacity and licensed capacity to be implemented is about 6,00,000 tonnes. In addition, the small scale sector is reported to have an installed capacity of roughly 8,00,000 tonnes. Actual production during 1974-75 was 2,20,000 tonnes as against 2,30,000 tonnes in 1973-74. The fall in production was due to shortage of high carbon and special quality wire rods, as also due to less availability of power.

As the capacity already created is in excess of demand, creation of new-wire-drawing capacity is not being encouraged, except for sophisticated items. Most of the requirements of such sophisticated wire are, however, expected to be met by existing units through diversification within their present licensed capacity.

The production of wire drawing units during April-November 1975 was as under :—

	(in '000 tonnes)
(i) Mild Steel	113.2
(ii) H.C./H.T.	38.8
(iii) Alloy Steel including Spring Steel	6.5
(iv) Others	4.3
Total	162.8

### Cold Rolled Strips and Box Strappings

Cold rolled steel strips find application in a wide range of industries from automobiles, by-cycles, transformers and industrial boilers to appliances like type writers, calculators, etc. The variety of requirements in size, thickness, temper, surface conditions, etc., is, therefore, quite larger.

Cold Rolling of steel strips is undertaken both in the integrated steel plants and in smaller units. The latter supplement the role of the integrated steel plants as smaller units are more amenable for rolling strips in narrower widths and thinner gauges and in a variety of tempers according to the end-use indicated above.

As against the estimated demand by 1980 of the order of 1,96,000 tonnes, the capacity already created is 2,80,000 tonnes. No further licensing of capacity for this product is, therefore, considered necessary. Accordingly, as per the decision of the Government, the Iron and Steel Controller stopped registration of the units under the Liberalised Industrial Licensing Policy from 4-6-1974. With effect from 13-11-1975, the C.R. Strips and Box Strappings industry has been taken out of the purview of Liberalised Industrial Licensing Policy and has been brought under licensing. In other words, all the industrial undertakings registered with the Iron & Steel Controller under the Liberalised Industrial Licensing Policy, for the manufacture of C.R. Strips and Box Strappings, other than those registered in the small scale sector, require "Carry-on-Business" licence.

Box strappings and baling hoops are primarily used for packing. Box strappings are cold rolled whereas baling hoops are hot rolled, but these can be mostly substituted for each other so far as the end use is concerned. The demands for these items have, therefore, to be taken together.

The total demand for both box strappings and baling hoops by 1978-79 is estimated at 67,200 tonnes for which a capacity utilisation of capacity. Thus the demand is expected to be adequately met by the existing units and no further capacity needs to be created.

The production of strips during April-November, 1975 was as under :—

	(in '000 tonnes)	
(i) C.R. Strips	85.3	(Including 52.8 produced by Rourkela Steel Plant)
(ii) Hoops	1.0	
(iii) Box Strapping	2.2	

### Ferro Alloys

Ferro Alloys are essential alloying ingredients for the production of alloys and special steels. The demand for various ferro-alloys is, therefore, closely linked with the programme of production of steel and particularly with the pace of growth in the alloy and special steels sector. The position regarding their demand and availability is reviewed from time to time and there is no immediate need for creating fresh capacity for the principal ferrow-alloys like ferro Manganese, Ferro-Silicon, Ferro Silico-chrome, Ferro Molybdenum, Ferro Tungsten, Ferro titanium and Ferro vanadium as the capacity already created/planned is adequate for the current requirements. If the schemes under implementation materialise, it should be possible to meet the requirements even at the end of the Fifth Plan.

Meanwhile, the scheme of the Steel Authority of India Ltd. for setting up a Ferro-Vanadium Plant at Rairangpur in Orissa for the production of 480 tonnes per annum of Ferro-Vanadium is under consideration of the Governments.

During 1974-75, the production of Ferro-Manganese has been about 1,46,000 tonnes which is about the same as 1973-74. production of Ferro-chrome from about 10,500 tonnes in 1973-74 to about 8,000 tonnes over the 1973-74 level of about 30,000 tonnes. There has similarly been a slight increase in the production of Ferro-chrome from about 10,500 tonnes in 1973-74 to about 12,000 tonnes in 1974-75. However, the total production of Ferro Alloys remained more or less pegged at the same level, the increase of 2,000 tonnes from 1,91,000 tonnes in 1973-74 to 1,93,000 in 1974-75 being nominal.

The production of Ferro Alloys during April-November, 1975 was as under :—

	(in tonnes)
(i) Ferro-Manganese	93,381
(ii) Ferro-Silicon	26,340
(iii) Ferro-Molybdenum	126
(iv) Ferro-Chrome	7,864
(v) Ferro-Tungsten	80
(vi) Ferro-Vanadium	28
(vii) Ferro-Titanium	30
(viii) Silico-Manganese	3,013
(ix) Others	2,578
Total	1,33,390

### Tin Plate

The Tinplate Company of India, which is the largest producer of tinplate in the private sector, is implementing a scheme for substantial expansion of its capacity from 70,000 tonnes at present to 1,60,000 tonnes per annum. The additional capacity will be in the form of electrolytic tinplate as well as in tin-free steel. The import of plant and machinery as well as the foreign collaboration proposals for the scheme have been cleared and shipments are reported to have started. It is expected that its implementation will result in significant import-substitution both in regard to tin-plate and tin.

The production of tinplate during April-November, 1975 was 70,700 tonnes (including 25,200 tonnes produced by the Rourkela Steel Plant).

### RAW MATERIALS

#### Iron Ore

According to the Planning Group on iron ore for the 5th Plan, the total reserves of iron ore in the country were estimated as 10,536 million tonnes including 8,621 million tonnes of haematite ore. However, according to the estimates of the Iron Ore Board, the reserves of haematite ore alone are now placed at about 10,000 million tonnes, and the known reserves of banded magnetite quartzite ores at about 2,150 million tonnes. The figure relating to reserves of haematite ore has been revised upward despite the depletion of 35 million tonnes per year since the publication of the estimates by the aforesaid Planning Group. The investigation work sponsored by the Iron Ore Board has revealed a reserve of 1,500 million tonnes of haematite ore in the Chiria deposit of Bihar as against the earlier estimate of 200 million tonnes. Resource-wise India ranks seventh and production-wise ninth, among the iron ore producing countries in the world.

The production of iron ore in India is organised broadly in three types of mines :—

- (i) Captive mines owned and operated by the individual steel plants, mainly for their own use;
- (ii) Public Sector mechanised mines owned and operated by the National Mineral Development Corporation (a subsidiary of the Steel Authority of India Limited) and by the State Government undertakings for exports and for internal use in steel mills; and
- (iii) Smaller mines owned and operated by private parties and based mainly on manual or semi-mechanised methods of mining.

The production of iron ore during 1974-75 as compared to the production in the previous year and the projected level in 1978-79 i.e. at the end of the 5th Plan is indicated below :

	Actual in the years		Projected in 1978-79
	1973-74	1974-75	
Production of iron ore for :			
1. Internal consumption	12.3	13.7	23.0
2. Exports to other countries	24.4	22.4	35.0
Total	36.7	36.1	58.0

Some of the significant developments affecting iron ore production in India during the last few years were :

1. Increasing use of fines for sintering by both Indian and foreign steel plants;
2. Increasing use of pellets instead of lump ore in the export market; and
3. Large scale plans for installation of direct reduction sponge iron plants, requiring pellets, in countries in West Asia.

### **Iron Ore Board**

The Iron Ore Board has been functioning since 1973 as an autonomous and advisory body for the purpose of planning, development, regulation and conservation of iron ore resources in the country. The main objectives of the Board are :—

- (a) To act as an advisory body in respect of planning and development on all aspects of the development of iron ore deposits in the country;
- (b) To ensure proper regulation, conservation and development of iron ore resources;
- (c) To advise on such steps as may be necessary to promote export of iron ore consistent with resources and indigenous requirements of the iron and steel Industry;
- (d) To promote economic utilisation of iron ore resources inclusive of pelletisation of fines, blue dust, and of lower grades of iron ore;
- (e) To ensure the coordination of infrastructure facilities for iron ore production and its utilisation in consultation with agencies like railways, ports, State Government export organisations and financing institutions;
- (f) To promote equitable distribution of iron ore cargo for shipment from different ports in the interest of port economy and of employment; and
- (g) To study the requirements of research and development for the iron ore sector as a whole.

While 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 been functioning with a part-time chairman and a part-time Member-Secretary.

The expenditure on the Board is met through grants by the Government of India. During 1974-75, Rs. 17.65 lakhs were released as grant to the Board. During 1975-76, the original budget provision was Rs. 24.25 lakhs and this has been increased to Rs. 46.69 lakhs in revised budget estimates. Out of this, Rs. 7.25 lakhs is towards expenditure on establishment and the remaining amount is for the various schemes/studies undertaken by the Board.

The major activities of the Iron Ore Board during the year related to :—

- (i) Finalisation of the report of the Bellary-Hospet Committee to draw up an integrated development plan for the iron ore deposits in that area.
- (ii) Exploration of the Chiria deposits in Bihar through the Mineral Exploration Corporation. The preliminary results of these investigations have indicated deposits of about 1,600 million tonnes against the earlier estimates of 200 million tonnes.
- (iii) Further exploration and drilling in the Chiria deposits under phase II of the exploration programme.
- (iv) Preparation of regional geological maps of Iron Ore areas by the Geological Survey of India.
- (v) Compilation of status reports on the Iron ore deposits in Goa, Madhya Pradesh and Maharashtra.
- (vi) Institution of a study by the Indian Bureau of Mines of the low grade and blendable ores at present being dumped as reject material or left unextracted in the mines themselves.
- (vii) The Board has sponsored a study by MECON to examine the relative merits of using agglomerated ores.
- (viii) The Board has constituted a technical group to undertake a system study to suggest the optimum spread and distribution of production for purposes of export from the various iron ore fields in the country.
- (ix) The Board has set up a Committee to study the testing facilities available in the country and the need for further augmentation of testing facilities.



Proposals are also under consideration for levy of a cess/development charge to make available funds required for financing the activities of the Board.

#### Joint Sector Pelletisation Plant in Goa

An important step in the development of the iron ore resources of the country during the year was the agreement reached between the Government of India and M/s. Chowgule & Co. (P) Limited regarding the formation of a new Company, viz., M/s. Chowgule Metal Industries Ltd., now renamed as Mandowli Pellets Ltd. in the joint sector for the setting up of a pelletisation plant in Goa with a capacity of 1.8 million tonnes. The share capital of the Company will be Rs. 9.65 crores (equity Rs. 7.65 crores and preference Rs. 2 crores). The pattern of share holding in the equity capital will be as under :

(a) Steel Authority of India Ltd.	33½%
(b) Chowgule and Company (P) Ltd.,	33½%
(c) Public Subscription	33½%

The plant is expected to produce 1.8 million tonnes of pellets per year and the Company has entered into a 10 year contract with Japanese Steel Mills for export of the entire production.

Efforts are also being made to set up additional pelletisation plants in other parts of the country e.g. Goa, Bailadila and Donimalai.

#### Manganese

According to the Planning Group on Manganese Ore the total estimated *in situ* reserves of manganese ore are 985.6 lakhs tonnes. The *in situ* reserves of high grade ore are 513 lakhs tonnes. In view of the need for conservation of manganese ore resources for indigenous use a ban was imposed on export of high grade manganese ore and appropriate ceilings were imposed on exports of low grades in December, 1972. The export policy for manganese ore is however under review.

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

Year	(in lakh tonnes)	
	Production	Exports
1972	16.43	8.61
1973	14.89	6.92
1974	15.02	10.35

Manganese Ore (India) Ltd. is the largest joint sector undertaking engaged in the mining of manganese ore. The Company was established in 1962 at the time of taking over 8 out of the 9 leases held by the Central Provinces Manganese Ore Co. Ltd., a foreign company based in London. The pattern of shareholding in MOIL at present is indicated below :

Steel Authority of India Ltd.	17%
Government of Madhya Pradesh	17%
Government of Maharashtra	17%
M/s. C.P.M.O. (Central Provinces Manganese Ore)	49%

The performance of Manganese Ore (India) Limited had been satisfactory until 1968. From that year onward, the financial position of the Company started deteriorating due to the slackening of the world market for manganese ore. The failure of the steel industry to achieve the targets for steel production during the 4th Plan period also affected the off-take of manganese ore. The figures of production and stock of manganese ore held by the company during the last three years were as under :—

Year	(in lakh tonnes)		
	Production	Closing	Stock
1972-73	3.36	2.42 as on	31-3-73
1973-74	2.98	3.00 as on	31-3-74
1974-75	3.05	2.53 as on	31-3-75
1975-76 (upto 30-11-75)	1.97	2.04 as on	30-11-75

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

	(Rs.)	
	Profit/Loss (+)	(-)
1972-73	(-)	40,48,631
1973-74	(-)	49,76,130
1974-75	(+)	8,21,487



The financial and operational problems of MOIL were recently studied in detail by a Committee consisting of 3 members of Parliament. As a result of concerted measures taken by the Department, the financial position of the Company has shown marked improvement during 1974-75 and in the current financial year. After incurring heavy losses in the previous two years, the Company made a small profit in 1974-75 and is expected to make profit during the current year also. Among the important measures taken were :—

- (i) higher prices for MOIL's supplies to the ferro-producers and to MMTC for exports;
- (ii) stepped-up despatches of MOIL ore arranged in consultation with the Ministry of Railways;
- (iii) increased off-take arranged with the ferro-producers and the Bhilai Steel Plant;
- (iv) cash advances from MMTC and Bhilai Steel Plant, against rail head stocks in order to reduce interest liability on commercial loans; and
- (v) the Company's overdraft of Rs. 2.47 crores as on 31-10-74 was brought down to Rs. 1.88 crores as on 25-12-75.

#### *Chromite Ore*

Chromite ore is used mainly for the production of refractories and ferro-chrome, in addition to its use in the chemical industry. In view of the limited resources of this mineral and its importance for the steel industry, certain restrictions have been imposed on the export of chromite ore, particularly of such grades as are required for use within the country. The question of optimum utilisation of all grades and qualities of chromite ore generated during the course of mining by beneficiation and pelletisation etc. is also under consideration.

#### *Transportation*

The Committee constituted under the Chairmanship of Shri G. D. Khandelwal, former Chairman of the Railway Board to make recommendations on the transport of raw materials to the Steel Plants and movement of finished products from the Steel Plants has submitted reports on all the Steel Plants assigned to it. The position about action taken on the recommendations of the

Committee is indicated below :—

	Total No.	No. Accepted	No. rejected	No. <del>under</del> under con- sideration	No. imple- mented
Short term recom- mendations .	187	139	28	48	90
Long term recom- mendations .	69	45	21	3	16

The tenure of the Committee has been extended up to the 31st March, 1976, so as to be of assistance in the follow up action on its recommendations.

## PRODUCTION, PRICES AND DISTRIBUTION

### *Production and Availability*

During the first eight months of the current year (April to November, 1975), the production of finished steel was 3.630 million tonnes as compared to 3.172 million tonnes during the corresponding period last year. This represents an increase of about 0.458 million tonnes or about 14.4 per cent.

The details of year-wise production of saleable pig iron, steel ingots, saleable steel, tool alloy and special steel and finished steel are indicated at Appendices II to VII.

### *Prices*

During the financial year 1975-76, the prices of steel materials and pig iron were revised with effect from 1-7-1975. This was necessitated by the increase in the price of coal. Prices were further revised on 8-12-1975 to take care of the increase in the Railway freight.

During the current year the specified length extra for tin bars and plates, section extras for plates and all categories of structurals were fixed by the Joint Plant Committee. The revision for extras for 'Z' piling and Centre Sill -Z- Sections, LPG Sheets and Hyten structurals and the fixation of base prices and extras for seamless bars were also done. Owing to the fall in the prices of Zinc and Copper, the Smelter and Copper extras have been reduced according to a standard formula.

As was mentioned in the last year's Annual Report the fall in market premium on all categories of steel is still being maintained.

### *Distribution*

In the last two years, a number of changes have been made in the steel distribution policy and marketing methods with the main objective of giving greater consumer satisfaction, particularly to the priority groups like Railways, Coal, Steel, Heavy Engineering and Exporters of Engineering goods etc.

The Steel Priority Committee has been constantly reviewing the availability of different categories of steel. By December, 1975 even plates and forging quality steel had been taken out of the purview of the Steel Priority Committee in view of easy availability of these items. Government have also reviewed certain

sections of the Iron & Steel (Control) Order, 1956 and have kept clauses 7 and 19 of the Order in abeyance through a Notification dated 17-12-1975. Under this, the restrictions on end-use of iron and steel and scrap have been removed.

The Joint Plant Committee had issued comprehensive guidelines to the producers which are being followed by the Units.

The scene has now changed from unrealistic allocations, large stocks with consumers and flourishing black market, to a more normal way of doing business. The customers are now buying the steel they want and at the time they want.

The number of categories which were in short supply some-time ago, has come down drastically.

SAIL and producers' marketing departments are on the look-out for categories which are in short supply and are taking remedial measures. If for some technical reasons it is not possible to roll them locally, imports are being cleared. SAIL International Limited, the canalising agency are doing the needful in consultation with the customers.

The approach is one of giving the customer what he wants, as far as possible from local production. Regular meetings are held with the customers and among producers to sort out outstanding problems.

There is no longer a shortage in most of the flat products. Plates of all thickness are available, freely. Production from Bokaro and Rourkela are mainly responsible for this welcome change.

### *Vigilance*

The Regional Iron & Steel Controllers inspect units which get steel from the regulated sources and take following four types of action as considered appropriate in relevant cases :

- (a) A unit is suspended under Clauses 11A/23A of the Iron & Steel Control Order, when there is a *prima facie* suspicion of mis-utilisation of steel.
- (b) Debarment orders are passed under Clause 28B against the units which are proved to have mis-utilized steel.
- (c) Apart from the aforesaid departmental action cases are referred to CBI/State Police where criminal prosecution is considered necessary.
- (d) Cases are also referred to the sponsoring/recommending authorities for de-registration or any other appropriate action.

On the above basis the Regional Offices carried out altogether inspections including 39 stockyards of the main producers during the months from January, 1975 to November, 1975. Appendix VIII shows the broad categories of inspections carried out on different categories of units and also the cumulative total of inspections till the end of November, 1975.

Based on such inspections and enquiries during the period under review Regional Offices suspended supplies of Iron & Steel materials under Clause 11A/23A to 570 units on the ground of misutilisation of steel and other irregularities. Altogether 27 cases were referred to CBI/State Police for further investigation and criminal prosecution. 132 cases were referred to Sponsoring Authorities for appropriate departmental action against the delinquent parties. During the aforesaid period the Regional Offices debarred 148 units under Clause 28B. Appendix IX shows the details of action thus carried out by the Regional Offices and also the cumulative total of such actions till the end of November, 1975.

As a result of organised raids and inspections carried out by the Regional Offices during the period many bogus units have been detected and these have been weeded out with the help of police and Sponsoring Authorities. Because of the enforcement efforts made by the Regional Offices coupled with the raids conducted by other Central Enforcement Agencies, the open market price has registered a fall. Easy availability of most of the categories of steel, due to improved supply position, has also contributed to the arrest of price to a great extent.

The enforcement efforts as recounted in the foregoing paras are only illustrative and not exhaustive. The cumulative effect of all these inspections, surprise raids and searches is that the speculative buying of steel has gone down considerably. The middle man's role in the steel market has been reduced to a great extent.

Recently a drive was launched by the Regional Offices against Tinplate Consumers all over the country. The units inspected and proceeded against include both DGTD and Small Scale Units. This special drive resulted in detection of large scale misutilisation of Tin Plates by the Manufacturers, Particularly in the Delhi and the Calcutta Regions.

Proclamation of National Emergency has had a significant impact on the steel market and steel consuming industry. The hoarders, black-marketeers and dubious operators are on the retreat. Emergency has been the starting point of a vigorous drive against corruption in all spheres.

## IMPORTS AND EXPORTS OF IRON AND STEEL

### I—Imports

#### Introduction

1974-75 witnessed higher import of steel compared to the previous year. Details of imports are given in Appendix X. As usual the restrictive policy to keep imports to the minimum, to match the essential needs of industry for domestic consumption as well as for export production was continued.

Most of the steel and ferro-alloys imports are canalised through public sector agencies—Hindustan Steel Limited till 31.12.74, SAIL International Ltd. from 1.1.75 and Minerals and Metals Trading Corporation Ltd. Ferrous scrap import is canalised through Metal Scrap Trade Corporation Ltd.

With the improved domestic production, activation of inventories, streamlining of distribution system it is expected that 1975-76 will be the year when Iron and Steel and ferro-alloys exports will outstrip imports resulting in a favourable balance in Iron and Steel trade.

#### Agencies for import

Import of Steel is being effected by :

- (i) actual users under the actual users policy;
- (ii) registered exporters/their nominees/export houses under the Registered Exporters Import policy; and
- (iii) canalising agencies viz. HSL (upto 31.12.74), SAIL International Ltd. (from 1.1.75), MMTC and MSTC.

#### International Supply Position

1975-76 has been a year of better international availability resulting in keen competition in the export trade among various countries. There have been reports of serious cutback in production due to a situation of glut in the international market. Prices of steel continued to show a downward trend.

#### Imports by SAIL International Ltd./HSL

SAIL International Ltd. have till the end of Nov. '75 concluded contracts for import of 146,000 tonnes of steel valued at about Rs. 40 crores. Actual arrivals during April-November '75 were 68,500 tonnes valued at Rs. 1890 lakhs. During

96  
the remaining part of 1975-76 SAIL International Ltd. anticipate actual arrivals of 55,000 tonnes valued at Rs. 1700 lakhs, HSL imports during April-Nov. '75 was 82,200 tonnes valued at Rs. 3158 lakhs. During Dec. '75-March '76 they anticipate arrivals of 18,000 tonnes valued at Rs. 630 lakhs.

#### *Imports by MMTC*

During April-Sept. '75, MMTC imported 3,712 tonnes of stainless steel and 13,954 tonnes of Semis and electrical steel.

#### *Steel Bank*

Steel Bank continues to supply the Critical requirements of steel on an 'off the shelf' basis.

#### *Metal Scrap Trade Corporation*

MSTC is the canalising agencies for import/export of ferrous scrap including re-rollable scrap in the form of old ships for breaking. During April-Nov. '75 there has been no import of ferrous scrap.

### *II—Exports*

1975-76 witnessed higher surplus availability of iron and steel for export but with the emergence of general surplus in international steel market, the competition has grown to be very keen. Though the export policy broadly categorises exportable items only on merits a ceiling has been specified for each exportable item. The canalising agency SAIL International Ltd., has been empowered to enter into export commitments limited to the ceilings. During April '75 to February, '76 total export of pig Iron and Steel by SAIL International Ltd. was 6,33,225 tonnes valued at Rs. 91.67 crores. During the period Jan.—March '76 HSL export was 1,60,700 tonnes valued at Rs. 17.97 crores.

Category-wise exports of Iron and Steel during 1974-75 and 1975-76 (April-June, '75) are given in Appendix XI.

#### *Export of Ferrous Scrap*

With the improvement in availability of ferrous scrap within the country higher quantities of scrap are being exported. The canalising agency, MSTC, is empowered to recommend export of what cannot be utilised within the country particularly in varieties covered by the policy. A close watch is maintained by MSTC on the demand and availability position.

During April-October 1975, 79,883 tonnes of Ferrous Scrap valued at Rs. 329 lakhs was exported. The anticipated export for the whole year is 1.4 lakh tonnes valued at Rs. 570 lakhs.

Category-wise export of Ferrous scrap during 1974-75 and 1975-76 (April-June '75) is given in Appendix XII.

#### *Export of Ferro-alloys*

Except ferro-manganese slag, exportable surplus in ferro-alloys is very limited. Export is canalised through SAIL International Limited. A close watch is maintained to ensure that export of ferro-alloys does not result in difficulties for the domestic users.

Export of ferro-alloys during April-Nov. '75 was 600 tonnes valued at Rs. 33 lakhs. During December, '75-March, '76 anticipated export is 9,400 tonnes valued at Rs. 277 lakhs. Category-wise export of Ferro-alloys during 1974-75 and April-June, 1975-76 is given at Appendix XIII.

1976-77 is likely to witness further reduction in imports and increase in exports.

# APPENDIX I

Production and despatches by the National Mineral Development Corporation Limited, during 1974-75 and April-December, 1975

(In '000 tonnes)

Sl. No.	Particulars	1974-75		Actual	Performance 1975-76					
		Target			Year's Target	April-Dec. , 1975				
		Original	Revised			Proportionate	Actual			
<b>I. Production</b>										
1.	Bailadila No. 14	.	.	.	5,600	3,850	3,866	6,000	4,070	3,497
2.	Kiriburu	.	.	.	1,680	1,380	1,185	2,123	1,455	1,204
3.	Panna diamond (carats)	.	.	.	18,000	18,000	20,114	18,000	12,400	13,314
<b>II. Despatches</b>										
1.	Bailadila No. 14	.	.	.	5,000	3,905	3,891	6,000	4,390	3,533
2.	Kiriburu	.	.	.	1,730	1,554	1,467	2,430	1,615	1,409
<b>III. Export/Shipment</b>										
1.	Bailadila No. 14	.	.	.	5,000	3,779	3,610	6,190	4,41	3,892
2.	Kiriburu	.	.	.	100	100	10	—	—	48

92

# APPENDIX II

## PRODUCTION OF SALEABLE PIG IRON

Year	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	(In '000 tonnes)
1968-69	1,001	810	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
1969-70	1,804	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
1970-71	1,804	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
1971-72	1,804	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
1972-73	1,804	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
1973-74	1,804	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
1974-75	1,804	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
1975-76*	1,804	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
(UP to Dec. '75)	1,804	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000

\*Provisional.

## PRODUCTION OF STEEL TONNAGE

N.B. :—ISCO's production is mainly for its own consumptions at Kulti & Burnpur works.

93

# APPENDIX I

Production and despatches by the National Mineral Development Corporation Limited, during 1974-75 and April-December, 1975

(In '000 tonnes)

Sl. No.	Particulars	1974-75		Actual	Performance 1975-76					
		Target			Year's Target	April-Dec. , 1975				
		Original	Revised			Proportionate	Actual			
I. Production										
1.	Bailadila No. 14	.	.	.	5,600	3,850	3,866	6,000	4,070	3,497
2.	Kiriburu	.	.	.	1,680	1,380	1,185	2,123	1,455	1,204
3.	Panna diamond (carats)	.	.	.	18,000	18,000	20,114	18,000	12,400	13,314
II. Despatches										
1.	Bailadila No. 14	.	.	.	5,000	3,905	3,891	6,000	4,390	3,533
2.	Kiriburu	.	.	.	1,730	1,554	1,467	2,430	1,615	1,409
III. Export/Shipments										
1.	Bailadila No. 14	.	.	.	5,000	3,779	3,610	6,190	4,41	3,892
2.	Kiriburu	.	.	.	100	100	10	—	—	48

92

\*Provisional

# APPENDIX II

PRODUCTION OF SALEABLE PIG IRON											
Year	Dept. of Steel	Bhilai	Durgapur	Rourkela	IISCO	IISCO	Total	MISL	Bokaro	Other	Grand
1952-53		1'008	118	804	554	1'500	421	2'504	(In '000 tonnes)		
1953-54		1'001	810	1'000	100	1'555	233	2'550	141	140	2'830
1954-55		1'804	810	1'081	18	1'484	715	2'603	120	100	2'823
1955-56		1'108	153	1'111	—	1'000	431	2'150	122	200	2'473
1956-57		1'021	100	853	(4)	1'108	66	2'801	133	300	3'234
1957-58		1'040	834	1'038	—	1'112	253	2'024	81	84	2'199
1958-59		1'830	818	1'104	23	1'108	1,043	2'300	130	42	2,515
1959-60		1'132	836	1'103	18	1'080	1,150	2'313	130	26	2,569
1960-61		1'150	138	854	3	1'037	985	2'111	81	28	2,357
1961-62		1'825	124	843	1	1'001	1,196	2'441	12	22	2,580
1962-63		1'351	1'075	1'002	2	1'018	1,461	2'380	10	31	2,522
1963-64		1'131	1'076	1'113	1	1'020	1,461	2'033	41	74	2,240
1964-65		1'143	130	800	1	1'053	1,234	2'834	48	56	3,127
1965-66		476	269	127	2	211	1,085	54	48	91	1,230
1966-67		(1'550)	(527)	(370)	(4)	(2)	(973)	(1)	(830)	(83)	(1,041)
1967-68		506	100	46	3	141	796	33	664	96	1,589
1968-69		506	100	46	3	141	796	33	664	96	1,589
1969-70		409	106	85	—	117	717	6	464	67	1,254
1970-71		409	106	85	—	117	717	6	464	67	1,254
1971-72		409	106	85	—	117	717	6	464	67	1,254
1972-73		409	106	85	—	117	717	6	464	67	1,254
1973-74		409	106	85	—	117	717	6	464	67	1,254
1974-75		409	106	85	—	117	717	6	464	67	1,254
1975-76*		409	106	85	—	117	717	6	464	67	1,254

\*Provisional.

# APPENDIX III

N.B. :- IISCO's production is mainly for its own consumptions at Kulti & Burnpur works.

93

APPENDIX III  
PRODUCTION OF STEEL INGOTS

(In '000 tonnes)

Year	Bokaro	Durgapur	Rourkela	Bokaro	TISCO	IISCO	Total (1-6)	MISL	Others	Grand Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1963-64	1,143	972	800	—	1,892	1,027	5,834	48	63	5,945
1964-65	1,131	1,006	979	—	1,956	950	6,022	47	69	6,138
1965-66	1,371	1,001	1,065	—	1,979	970	6,386	69	72	6,527
1966-67	1,852	754	943	—	2,001	897	6,447	75	75	6,587
1967-68	1,785	738	924	—	1,933	791	6,171	91	70	6,332
1968-69	1,735	823	1,162	—	1,816	777	6,313	120	73	6,506
1969-70	1,876	818	1,104	—	1,708	700	6,206	136	92	6,434
1970-71	1,940	634	1,038	—	1,715	627	5,954	91	94	6,139
1971-72	1,953	700	823	—	1,708	617	5,801	133	364	6,300
1972-73	2,108	723	1,177	—	1,690	431	6,129	155	696	6,980
1973-74	1,894	776	1,081	18	1,484	439	5,692	156	766	6,614
1974-75	2,001	819	1,066	109	1,722	532	6,250	141	749	7,140
1975-76*	1,608	718	904	224	1,299	451	5,204	92	583	5,879

(Upto Dec. '75)

94

\*Provisional

APPENDIX IV  
PRODUCTION OF SALEABLE STEEL BY MAIN PRODUCERS

8-1295 Dept. of Steel/75

(In '000 tonnes)

Year	Bhilai	Durgapur	Rourkela	TISCO	IISCO	Bokaro	Total
1963-64	884	731	566	1,507	810	—	4,498
1964-65	916	721	689	1,568	755	—	4,649
1965-66	1,028	684	782	1,568	723	—	4,785
1966-67	1,328	550	683	1,568	709	—	4,838
1967-68	1,252	527	640	1,534	613	—	4,566
1968-69	1,344	500	773	1,465	640	—	4,722
1969-70	1,496	494	796	1,440	568	—	4,794
1970-71	1,549	413	683	1,375	523	—	4,543
1971-72	1,568	432	598	1,387	493	—	4,478
1972-73	1,744	477	765	1,456	351	—	4,793
1973-74	1,682	374	741	1,200	360	—	4,357
1974-75	1,707	514	694	1,463	407	1	4,787
1975-76*	1,350	510	730	1,084	363	110	4,037

(Upto Dec. '75)

95

\*Provisional

**APPENDIX V**  
**PRODUCTION OF TOOL, ALLOY AND SPECIAL STEELS**

Producers	(In '000 tonnes)					
	1970-71	1971-72	1972-73	1973-74	1974-75	*1975-76 (upto Dec. '75)
1. Canara Workshops Ltd., Mysore	3,801	2,834	2,090	1,852	1,735	1,590
2. Firth Sterling Steel Co. of India Ltd., Maharashtra	921	985	944	1,839	1,870	1,087
3. Globe Steel (P) Ltd., Haryana	7,816	4,306	12,866	11,296	4,741	6,360
4. Guest Keen Williams Ltd., West Bengal	29,686	35,095	38,000	38,056	30,957	23,443
5. Alloy Steel Project, Durgapur	38,686	35,006	35,835	36,746	43,862	42,913
6. Hindustan Steel Ltd., (Bhilai & Rourkela Steel Plants)	1,13,964	94,530	83,683	53,966	65,363	61,570
7. Indian Iron & Steel Co., West Bengal	Nil	Nil	N.A.	N.A.	N.A.	N.A.
8. Lasco Steel Ltd., Madras	..	85	Nil	N.A.	N.A.	542
9. Mahindra Ugin Steel Co. Ltd., Maharashtra	28,174	32,561	28,391	26,859	27,196	14,796
10. Mysore Iron & Steel Ltd., Mysore	48,527	52,052	45,275	62,842	50,076	34,219
11. Singh Engg. Works Ltd., U.P.	467	Nil	N.A.	N.A.	N.A.	N.A.
12. Tata Iron & Steel Co. Ltd., Bihar	1,32,308	1,73,698	1,76,071	71,145	1,07,906	59,776
13. J.K. Iron & Steel Co. Ltd., Kanpur	67	78	12	N.A.	N.A.	N.A.
14. Krishna Steel Industries (P) Ltd., Bombay	Nil	Nil	Nil	N.A.	Nil	Nil
15. Mukand Iron & Steel Works Ltd., Bombay	5,241	2,939	3,848	5,808	10,178	13,534
16. The National Iron & Steel Co. Ltd., Calcutta	657	159	269	908	250	1,076
17. Textool Co. Ltd., Coimbatore	63	395	398	570	529	425
18. Himmat Steel Foundry (M.P.)	..	1,769	Nil	N.A.	N.A.	N.A.
19. Upper India Steel Punjab	..	2,043	5,169	12,919	9,597	7,079
20. Partap Steel Rolling Mills, Haryana	..	..	..	14,282	11,347	17,744
<b>Total</b>	<b>4,10,918</b>	<b>4,38,535</b>	<b>4,32,851</b>	<b>3,39,088</b>	<b>3,65,607</b>	<b>2,86,064</b>

\*Provisional.

**APPENDIX VI**  
**PRODUCTION OF FINISHED STEEL—PRODUCER-WISE**

Year	(In '000 tonnes)									
	Bhilai	Durga- pur	Rourkela	TISCO	IISCO	Total (1—5)	MISL	Bokaro	Other	Grand Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1963-64	658	374	527	1,035	652	3,246	41	..	1,009	4,296
1964-65	654	493	626	1,108	637	3,518	39	..	876	4,433
1965-66	726	511	717	1,084	623	3,661	49	..	800	4,510
1966-67	722	391	638	1,062	576	3,389	60	..	1,042	4,491
1967-68	690	342	602	1,002	451	3,087	70	..	896	4,053
1968-69	903	383	738	1,048	512	3,584	77	..	1,241	4,902
1969-70	1,134	395	758	1,002	460	3,749	40	..	1,259	5,048
1970-71	1,215	337	593	983	464	3,592	24	..	1,272	4,888
1971-72	1,030	337	561	1,002	449	3,379	44	..	1,538	4,961
1972-73	1,537	359	715	917	293	3,821	54	..	1,638	5,513
1973-74	1,372	271	741	852	328	3,564	48	..	1,277	4,889
1974-75	1,350	409	689	1,041	345	3,834	78	..	1,251	5,162
1975-76 *(upto Dec. '75)	1,065	365	634	760	265	3,089	41	2	988	4,120

\*Provisional.



**APPENDIX VII**  
**PRODUCTION OF FINISHED STEEL—CATEGORY-WISE**

(In '000 tonnes)

Category	1971-72	1972-73	1973-74	1974-75	1975-76* (upto Dec. '75)
(1)	(2)	(3)	(4)	(5)	(6)
<b>A. Mild Steel</b>					
Light & Med. Structurals	512.0	628.1	423.1	529.7	522.3
Heavy Structurals	192.9	207.1	142.9	198.1	141.6
Heavy Rails :—					
(i) 1st Class	259.7	269.2	204.0	186.5	83.9
(ii) 2nd Class	109.6	53.5	50.6	49.9	49.9
Light Rails	6.4	3.9	8.8	13.4	9.7
Black Sheet (Corr.)	0.7	0.3	..	..	..
Black Sheet (Plain)					
(i) Hot Rolled	219.1	194.1	167.9	201.3	166.2
(ii) Cold Rolled	96.1	96.2	95.4	80.7	59.5
G.P. Sheets	57.7	70.6	70.7	70.8	37.6
G.C. Sheets	108.9	92.9	89.6	81.0	71.4
Plates	274.9	310.3	276.6	301.3	275.6
Bars	1,153.8	1,391.7	1,465.2	1,492.1	1,106.5
Rods	562.8	708.6	605.2	613.1	462.1
Wires					
(i) Black	81.2	98.3	100.8	90.0	85.0
(ii) Galvd.	52.1	58.8	44.5	40.2	41.7
(iii) Others	90.9	84.2	85.2	90.2	56.4
Hoops	8.2	8.2	5.9	9.9	6.4
Strips					
(i) Hot Rolled	105.6	175.9	163.8	128.8	**
(ii) Cold Rolled	102.5	100.5	133.8	131.9	92.9
Box Strappings	5.1	3.0	3.1	3.4	2.5
Steel Sleepers	67.7	55.9	51.8	61.9	52.9
Tinplates	114.5	115.6	87.4	77.8	81.1
Skelp	232.7	244.0	194.4	246.0	355.8@
Wheels, Tyres & Axles	32.0	30.4	22.8	32.5	27.6
Special Section	75.4	79.2	56.7	66.1	29.5
<b>Total Mild Steel</b>	<b>4,522.5</b>	<b>5,080.5</b>	<b>4,550.2</b>	<b>4,796.6</b>	<b>3,814.2</b>
<b>B. Tool Alloy &amp; Special Steel</b>	<b>438.5</b>	<b>432.9</b>	<b>339.1</b>	<b>365.6</b>	<b>286.1</b>
<b>Grand Total (A+B)</b>	<b>4,961.0</b>	<b>5,513.4</b>	<b>4,889.3</b>	<b>5,162.2</b>	<b>4,100.3</b>

\*Provisional.

@Includes hot rolled strips also.

\*\*Included against skelp.

- 535/2017/710

### APPENDIX VIII

Statement showing the broad categories of inspections carried out by the Regional Offices (under the Iron & Steel Controller) during the period from January, 1975 to November, 1975 (11-months) and also the cumulative total from the inception of the Regional Offices.

Inspections of	Calcutta Region	New Delhi Region	Kanpur Region	Bombay Region	Madras Region	Hyderabad Region	Total	Cumulative total from the inception of the Regional Offices till the end of Nov. '75
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Stockyards . . . .	1	5	11	10	5	7	39	184
Billet Re-Rollers . . . .	6	3	6	1	..	5	21	285
Others . . . . .	552	628	538	284	312	308	2623	8929
	559	636	555	295	317	320	2683	9398

100

### APPENDIX IX

Statement showing suspension orders and follow-up action taken in the Regional Offices (under the Iron & Steel Controller) during the period from January, 1975 to November, 1975 (11 months) and also the cumulative total of such actions since the inception of the Regional Offices.

Nature of action	Calcutta Region	New Delhi Region	Kanpur Region	Bombay Region	Madras Region	Hyderabad Region	Total	Cumulative total from the inception of the Regional Offices till the end of November, 1975.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(a) No. of cases in which suspension orders under Clauses 11A/23A of Iron & Steel (Control) Order were issued	82	198	161	69	38	22	570	2,020
(b) No. of cases in which debarring orders under 28B of Iron & Steel (Control) Order were issued	50	25	11	20	37	5	148	268
(c) No. of cases referred to CBI/State Police	15	3	..	5	4	..	27	188
(d) No. of cases referred to Sponsoring Authority	13	42	29	6	42	..	132	473

101

## APPENDIX X

## IMPORT OF IRON AND STEEL

	1973-74	1974-75	1975-76 (April-June)
<i>A—Quantity in tonnes</i>			
1. Pig Iron, Sponge Iron, etc.	697	672	138
2. Ferro Alloys	366	1,104	196
3. Cast Iron	2,091	4,046	590
4. Mild Steel	8,48,381	9,56,873	1,37,658
5. High Carbon Steel	93,655	1,59,492	18,215
6. Alloy Steel	79,515	81,611	15,162
7. Steel Castings & Forgings	6,539	7,646	1,907
8. Iron & Steel Scrap	24,710	10,546	3,345
Total	10,55,954	12,21,990	1,77,211
<i>B—Value in Rupees lakhs</i>			
1. Pig Iron, Sponge Iron, etc.	15	19	6
2. Ferro Alloys	26	69	62
3. Cast Iron	1,87	3,48	83
4. Mild Steel	1,75,35	2,97,39	63,39
5. High Carbon Steel	20,35	49,06	7,50
6. Alloy Steel	41,73	62,88	12,09
7. Steel Castings & Forgings	6,88	7,99	2,39
8. Iron & Steel Scrap	2,90	2,14	71
Total	2,49,49	4,23,82	87,59

SOURCE :—Monthly Statistics of Foreign Trade of India issued by DGCIS,

## APPENDIX XI

## EXPORTS OF IRON AND STEEL

	1973-74	1974-75	1975-76 (April-June)
<i>A—Quantity in tonnes</i>			
1. Pig Iron, Sponge Iron, etc.	4,41,602	1,43,090	60,776
2. Ferro Alloys	31,366	34,904	..
3. Cast Iron	26,045	31,087	6,350
4. Mild Steel	1,65,743	1,90,828	45,661
5. High Carbon Steel	2,690	4,139	2,719
6. Alloy Steel	1,808	1,934	149
7. Steel Casting & Forgings	658	2,522	912
8. Iron and Steel Scrap	1,11,666	1,03,525	23,882
Total	7,81,578	5,12,079	1,40,449
<i>B—Value in Rupees lakhs</i>			
1. Pig Iron, Sponge Iron, etc.	17,28	8,48	5,25
2. Ferro Alloys	4,22	9,41	..
3. Cast Iron	3,28	6,29	1,45
4. Mild Steel	32,30	60,12	11,33
5. High Carbon Steel	60	1,01	45
6. Alloy Steel	25	52	4
7. Steel Castings & Forgings	19	1,14	62
8. Iron & Steel Scrap	2,91	6,07	60
Total	61,03	93,04	19,74

SOURCE :—Monthly Statistics of Foreign Trade of India issued by DGCIS.

**APPENDIX XII**  
**EXPORT OF IRON STEEL SCRAP**

(Quantity in tonnes and Value in Rs. lakhs)

	1973-74		1974-75		1975-76 (April-June)	
	Quantity	Value	Quantity	Value	Quantity	Value
(1)	(2)	(3)	(4)	(5)	(6)	(7)
<i>Iron and Steel Scrap for re-melting re-forging</i>						
Filling etc. . . . .	33,074	41.29	45,164	205.29	15,495	35.35
Tinplate Scraps . . . . .	..	..	13	0.04	..	..
Wornout articles . . . . .	..	..	..	..	..	..
Others . . . . .	74,810	245.13	51,183	329.70	7,729	13.92
<b>SUB TOTAL</b> . . . . .	<b>1,07,884</b>	<b>286.42</b>	<b>96,360</b>	<b>535.03</b>	<b>23,224</b>	<b>49.27</b>
<i>Iron and Steel Scrap used as Prime Varieties</i>						
Bars ends etc. . . . .	..	..	1,239	13.77	658	10.33
Sheet Cuttings (Uncoated) . . . . .	..	..	..	..	..	..
Sheet Cuttings (Coated) . . . . .	..	..	..	..	..	..
Plate Cutting (Coated) . . . . .	..	..	1	0.01	..	..
Other Remnants . . . . .	3,782	4.32	5,925	58.36	..	..
<b>SUB TOTAL</b> . . . . .	<b>3,782</b>	<b>4.32</b>	<b>7,165</b>	<b>72.14</b>	<b>658</b>	<b>10.33</b>
<b>TOTAL</b> . . . . .	<b>1,11,666</b>	<b>290.74</b>	<b>1,03,525</b>	<b>607.17</b>	<b>23,882</b>	<b>59.60</b>

SOURCE :—Derived from the monthly statistics of Foreign Trade of India issued by DGCIS.

104

**APPENDIX XIII**  
**CATEGORY-WISE EXPORT OF FERRO-ALLOYS**

(Quantity in tonnes and value in Rs. lakhs)

Category	1973-74		1974-75		1975-76 (April-June)	
	Quantity	Value	Quantity	Value	Quantity	Value
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Ferro-Manganese below 3 % carbon . . . . .	6,200	68.36	14,382	264.69	..	..
Ferro-Manganese over 3 % carbon . . . . .	20,372	240.08	14,148	265.33	..	..
Ferro Chrome . . . . .	2,819	76.81	5,378	317.29	..	..
Ferro Silicon . . . . .	1,975	36.97	996	93.78	..	..
Others . . . . .	..	..	..	..	..	..
	<b>31,336</b>	<b>422.22</b>	<b>34,904</b>	<b>941.09</b>	<b>..</b>	<b>..</b>

SOURCE :—Monthly Statistics of Foreign Trade of India issued by DGCIS.

105