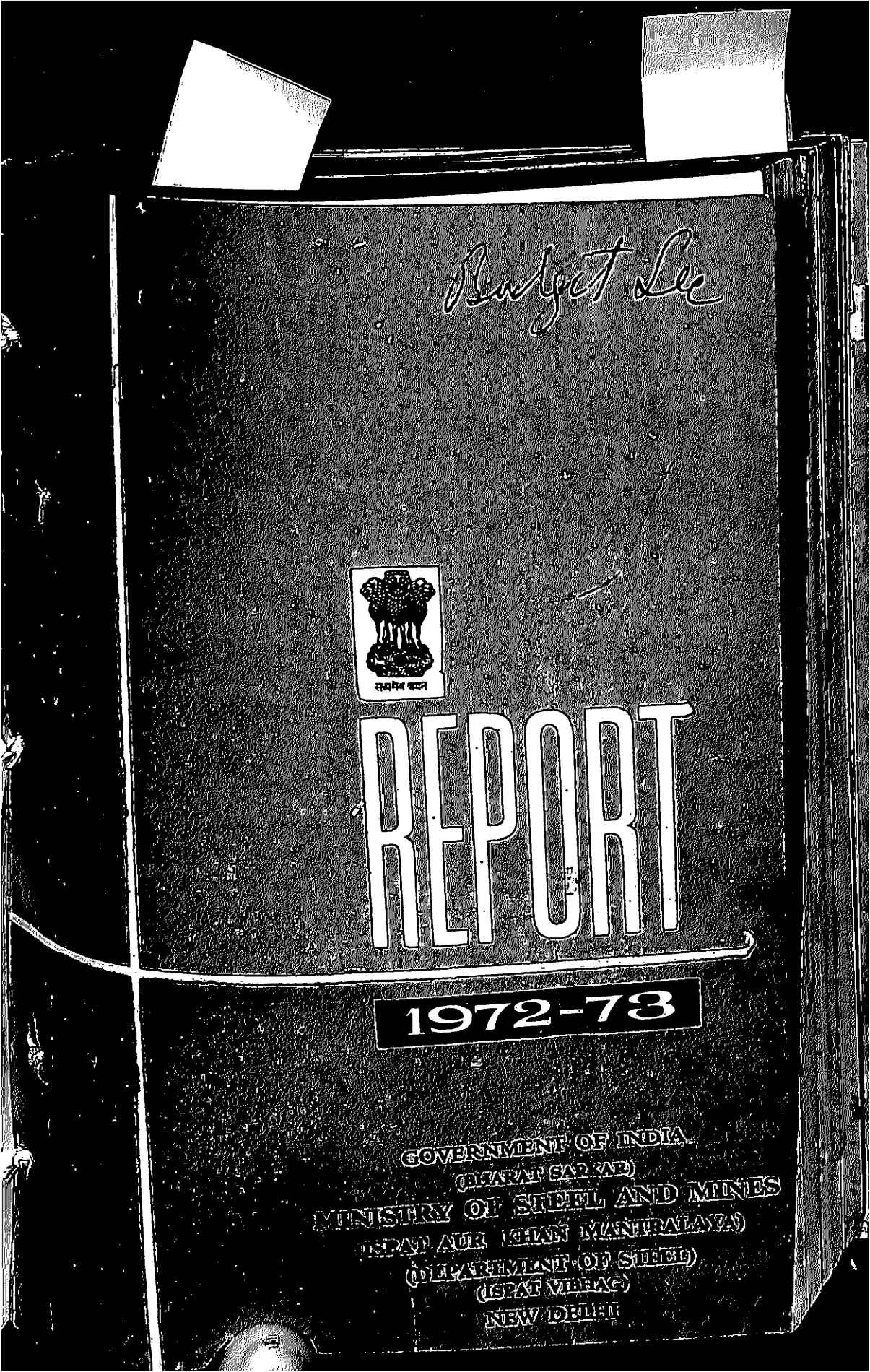
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REPORT
1972-73
GOVERNMENT OF INDIA
(BHARAT SARKAR)
MINISTRY OF STEEL AND MINES
(ISPAT AUR KHAN MANTRALAYA)
(DEPARTMENT OF STEEL)
(ISPAT VIBHAG)
NEW DELHI

REPORT
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1973

CONTENTS

APPENDICES

THE YEAR AT A GLANCE

The office of the Iron and Steel Controller, Calcutta, and the following public sector undertakings function under the administrative control of this Department :—

(i) Hindustan Steel Limited, Ranchi (Bihar).

(ii) Bokaro Steel Limited, Bokaro Steel City, Bokaro (Bihar).

(iii) Hindustan Steelworks Construction Ltd., Calcutta (West Bengal).

(iv) Metal Scrap Trade Corporation.

(v) Heavy Engineering Corporation Limited, Ranchi (Bihar).

(vi) Mining and Allied Machinery Corporation Limited, Durgapur (West Bengal).

(vii) Triveni Structurals Limited, Naini, Allahabad (U.P.).

(viii) Bharat Heavy Plate and Vessels Limited, Visakhapatnam (Andhra Pradesh).

(ix) Tungabhadra Steel Products Limited, Tungabhadra Dam (Mysore).

(x) Engineering Projects (India) Limited, New Delhi.

The Heavy Engineering Units mentioned at items (v) to (x) above, however, functioned under this Department upto 28th February, 1973 as, consequent on the further re-organisation of certain ministries in February, 1973, these have been transferred to the new Ministry of Heavy Industry (from 1st March, 1973).

Important data relating to the undertakings is given in the table on page 2.

TABLE

Unit	Year of incorp-oration	Capital expenditure upto 31-3-73	Equity Capital	Government loans as on 31-3-73	Cumulative net profit (+)/loss(—) as on 31-3-73	Cumulative depreciation	Cumulative interest on Govt. loans	No. of employees
1	2	3	4	5	6	7	8	9
Hindustan Steel Ltd.	1954	*Rs. 1251.38 crores	*Rs. 610.85 crores	Rs. 409.68 crores (approx)	(—)Rs. 223.08 crores (as on 31-12-72)†	*Rs. 618.3 crores	*Rs. 259.4 crores	1,28,586 as on 31-12-72
Hindustan Steel-works Construc-tion Ltd.	1964	Rs. 50 lakhs	Rs. 250 lakhs	(+) Rs. 151.82 lakhs	Rs. 159 lakhs upto 31-3-72			11,928††
Bokaro Steel Ltd.	1964	Rs. 754.82 crores	Rs. 600 crores	Rs. 193.46 crores	(—)Rs.* 10.70 crores	Rs. 5.11* crores	Nil (interest holiday given upto 31-3-78)	20,283 Depart-mental as on 31-12-72

*Estimated.

†Profit/loss for the year 1972-73 will be known only after the accounts for the year have been finalised.

††Departmental as on 31-1-73. Contractors' labour and staff on this date was 30,742.

TABLE—*contd.*

1	2	3	4	5	6	7	8	9
Heavy Engineering Corporation Ltd.	1958	Rs. 182.39 crores as on 31-1-73	Rs. 159.50 crores	Rs. 105.02 crores as on 1-3-73	(—)Rs. 101.19 crores	Rs. 32.38 crores as on 31-3-72	Rs. 39.82 crores as on 31-3-72	18,379 as on 31-3-72
Mining & Allied Machinery Cor-poration Limited	1965	Rs. 32.73 crores as on 1-1-73	Rs. 20.00 crores as on 1-3-73	Rs. 43.90 crores as on 1-3-73	(—)Rs. 38.98 crores	Rs. 10.84 crores as on 31-3-72	Rs. 12.23 crores as on 31-3-72	6,199 as on 31-3-72
Triveni Structurals Limited	1965	Rs. 605.24 lakhs upto 31-12-72	Rs. 153 lakhs	Rs. 126.28 lakhs	(—)Rs. 254.74 lakhs	Rs. 57.48 lakhs upto 31-12-72	Rs. 54.52 lakhs upto 31-3-72	1,979 as on 31-1-73
Bharat Heavy Plate & Vessels Limited	1966	Rs. 1912 lakhs as on 31-12-72	Rs. 1012.47 lakhs	Rs. 1245.36 lakhs	(—) Rs. 414.00 lakhs	Rs. 94.95 lakhs as on 31-3-72	Rs. 118.55 lakhs upto 31- 3-72	2,402 as on 28-2-73
Tungabhadra Steel Products Ltd.	1960	*	Rs. 51 lakhs	Rs. 40 lakhs	(—) Rs. 36 lakhs	Rs. 42.05 lakhs as on 31-3-72	Nil	1,002 as on 31-1-73

*The Company was originally started as a repair and maintenance shop in 1947 and was formed into a private Ltd. Co. in 1960 with the Govts. of Mysore and Andhra Pradesh holding a share-capital of Rs. 25 lakhs each. In February 1967 Govt. of India acquired controlling interest by investing Rs. 51 lakhs.

Some of the more important developments are given below:—

Progress in Bokaro Steel Plant

The First Blast Furnace Complex including a 2000 cu. m. Blast Furnace, a Coke Oven Battery, a Sintering Machine, 55 MW Generator, Boilers, Bye-product Plant and a Mechanised Raw Material Handling Systems was commissioned on the 3rd October, 1972. The Complex has been operating continuously since then. Up to the end of February, 1973, 240157 tonnes of pig iron have been produced. The Blast Furnace has exceeded its rated capacity of 2640 tonnes per day on several occasions, touching a maximum of 3005 tonnes on the 26th January, 1973. The First Stage of the Plant is scheduled to be completed during 1973.

The work on the Second Stage of 4 million tonnes made rapid progress during the year. Orders for nearly all the equipment, steel structures and refractories required for this expansion have been placed. The 2.5 million tonne crash programme is scheduled to be completed by March, 1974 and the entire Stage II, excluding the 5 stand Cold Rolling Mill Complex, is expected to be commissioned by March, 1977. An agreement has been signed by Bokaro Steel Limited with the Soviets for supply of equipment for the 5-stand Cold Rolling Mill and finishing lines. This Complex is expected to be completed in 1977-78.

The Refractory Plant acquired by the Government from Asian Refractories Limited commenced production in May, 1972. Up to end of February, 1973, 6,565 tonnes of fireclay bricks and 741 tonnes of mortars have been produced in this Unit.

Expansion of Bhilai Steel Plant

The detailed Project Report for further expansion of the Bhillai Steel Plant to 4 million tonnes steel ingot capacity is expected to be ready by the middle of 1973. Preliminary work in respect of this expansion has commenced.

The feasibility of further expansion of the Plant to a capacity of about 7 million tonnes capacity in also being examined.

Progress of production at the plants of Hindustan Steel Ltd.

There has been an all-round improvement in production from all the units of the Hindustan Steel Limited during the year under review. The aggregate production from the three integrated steel plants exceeded last year's production by 5,32,000 tonnes of ingot steel and by 3,88,000 tonnes of saleable steel, representing an increase of 15.3 per cent and 14.9 per cent respectively.

The Bhilai Steel Plant has achieved record production both of ingot and saleable steel during the financial year. While the production of ingot steel is a little over 84 per cent of the rated capacity, the production in the Merchant Mill and the Wire Rod Mill of the Plant in the financial year has exceeded rated capacities of 500,000 and 400,000 tonnes respectively. The Action Committee of the Planning Commission under the chairmanship of Shri M. S. Pathak, examined the working of Bhilai Steel Plant, and has recommended that with the setting up of certain additional manufacturing facilities as well as the use of improved refractories, the rated capacity of 2.5 million tonnes can be achieved by the end of 1975.

In Rourkela also, record production of ingot steel has been achieved during the financial year. But for the shortage of power which particularly affected the working of the rolling mills in the Plant production of saleable steel would also have achieved a new record. The Action Committee of the Planning Commission has recommended the removal of serious imbalances in the Plant in order to reach full rated capacity. On the implementation of the recommendations, it should be possible for the Plant to achieve its rated capacity in 1974-75.

Production in Durgapur has been affected by a number of reasons of which unsatisfactory industrial relations are the most important. This Plant has also been affected by power shortage. The recommendations of the Action Committee on Durgapur Steel Plant have not yet been finalised.

New Steel Plants

The preliminary work relating to the setting up of the New Steel Plants continued to make satisfactory progress. The techno-economic feasibility Report on the Salem Steel Project was considered and an investment decision taken. The product-mix for the plant has also been approved. As follow-up action on the techno-economic feasibility reports of the Visakhapatnam and Vijayanagar Steel Projects, a Study Group was set up in May, 1972 to examine the scope for reducing the capital and operating costs of these two projects. They submitted their report in October, 1972. In pursuance of the recommendation made therein, the consultants have worked out the techno-economics for a number of alternatives for the product-mix, based on installation of larger size blast furnaces than those proposed in the feasibility reports.

A new company by the name of "Salem Steel Ltd." was incorporated on the 25th October, 1972 with its registered office in Tamil Nadu, to construct and operate the Salem Steel Plant. The Company which would initially have an authorised capital of Rs. 100 crores, is a subsidiary of the Steel Authority of India Limited (SAIL). It is also proposed to set up new companies for the implementation and operation of the Visakhapatnam and Vijayanagar Steel Projects, and these will also be subsidiaries of the Steel Authority of India Limited.

Holding Company for Steel

It was reported in last year's Annual Report that a decision had been taken to set up a Holding Company for steel and associated input industries such as coking coal, iron ore and manganese ore. During the year under review, Government have taken decisions on a number of basic issues for giving concrete shape to the Holding Company. Shri M. A. Wadud Khan assumed charge of the post of Secretary to the Government of India and Chairman-designate of the Holding Company on the 14th August, 1972. A decision has been taken regarding the public sector organizations under the Ministry of Steel and Mines which will come within the ambit of the Holding Company.

The Holding Company i.e. the Steel Authority of India Limited was registered under the Companies Act on the 24th January, 1973.

Distribution Policy

To effect further improvements, modifications in the revised system of distribution have been effected in the course of the year, in the light of the experience gained. The Study Group set up by Government in November, 1972 to review the working of the existing system of distribution of steel has submitted its report recently. Its recommendations are under active consideration of the Government.

Steel Prices

During the year there was no general increase in prices fixed by the Joint Plant Committee to benefit the producers. However, in respect of certain categories of steel, prices were revised with effect from 22-7-1972.

In the latest Budget, Government have replaced regulatory duties which formed 50 per cent of the basic excise duty by auxiliary levies, the rate being 75 per cent of the effective basic excise duty in the case of steel ingots and iron and steel products.

Metal Scrap Trade Corporation

The administrative control of Metal Scrap Trade Corporation has been transferred from the Ministry of Foreign Trade to the Ministry of Steel and Mines (Department of Steel). The scope of activities of the Corporation is also being enlarged. The Corporation will play a significant role in setting up scrap processing machinery at appropriate places in the country and in standardisation of equipment for this industry.

Steel Bank

A Steel Bank has been set up to maintain stocks of specified critical categories of steel so that priority users could be supplied such materials ex-stock. Various projects with priority demands or units manufacturing/fabricating components for

such projects can obtain material from the Bank by surrendering import licences/release orders/foreign exchange allocations received by them.

Supply of imported steel to registered exporters

A scheme for supply of imported steel to registered exporters for executing export orders held by them for which the requisite quantity of steel may not be available indigenously has been in operation since April 18, 1972.

Taking over the Management of Indian Iron & Steel Company

A progressive decline in the production of the steel plant of Indian Iron and Steel Company came to be noticed for some time (an all-out low production was reached during the month of June, 1972). The deterioration appeared to be due chiefly to inefficient management and lack of adequate investment to maintain and where necessary replace vital equipment. Production in an important plant like this being crucial to development, Government decided to take over the management of the Company. The management was taken over with effect from the 14th July, 1972 by the issue of an Ordnance which was subsequently (in September, 1972) replaced by the Indian Iron and Steel Company (Taking over of Management) Act, 1972. Since the taking over, which is for a period of 2 years, apart from short term measures taken to improve production, a rehabilitation programme for the plant has also been drawn up which, it is visualised, will enable it to achieve its rated capacity of 1 million tonnes of ingots a year by 1975-76.

Expansion of Tata Iron and Steel Company

The question of increasing the capacity of the steel plant of Tata Iron and Steel Company from the existing 2 million tonnes of ingot a year to 4 million tonnes or more has been under consideration. With a view to determine how best to achieve this increase, Government have approved the preparation of a feasibility study by Nippon Steel of Japan. The preparation of this will be supervised from the Indian side by a seven man Steering

Committee, of which the Chairman and three members have been nominated by Government.

Joint Negotiating Committee

The Joint Wage Negotiating Committee for the Steel Industry which successfully negotiated a comprehensive agreement on wages and allied matters covering nearly 2,00,000 workers both in the public and private sectors, in October, 1970, continues to function as a Joint Negotiating Committee for the Industry. Apart from supervising the implementation of the agreement, it has appointed a Standardisation Committee to standardise designations, scales of pay and amenities in respect of leave, holidays, medical benefits and retirement age. It has drawn up a job evaluation scheme for standardisation designations and wages for similar jobs in all the Steel Plants. It is also concerned with the abolition and regulation of contract labour in the plants.

The Committee has agreed to devote its attention to problems of production and productivity in the steel plants. Recently it has finalised the targets of production for each of the Steel Plants for 1973-74 fixed on the basis of joint discussions between the management and the workers at the plant level. The Committee is also expected to suggest ways and means of securing the maximum cooperation from the workers and of removing such impediments as stand in the way of higher production and productivity.

National Metallurgists' Day

Since 1963, a National Metallurgists' Day is celebrated every year on the 14th November. On this occasion cash awards and a scroll are given to selected metallurgists for their outstanding contributions in the metallurgical field including operations, research, design, defence and education. The Tenth National Metallurgists' Day was celebrated in New Delhi on the 14th November, 1972, when 8 distinguished metallurgists were honoured—four with cash awards of Rs. 3,000 each and four with two joint cash awards of Rs. 3,000 each for their outstanding contributions in various fields of metallurgy.

FUNCTIONS AND ORGANISATIONAL SET UP OF THE DEPARTMENT OF STEEL

The Department of Steel which, consequent on the re-organization of certain Ministries in May, 1971 forms part of the Ministry of Steel and Mines, is responsible for the steel industry both in the public and the private sectors including re-rolling mills, alloy steel and ferro-alloys industry, setting up of additional Steel making capacities, implementation of the Iron and Steel (Control) Order, 1956, and formulation of policies in respect of the distribution and imports/exports of iron and steel. The following Public Sector Undertakings were under the control of this Department :—

(1) Hindustan Steel Limited, Ranchi.
(2) Bokaro Steel Limited, Bokaro City, Bokaro.
(3) Hindustan Steelworks Construction Ltd., Calcutta.
(4) Metal Scrap Trade Corporation.
(5) Heavy Engineering Corporation Ltd., Ranchi.
(6) Mining & Allied Machinery Corporation Ltd., Durgapur
(7) Bharat Heavy Plate & Vessels Ltd., Visakhapatnam.
(8) Triveni Structurals Ltd., Naini, Allahabad.
(9) Tungabhadra Steel Products Ltd., Tungabhadra Dam.
(10) Engineering Projects (India) Ltd., New Delhi.

Consequent on the further re-organisation of certain Ministries in February, 1973, the Heavy Engineering units mentioned at items (5) to (10) above, have been transferred to the new Ministry of Heavy Industry from the 1st March, 1973. In addition, the following Public Sector units have been transferred from the Department of Mines to this Department with effect from the 1st January, 1973 :—

(1) National Mineral Development Corporation, Hyderabad.

(2) Bharat Coking Coal Limited, Dhanbad.

(3) Manganese Ore India Limited, Nagpur.

Consequent upon the decision to set up a Holding Company for Steel and the associated input industries a post of Secretary to Government & Chairman-designate of the Holding Company has been created and filled. The Holding Company has since been registered under the name "Steel Authority of India Limited".

The Secretariat of the Department is headed by a Secretary. There are 5 posts of Joint Secretary, 4 posts of Director (including the post of Internal Financial Adviser), 4 posts of Deputy Secretary and 9 posts of Under Secretary. There are 3 posts of Project Officer—one for each of the three new steel plants, viz., Salem, Visakhapatnam and Vijayanagar. In addition, there are two Advisory Wings. The Technical Wing comprises a Senior Industrial Adviser, 2 Industrial Advisers, 4 Development Officers and 6 Assistant Development Officers who are posted in the Main Office, and 1 Industrial Adviser, 2 Development Officers and 2 Assistant Development Officers who are posted in the Branch Office attached to the Office of the Iron and Steel Controller at Calcutta. The Economic Wing comprises an Economic Adviser, three Assistant Economic Advisers, two Assistant Directors, an Analyst and one Artist. With the exception of one Assistant Economic Adviser, 1 Development Officer, 2 Assistant Development Officers and two Assistant Directors all other officers are in position.

ATTACHED AND SUBORDINATE OFFICES

Office of the Iron and Steel Controller, Calcutta

The Iron and Steel Controller implements the Iron and Steel (Control) Order 1956, and formulates proposals for import/export policies. As Chairman of the Joint Plant Committee, he supervises 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 of the Department is the Chairman. The Iron and Steel Controller publishes a

Quarterly bulletin namely "Iron and Steel Control" which contains information regarding production of iron and steel items and other matters of interest to 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 functioning in an officer-oriented manner. Their main functions are as follows :—

(i) To conduct inspections and take other necessary measures to ensure that the consumers who receive steel materials on a priority basis from Producers' Works and Stockyards do not misutilise the same.

(ii) To ensure that the Producers' Stockyards strictly adhere to the Procedure laid down by the JPC for issue of steel materials from the Stockyards.

(iii) To exercise a check over the registered billet re-rollers to ensure that they follow the discipline laid down by the Billet Re-rollers Committee with regard to the rolling programme and the allocations made by the Committee.

(iv) To ensure that the industrial units which are allowed import of raw materials etc., as per essentiality certificates issued by the Iron and Steel Controller, utilise them for the purpose for which they have been imported.

(v) To keep a watch over the market trends and open market prices of steel materials.

The inspections carried out and the vigilance exercised by these offices has already resulted in a decrease of abuses in the distribution and utilization of steel during the present period of scarcity.

HINDI CELL

There is a Hindi Cell in the Department under the charge of a full-time Hindi Officer. The Department is continuing to

make efforts to implement the policy of the Government in regard to progressive use of Hindi. An official Language Implementation Committee set up in the Department reviews the progress 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.

SPECIAL CELL

The Committee of Inquiry (Steel Transactions) headed by Shri S. K. Sarkar, former Chief Justice of India, submitted its report on February 29, 1968. Government has accepted the recommendations of the Committee and has decided to take departmental action against the persons who had been adversely commented upon by the Committee. Government has also decided that investigation of the remaining cases relating to the issue of large value licences/permits should be continued. This work has by and large been completed by the Special Cell created for this purpose. This Cell has been wound up on 30th April, 1972.

STEEL AUTHORITY OF INDIA LIMITED (SAIL)

The Government have set up the Steel Authority of India Limited, a holding Company for steel and associated input industries, with, among others, the following objects :

(i) To plan, promote and organise an integrated and efficient development of the iron and steel and associated input industries, such as, iron ore, coking coal, manganese, limestone, refractories, etc., in accordance with National economic policy and objectives laid down by the Government from time to time.

(ii) To coordinate the activities of its subsidiaries to determine their economic and financial objectives/targets and to review, control, guide and direct their performance with a view to securing optimal utilisation of all resources placed at their disposal.

(iii) To act as an entrepreneur on behalf of the State, to identify new areas of economic investments and to undertake or help in the undertaking of such investments.

(iv) To formulate and recommend to the Government a national policy for the development of iron and steel and related input industries and to advise it on all policy and technical matters.

The Authority was registered as a Company under the Companies Act on 24-1-1973.

SAIL AS PROMOTER AND DEVELOPER

SAIL is expected to provide a comprehensive framework of an organisation for ensuring coordinated development of the Iron & Steel Industry covering both the public sector and the joint sector. It will be concerned not merely with the steel producing units in the economy but will also take under it

several other industries which are intimately connected with the steel industry as major suppliers of inputs needed by the steel industry, such as, coking coal, iron ore and manganese. In this way, SAIL will be able to achieve economies of both vertical and horizontal integration in the sector with which it is concerned and ensure coordinated growth at least cost.

One of the important aspects of the role of SAIL would be in regard to the private sector steel plants and other associated industries in which public financial institutions have large investments. The Government's intention is to utilise the heavy public investments in the private sector units as a means of directing operations of the units in such a manner as to subserve the large socio-economic ends. To achieve this objective, the Government have decided that SAIL will exercise proxy and other rights on behalf of public financial institutions in respect of their investments in the private sector steel and associated industries.

SAIL would be in a better position to formulate and recommend to the Government a national policy on the development of steel and associated industries as also to advise it on all related policy and technical matters. Instead of building other parallel layers of technical expertise, Government would generally utilise the technical expertise of SAIL in the field of steel and associated industries.

SAIL AND ITS SUBSIDIARIES

The following public sector organisations will become subsidiaries of SAIL :

(i) Hindustan Steel Limited
(ii) Bokaro Steel Limited
(iii) Salem Steel Limited
(iv) National Mineral Development Corporation
(v) Bharat Coking Coal Limited
(vi) Hindustan Steelworks Construction Limited
(vii) Manganese Ores Limited
(viii) Bolani Ores Limited.

The shares held by the President in these companies will be transferred to SAIL who will then become their owner. The shares of SAIL will be fully owned by the President. In addition, the shares held by the President in the Mysore Iron & Steel Ltd. and the private-sector steel companies will also be transferred to SAIL. The new companies for the management of the proposed steel plants at Visakhapatnam and Vijayanagar would be set up as subsidiaries of SAIL. All future development in the public sector iron and other allied industries would be under the control and guidance of SAIL.

BOARD ON MANAGEMENT OF SAIL

Some changes have been made in the present policy of the government in respect of management. While the Chairman of the Board of SAIL will be appointed by the President, the members of the Board will be appointed by the President in consultation with the Chairman of SAIL. In view of the need to strengthen SAIL's corporate planning function, to enable it to provide necessary guidance to its subsidiaries and to organise research and development programmes in the industries under its control, three full time directors have been appointed in-charge of functional areas, namely Finance, Technical and Commercial. The Chairman of some of the subsidiary companies have also been appointed to the Board of SAIL. It is proposed that the steel plants and subsidiary companies will have adequate autonomy and authority and will be accountable for their results and performances. In order to promote effective coordination between public sector financial institutions and SAIL, one representative on a rotational basis has been made a member of the Board.

It is envisaged that the Board may also have some external Directors not exceeding 1/5th of the total membership of the Board. These Directors would be persons of experience who would contribute their wise counsels to the Board whose experience and standing would be of special value to the work of SAIL. The Government have also appointed the Finance Secretary and the Secretary Planning Commission as Directors to

the Board of SAIL in order to streamline the process of decision-making, to reduce, as far as possible, the need for making cross-references between SAIL and other concerned Ministries and bodies of Government and to ensure that the matters concerning SAIL are considered at the highest level. This will also ensure that the formulation of the budget and the development plan of SAIL is done in accordance with the priorities and resources of the Government.

BOARDS OF MANAGEMENT OF SUBSIDIARIES

As far as the subsidiaries of SAIL are concerned, direct relationship between them and the Government would become unnecessary. It is expected that there will be some changes in the present organisational structure of the Ministry of Steel and Mines.

The Chairman of the subsidiaries would be appointed by the Chairman of SAIL with the approval of the President. The Directors on their Boards would be appointed by Chairman of SAIL in consultation with the Chairman of the concerned subsidiaries. The General Managers and Chief Executives of subsidiaries would be appointed by the Selection Committee of SAIL. It is proposed to co-opt external members on the Selection Committee for specialised posts. This will enable the Selection Committee to discharge its functions more objectively and ensure that selection/promotions are made on a sound and fair basis. It has, however, been decided that in view of the need to maintain a measure of uniformity of pay scales and emoluments in the public sector enterprises, the salaries and other benefits to be paid by SAIL would generally conform to the guidelines and norms laid down by the Government for public sector companies.

DEVELOPMENT OF 'STEEL CADRE'

The Government have also exempted SAIL from the application of Empanelment Procedures in regard to selection/appointment of personnel. This has been done in order to give SAIL

PLANNING AND DEVELOPMENT

A universal yardstick for measuring a nation's level of development is the per capita consumption of steel. The world consumption of steel now estimated at about 150 Kg. per head per annum. In some parts of Asia and Africa, it is 27 Kg. The corresponding figure for India was about 9 Kg. in 1955-56 and still remains at around 10 Kg. We have not been able to improve on this level yet and as such we are still one of the lowest in the world. During the same period the annual production in some of the advanced countries like Japan, USA, West Germany has increased considerably. Considering this unsatisfactory position in the country and its effect on industrial growth, serious attempts have been made to increase our steel manufacturing capacity to meet the future needs resulting from growing industrialisation. Besides, increase in steel production is also necessitated by our desire to curb inflationary pressure resulting from persistent shortages and not to allow our defence and exports efforts to slacken.

With this end in view, various steps have been taken in the recent past to identify the bottlenecks in our steel plants and to take suitable steps to overcome them, the details of which are available in the succeeding Chapters. Apart from the operational problems concerning the working units, our attention has also been directed to the long term view of the matter. Considering the long period required for setting up steel plants and to provide for its main inputs such as coal and iron ore, it is essential that the capacity that should become available by 1985 should be planned from now itself. One aspect of this planning is the expansion of capacity of existing units which is generally less time consuming and more cost effective than setting up new steel plants. It has been decided to expand Bhilai from 2.5 million tonnes to 4 million ingot tonnes and is proposed to expand later to 7 million ingot tonnes per annum.

The possibilities of further expansion of Durgapur and Rourkela are also being explored. Bokaro will be expanded from the first stage of 1.7 million ingot tonnes to 4 million tonnes and thereafter to 5.5 million ingot tonnes. Further expansion of the capacity of Bokaro Steel Plant to 10 million ingot tonnes per annum is also under examination. Apart from the Public Sector steel plants, the possibilities of expansion programmes of IISCO to about 2.5 million tonnes and TISCO to about 4.5 million tonnes are also being investigated.

In addition to the expansion envisaged in respect of existing steel plants, effective steps are being taken to set up new steel plants. The new steel plants in Visakhapatnam in Andhra Pradesh and Vijayanagar in Mysore are each being designed for a capacity of around 2.7 million tonnes of mild steel. The special steels plant at Salem with a capacity of 1,95,000 tonnes is already under execution. Taken together, the setting up of new steel plants, the expansion programmes under implementation and under investigation together with full utilisation of capacity of the existing plants—all these steps are expected to give up a production of about 16 million tonnes by 1980. To meet the growth in demand during the Sixth Plan period and thereafter, additional capacity would require to be created by expansion of existing plants and by establishing new plants at green field sites. The economics of the alternatives available are presently being studied and preliminary work on location studies for new steel plants to be included in future plans has commenced.

The setting up of a steel plant requires a large measure of planning for manufacture of both mechanical and electrical equipment, securing of know-how and design for fabrication of equipment, strengthening of consultancy and engineering agencies and an adequate organisation for construction. To this end, steps have been taken to improve and strengthen the working of Public Sector agencies for manufacture of heavy mechanical and electrical equipment as well as bulk handling and conveyor equipment, particularly the Heavy Engineering Corporation at

Ranchi, Heavy Electrical units at Hardwar, Bhopal and Ramchandrapuram and Mining & Allied Machinery Corporation at Durgapur. Capacity has also been created in the Instrumentation Limited, Kota, for the supply of complete instrumentation. Supplies of equipment would also be forthcoming from the private sector units. Studies have been completed recently on standardisation of equipment in order to take advantage of the possibilities of batch manufacture so that lead time for manufacture of plant and machinery is curtailed. The Hindustan Steelworks Construction Ltd. is being developed as a principal and key construction organisation for building steel plants. Over the last few years, we have placed emphasis on the development of Indian equipment manufacturing capacity and technical skills. The results of these efforts will be reflected in the new steel plants which will have sizable indigenous content both in terms of technical know-how as well as equipment.

A provision of Rs. 1118.47 crores was made in the Fourth Plan for Steel and Heavy Engineering Development Programme. Of this, a sum of Rs. 369.27 crores was spent in the first two years i.e. 1969-70 and 1970-71. During 1971-72, the expenditure was Rs. 182.49 crores. During 1972-73, as against the intended expenditure of Rs. 227.94 crores, we have been able to spend Rs. 149.06 crores upto February, 1973. The approved Fourth Plan outlay for each Public Sector organisation for Steel and Heavy Engineering under this Ministry, the actual expenditure during first two years, expenditure during 1971-72 and upto February, 1973, financial targets during 1972-73 and revised outlay for 1972-73 are incorporated in the following statement:

STATEMENT

Rs. in crores

S.No.	*Name of the Schemes*	*Plan provision*	*Expenditure 1969-70 and 1970-71*	*Expenditure 1971-72*	*Expenditure upto Feb. 73*	*Financial Target i.e. B.E. 1972-73 Original Outlay 1972-73*	*Revised outlay for 1972-73*	*Remarks*
1	2	3	4	5	6	7	8	9
1.	Hindustan Steel Ltd.	253.22	38.24	14.84	24.69	40.07	32.08	
2.	Bokaro Steel Ltd.	680.00	293.01	155.88	116.13	160.00	140.00	
3.	Heavy Engg. Corpn.	40.18	9.39	3.89	2.55	5.39	3.51	
4.	Bharat Heavy Plate and Vessels Ltd.	13.08	7.44	2.60	1.03	1.48	1.39	
5.	Mining and Allied Machinery Corpn.	2.49	0.61	0.12	0.26	—	0.30	
6.	Triveni Structural Ltd.	0.85	0.70	0.42	0.21	—	—	
7.	Tungabhadra Steel Products Ltd.	1.00	—	-0.03	0.14	0.15	0.30	
8.	New Steel Plants at Hospet, Visakhapatnam & Salem	110.00	0.09	1.28	0.94	8.00	1.85	
9.	Hindustan Steel Works Contn. Ltd.	—	—	1.27	1.89	1.00	1.50	
10.	Mysore Iron and Steel Ltd.	8.90	8.90	1.00	0.20	2.00	0.05	
11.	Tenoughat Dam Project	8.50	10.90	1.16	0.34	—	1.50	
12.	Consortium	0.25	—	—	—	—	—	
13.	M.S.T.C.	—	—	—	0.16	—	0.16	
14.	C.E.D.B.	—	—	—	—	0.10	—	
15.	C.R.D.B.	—	—	—	—	0.10	—	
16.	Pilot Plant for Sponge Iron	—	—	—	—	0.10	0.10	
17.	Steel Authority of India	—	—	—	0.52	—	1.00	
	TOTAL	11,18.47	369.27	182.49	149.06	218.39	183.74	

Heavy Engineering Units *viz.* HEC, BHP&V, MAMC, Triveni Structurals & Tungabhadra Steel Products are now under the Ministry of Heavy Industry.

Alloy Steels

Till the beginning of the Fourth Plan, the production of alloy steels in the country was limited and was confined to simpler grades of low value items. With the setting up of Alloy Steel Plant, Durgapur, with a production capacity of 60,000 tonnes of finished alloy steels, conversion of Mysore Iron & Steel Ltd. into an alloy steels plant with a production capacity of 77,000 tonnes and with the setting up of Mahindra Ugine Ltd., a Company in the Private Sector, with a production capacity of 24,000 tonnes, the indigenous alloy steel production capacity was substantially augmented. In the year 1968-69, the indigenous production of alloy steel was 200,000 tonnes which increased to 3,50,000 tonnes in 1971-72. This included silico manganese spring steel, chrome-vanadium, spring steel carbon and alloy constructional steel, high speed steel, high carbon of alloy tool and die steel, die blocks, stainless and heat resisting steel, free cutting steel and electrical steel sheets. This year the production is likely to remain at the level of last year because of various factors like power shortage.

The preparatory work on the long-term development programme of Alloy Steel Industry is progressing. There is a proposal to increase the capacity of ASP, Durgapur, from 60,000 tonnes to about 180,000 tonnes which is under detailed examination and review. The expansion of MISL, is also at the preliminary stage of consideration. Meanwhile a proposal from MISL to go ahead with a Forge Plant to produce high speed steel, tool steel, die block, etc. is under examination. Mahindra Ugine, have a licenced capacity to produce 36,000 tonnes. The Company's proposal to expand their capacity to 60,000 tonnes is also under consideration. The alloy steel plant sanctioned in Bihar in the Private Sector with a capacity of 40,000 tonnes is making good progress. Import licence for equipment has been issued and equipment is reported to have been ordered. Construction of major plant buildings are in an advanced stage of progress. Production is likely to start by early 1975.

In order to have the benefit of larger batch production and improved productivity, standardisation of more categories of alloy steels is being pursued. Thirty qualities of alloy construction and carbon construction steels have been standardised according to ISI specifications for use in the automobile industry and use of equivalent number of foreign standards for ordering have been banned. The next stage of work has been taken up on spring steels. 5-6 qualities of spring steels have been standardised. The administrative steps of banning the equivalent number of foreign standards are being taken.

Connected with the production of alloy, special and plain carbon steels is the question of utilisation of scrap. In order to meet indigenous scarcity for ferrous scrap which constitutes the principal feed stock for the electric furnace units in the country, export policy for scrap has been made restrictive, and, import policy for the year 1972-73 had permitted import of heavy melting scrap to the extent of 20 per cent of the requirements. Various steps for collection of scrap and supplementing it with a partial use of pig iron are also in hand.

The Report of the Working Group on various aspects of ferrous scrap was examined and all the recommendations which were made in the Report are under implementation.

Shortages of graphite electrodes in the past have been overcome by imports. During the years 1970-71 and 1971-72 the imports of graphite electrodes were to the tune of 5,045 tonnes and 6,500 tonnes respectively. The present requirement of graphite electrodes has been estimated to be of the order of 8,500 tonnes per annum which is likely to increase to 10,000 tonnes during the year 1973-74. Steps are also being taken to develop indigenous manufacturing capacity for graphite electrodes commensurate with the growing requirements of the industry. At present there is only one firm engaged in the manufacture of this item, viz., M/s. Graphite India Limited, whose annual capacity is 5,000 tonnes, against which they have been reporting an annual production of 3,500 tonnes only. This firm has been permitted to expand its production capacity to 10,000 tonnes per annum. For this purpose additional facilities are being set up at Bangalore and their Bangalore plant is expected to go into production by the end of this year. In the Private

Sector, recently M/s. Rajasthan Spinning and Weaving Mills Ltd., have been allowed to set up a plant with a capacity of 5,000 tonnes of graphite electrodes per annum. For this purpose, their collaboration with M/s. Pechniey of France has recently been cleared by the Foreign Investment Board and a new Company has also been floated by the name of M/s. Hindustan Graphite Electrode Ltd. Besides, a proposal to set up a plant in the Public Sector of a capacity of the order of 10,000 to 15,000 tonnes per annum is also being considered.

NEW STEEL PLANTS

Background

Government decision to set up three new steel plants—one each at Salem, Visakhapatnam and Hospet (since renamed as Vijayanagar) was announced on April 17, 1970. Of these, the Salem Steel project is being designed for the production of special steels whereas the other two are to be integrated steel plants for the production of mild steel.

Preliminary Steps

Soon after the announcement of the above decision, site selection committees were set up and the project areas were demarcated. Action on a number of preliminary steps was also initiated, e.g., identification of sources of raw materials, topographical surveys of the project areas, soil testing, surveys for railway exchange yards and sidings, preparation of water supply schems, collection of samples of raw materials for laboratory tests and so on. The State Governments were also authorised to commence land acquisition proceedings after the consultants had finalised the plant layout in each case.

Commissioning of Consultants

Consultants were commissioned on February 27, 1971, for the preparation of the techno-economic feasibility reports on these projects.

Setting up of a Steering Committee

On March 1, 1971, a Steering Committee was set up, with the Secretary, Department of Steel as Chairman, to review, coordinate and keep a close watch on the progress of work on these projects.

Product-mix

A study group was appointed to recommend the product-mix for these projects (keeping in view the gap between the

demand for steel forecast for 1980 and the availability of steel products) and the Steering Committee for the new steel projects took a view on the product-mix, on the basis of which the consultants were to proceed with the preparation of the feasibility reports.

Progress of work

Salem Steel Plant

(i) The techno-economic feasibility report prepared by M/s. M. N. Dastur & Co. (P) Ltd., on the Salem steel project which was received on December 10, 1971, was considered at a series of meetings with the representatives of the consultants and of the various Ministries concerned and an investment decision was taken on May 15, 1972. The Salem special steels plant is to be designed for the following product-mix:

		Tonnes/Year
Sheets and Strips		
Stainless Steel	Cold Rolled	65,000
	Hot Rolled	5,000
Electrical Steel	Cold Rolled	75,000
Carbon Steel	Hot Rolled	30,000
Mild Steel	Hot Rolled	20,000
		195,000

(ii) Capital and Operating costs

The total estimated cost of the Salem steel plant, as assessed by the consultants, is about Rs. 340 crores. The plant is expected to reach the break-even stage at 88 per cent utilisation of capacity and a marginal profit of Rs. 30 lakhs has been forecast on 90 per cent utilisation of capacity. As the capital and operating costs are rather high, every effort would be made to reduce these costs during the stage of preparation of the detailed project report.

(iii) Process

A delegation headed by the Steel Secretary visited selected stainless steel plants in the USA and Europe during May-June, 1972, and recommended the adoption of the vacuum decarburisation process for refining of stainless steel heats. Another delegation also headed by the Steel Secretary confirmed this recommendation after visiting major stainless steel producing plants in Japan during August, 1972.

(iv) Electrical and other special steels would be produced at Salem using locally available iron ore.

(v) Land Acquisition

For the entire plant including township, it is estimated that a total of 1,460 hectares (3,650 acres) of land would be required. An area of about 559 hectares (1,397 acres) has been acquired so far. It is estimated that the land acquired so far would be adequate for the immediate requirements to start construction work. The Government of Tamilnadu have been requested to acquire a further 146 hectares (about 365 acres) where the administration block, training centre, construction yard, exchange yard and railway entry to the plant are proposed to be located. So far, a sum of Rs. 85 lakhs has been placed at the disposal of the State Government for land acquisition.

(vi) Water Supply

The Government of Tamilnadu have drawn up a scheme for supply of water from the Cauvery to the Salem steel plant and township. Taking into account the technological requirements of the various processes, the scheme is to be finalised. The requirements of water during the construction stage would be met by the Salem municipal authorities.

(vii) Power Tariff.

Since the Salem steel plant would be power intensive, the Government of Tamilnadu were requested to make available power at a special tariff. They have agreed to make available power at five paise per kwh for a period of ten years from the date the plant goes into production.

(viii) Phasing of Implementation of the Salem Steel Project

To ensure early commissioning of the project and develop a commercial environment in the initial stages of operation itself, Government have decided that the project would be implemented in the following stages:—

Stage I

Phase: I—A cold rolling mill complex would be installed for cold reduction of 30 to 35,000 tonnes of hot rolled stainless steel sheets. For this, hot rolled coils would have to be imported for about three years. This stage is expected to be commissioned by 1976.

Phase II—In this phase, facilities would be added for melting and refining of stainless steel. In addition, continuous casting and hot rolling facilities would be established to feed the cold finishing lines. This stage is expected to be completed in 1977-78.

Stage II — In this stage, all the facilities required for manufacture and processing of silicon and other special steel sheets and strips would be put up. This stage is being planned for completion in 1978-79.

(ix) Setting up of a New Company for Implementation of the Salem Steel Project.

To implement the project as per the time schedule outlined above, the need was felt for setting up a management team which would apply itself to all the related tasks and ensure coordinated implementation of the project. Government, therefore, approved the setting up of a separate company to construct and operate the Salem steel plant. Accordingly, on October 25, 1972, Salem Steel Ltd. was incorporated with its Registered Office at Salem in Tamilnadu. The company would initially have an authorised capital of Rs. 100 crores.

Salem Steel Ltd. is a subsidiary of the Steel Authority of India Ltd., the holding company for steel and associated input industries.

VISAKHAPATNAM AND VIJAYANAGAR STEEL PLANTS

(i) The techno-economic feasibility report on the Vijayanagar steel project was received from the Central Engineering and Design Bureau on January 29, 1972, while the feasibility report on the Visakhapatnam project was submitted by M/s. Dastur & Co. on February 16, 1972. These reports were prepared on the basis of a capacity equivalent to two million ingot tonnes in each of these plants and the product-mix was to comprise only shaped products to fill the gap between demand and likely availability of shaped products by 1980. These reports indicated that, on account of the high cost of plant and equipment, raw materials, transportation charges etc., the cost of production would be comparatively high and there would be substantial recurring losses.

(ii) Follow-up action on the Feasibility Reports

With a view to reducing the capital and operating costs wherever possible and thereby to improve the economics of these plants, a series of discussions was arranged by the Department of Steel with both the consultants and in these discussions, the representatives of the Planning Commission as well as the Bureau of Public Enterprises also participated.

(iii) A Study Group was also set up in May, 1972, under the chairmanship of the Joint Secretary (New Steel Plants Division), Department of Steel, with representatives of the Planning Commission as well as the Bureau of Public Enterprises, to examine the scope for reducing capital and operating costs on these two projects.

(iv) Report of the Study Group on Cost Reduction

The report of the Study Group was submitted in October, 1972. The Study Group recommended that the consultants should be advised to prepare fresh profitability studies for a number of alternatives for the product-mix, based on installation of larger size blast furnaces than those proposed by the Consultants in their Feasibility Reports, so as to obtain economies of

scale. Accordingly, the Consultants have worked out the techno-economics for a number of alternatives.

(v) These studies have shown that on the basis of the current J.P.C. prices:

(a) a two-million ingot tonne plant would not be an economically viable unit whether it is designed for production of shaped products or even of flat products;

(b) even with an annual capacity of 3 or 4 million ingot tonnes, a plant producing only shaped products, viz., bars and rods, structurals, light merchant products and billets for sale, would incur losses; and

(c) for a plant producing only flats, to make a marginal profit, a capacity of over 2.5 million tonnes per annum would have to be provided for.

(vi) Plant capacity and product-mix

A decision on the capacity of each of these plants is expected to be taken shortly, keeping in view the performance of the 2,000 cu.m. blast furnace which was commissioned recently at Bokaro.

(vii) In view of the heavy investments involved and the substantial recurring losses forecast by the Consultants, various alternatives for the plant capacity and product-mix have had to be carefully considered. These exercises have been completed and recommendations are being made for facilitating investment decisions.

(viii) Meantime, preliminary steps are in progress in respect of both these projects as shown below:—

(a) Land Acquisition

As regards the Vijayanagar steel project, an area of 1,800 hectares (4,500 acres) out of a total of 2,400 hectares (6,000 acres), required for the plant has already been acquired. An amount of Rs. 65 lakhs has so far been placed at the disposal of the Government of Mysore for land acquisition.

In respect of Visakhapatnam steel project, the initial notifications under Section 4(1) of the Land Acquisition Act have been issued by the State Government and land acquisition proceedings are being expedited. A sum of Rs. 15 lakhs has been placed at the disposal of the Government of Andhra Pradesh to meet the expenditure on land acquisition during 1972-73.

(b) Water Supply

The Water supply schemes drawn up by the Governments of Mysore and Andhra Pradesh for the Vijayanagar and Visakhapatnam steel projects respectively are being finalised in consultation with the Central Water and Power Commission.

(c) Soil Investigations and Site Preparation

The Survey of India have completed the topographical surveys of the plant sites and prepared contour maps. Hindustan Steelworks Construction Ltd. (a Government of India undertaking) have completed all the work connected with soil investigations and they have set up base offices at Visakhapatnam (Andhra Pradesh) and at Tornagalu (for the Vijayanagar steel project in Mysore).

(d) Railway facilities

The Railways have completed their preliminary surveys for the exchange yards, sidings, etc.

(e) Testing of Raw Materials

Arrangements have been made for the testing of samples of iron ore, limestone and dolomite at the National Metallurgical Laboratory, Jamshedpur for both the projects.

M/s. Lurgis of West Germany have carried out tests on Donimalai iron ore to determine its suitability for the production of pre-reduced pellets. For determining the suitability of Donimalai ore for production of super-fluxed sinter and fluxed pellets, M/s. Tiajpromexport of USSR have been engaged and the samples are presently being tested in USSR.

Investigations work on limestone and dolomite deposits at Bagalkot (Mysore) and at Jaggayapeta and Khammam (Andhra

Pradesh) has been taken up. Detailed prospecting is in progress. The work has been entrusted to Mysore Minerals Limited in so far as the Bagalkot deposits are concerned while the assignment for the detailed prospecting for Jaggayapeta (Andhra Pradesh) has been entrusted to the Department of Mining and Geology, Government of Andhra Pradesh.

(ix) Commissioning Schedules (Provisional)

Vijayanagar and Visakhapatnam	1979-80

(x) Formation of New Companies

It is proposed to set up new companies for the implementation and operation of the Vijayanagar and Visakhapatnam steel projects. These companies will be subsidiaries of the Steel Authority of India Limited.

PRODUCTION, PRICES AND DISTRIBUTION

Production

The target of production of Steel Ingots for 1972-73 was 7.2 million tonnes for the five main producers, as against the actual production of 5.8 million tonnes in 1971-72. The actual production of Steel Ingots during 1972-73 amounted to about 6.1 million tonnes. The reasons for the lower production as compared to target are given elsewhere in this report. The following table shows production in relation to rated capacity.

(In thousands tonnes)

	1970-71		1971-72		1972-73	
	Rated Capacity	Production	% of rated Capacity	Production	% of rated Capacity	Production	% of rated Capacity
1	2	3	4	5	6	7	8
1. Hindusan Steel Ltd.							
(a) Bhilai Steel Plant .	2,500	1,940	77.6%	1,953	78.2*	2,108	84.3%
(b) Rourkela Steel, Plant .	1,800	1,038	57.6%	823	45.7%	1,177	65.3%
(c) Durgapur Steel Plant .	1,600	634	39.6%	700	43.8%	723	45.1 %
TOTAL HSL .	5,900	3,612	61.2%	3,476	58.9%	4,008	67.9 %
2. Tata Iron & Steel Co. Ltd.	2,000	1,715	85.8%	1,708	85.5%	1,690	84.5%
3. Indian Iron & Steel Co	1,000	627	62.7%	617	61.7%	431	43.1%
4. Main Plants (1+2+3) .	8,900	5,954	66.9%	5,801	65.1%	6,129	68.8%

*Details of year-wise production of steel ingots, saleable pig iron, saleable steel, tool, alloy and special steels and finished steel are shown in Appendices I to VI.

Details of year-wise production of steel ingots, saleable pig iron, saleable steel, tool, alloy and special steels, and finished steel are shown in Appendices I to VI.

Prices

The three main producers of steel, *viz.*, Hindustan Steel Ltd., Tata Iron & Steel Company Ltd. and Indian Iron and Steel Co. Ltd. represented to Government in April/May 1972 for an increase in steel prices. In their representations, the main producers referred to various items of cost escalations which had not been covered by the increase in steel prices approved by Government on December 30, 1969 and also to further cost escalation factors which had taken place since then. According to them, the total effect of these escalations came to over Rs. 100 per tonne. Of this, wages (including D.A.) accounted for over Rs. 30 per tonne, raw materials over Rs. 20, Refractories, Rolls and Fuel Oil over Rs. 25 and other factors such as Railway Freight, consumable stores, power etc. over Rs. 32 per tonne. They had pointed out that in the absence of a suitable price increase, their operating results were being adversely affected. Government carefully considered these representations and came to the conclusion that a general price increase for steel at this stage would not be advisable. However, it was considered that a case existed for an increase in the prices of a few selected categories. Accordingly, with effect from 22-7-1972, Government have allowed an increase in prices of the following three categories of steel, by the amounts indicated against each :

(i) Billets Rs. 80 per tonne.
(ii) Bars and Rods and Wire Rods Rs. 85 per tonne.
(iii) Structurals and Rails Rs. 50 per tonne.

In the latest Budget, Government have replaced regulatory duties which formed 50 per cent of the basic excise duty by auxiliary levies, the rate being 75 per cent of the effective basic excise duty in the case of steel ingots and iron and steel products. In addition, electric furnace products are to bear a levy of Rs. 50 per tonne. This will also be subject to an auxiliary duty of 75 per cent.

Open Market Prices

The availability was short of the demand in respect of several categories of steel. The steps taken to meet this situation included efforts to increase indigenous production by technological improvements, better industrial relations, improved maintenance etc., a fairly liberal import policy, particularly in respect of categories in short supply; regulation of exports, streamlining of the distribution system; prevention of misuse of allocation of steel; release of a substantial quantity of rerollable material, which had been held up by Court injunctions; and encouragement for the setting up of electric furnaces. These measures have already started having effect as is evidenced by the drop in open market prices of certain categories of steel such as Joists, Channels and Angles, in the last few months.

Distribution

The salient features of the revised distribution procedure introduced from May, 1970 were indicated in the Annual Reports for 1970-71 and 1971-72. This system has been working fairly satisfactorily in ensuring timely and planned supplies of steel to important consuming sectors. However, the system has been constantly under review and, from time to time, whenever it has been possible to identify areas where further improvement was called for some modifications have also been done. A brief summary of some of these important modifications during the year under review are given in the following paragraphs.

It was noticed that, in the case of some categories, there were more than one producer in the field and, in the case of some other categories, the demand was very little. The Steel Priority Committee constituted a Sub-Committee to go into this question in detail and rationalise the production of the steel plants. In other words, the intention was that, instead of all the producers trying to produce most of the categories, each plant would specialise in a few categories and, in respect of a few categories where the demand was not great, the rolling could be dropped altogether. The Sub-Committee went into this in detail and submitted two reports, covering heavy, medium and light Structurals and Merchant Mill Sections. Their recommendations have

been accepted and are under implementation. This rationalisation would, it is estimated, increase the overall production by about 24,000 tonnes per annum.

A reference was made in the last year's report to the new policy of distribution of steel to small scale industries through the Small Scale Industries Corporations, consequent on the acceptance of the recommendations of the Balachandran Committee. This policy has now been fully implemented and has come into effective operation. However, there have been some representations in this regard, primarily because the cost of this material is somewhat higher than the cost of the material received direct from the plants, as these Corporations have to charge some extra commission to cover their expenses. Government have agreed in principle that steel could be supplied to these Corporations at a concessional prices, so that, after adding their commission, the price to a unit getting steel from these Corporations would be approximately the same as the price to a unit getting directly from the steel plants. A Committee was also appointed to go into this question in detail and recommend what should be the reasonable commission to be charged by these Corporations. The Committee has finalised its report and decisions on the same are expected to be taken very shortly.

While, as mentioned above, the new distribution policy has been working smoothly and it has been generally felt that it is an improvement on the earlier system, some of the points about which representations continued to be received are regarding the 'lead time' involved between the decision to acquire steel and the actual despatch of the same. There have also been complaints that 'matching steel' continues to be an area of difficulty and the lack of a small quantum of a particular category sometimes holds up utilisation of substantial quantities of other categories already received. Government, therefore, set up a Study Group in November, 1972, generally to review the working of the present distribution system and to consider modifications, if any, which would meet the difficulties. The report of this Study Group was finalised in March, 1973 and is now under the consideration of Government.

All the six Regional Offices of the Iron & Steel Controller at Calcutta, Madras, Bombay, New Delhi, Hyderabad and Kanpur are now functioning effectively and are headed by Officers of the rank of Deputy Iron & Steel Controllers. Regional Advisory Councils under the chairmanship of these Regional Controllers, and including representatives of the State Governments and Stockyards of the main Steel Producers within their jurisdiction, have been formed to meet and discuss problems from time to time, so that as many of these as possible could be sorted out at the local level. The Regional Controllers have also been delegated some powers of allocation of urgent requirements of matching steel. These Offices continue to take effective steps in checking misutilisation of steel. During the year under review inspections were carried out in respect of 57 billet rerollers, 170 scrap rerollers, 89 forging units, 166 wire drawing units and 440 other units. So far, 41 cases have been referred to the C.B.I., including 18 during the year under review. Of these, charge sheets have been filed in 8 cases, 12 have been dropped for want of sufficient evidence and the remaining are under investigation.

A reference was made in last year's report about the new system for allocation of house-building materials in Delhi and it was also stated that the question of extending the scheme to some other Metropolitan areas was under consideration. The system in Delhi continues to work satisfactorily and this scheme has now been extended to Calcutta, Madras, Bombay, Cochin, Ahmedabad, Bangalore and Secunderabad.

IMPORTS AND EXPORTS OF IRON & STEEL

I—IMPORTS

Introduction

For sustaining a high rate of Industrial growth and building up stock of capital equipment adequate availability of steel is very vital. However, the existing level of production of steel in the country is not sufficient to meet the domestic demand. While every effort is being made to step up domestic production, sizeable quantity of steel in various categories has, nevertheless, to be imported to meet the requirements of priority and other industries and to generate confidence amongst industrial producers that enough steel would be available to enable them to push forward production. However, in framing import policy, efforts are made to ensure that while on the one hand industries do not suffer for want of essential raw material like steel and ferro alloys, on the other hand existing installed capacity, including the capacity of secondary producers and re-rollers, does not lie idle for lack of orders.

Government's endeavour is to reduce gradually the import of steel without detriment to industrial activity in the country. However, it may not be economically expedient for the country to manufacture steel required in all the sizes and specifications irrespective of the tonnages. As such some imports would always be inevitable.

The main determinants of imports are the likely gaps between the estimated demand and domestic production of each category of steel, the availability of foreign exchange and the availability of steel in foreign markets. In assessing the import needs, past experience is taken into account and imports are restricted to those items in which there is inadequate domestic availability either qualitatively or quantitatively. The main emphasis is on meeting the needs of industries which help the

economy to emerge as self-generating and self-reliant, promotion of export of engineering goods and growth of the Small Scale Industries sector.

Imports during 1971-72 and 1972-73

During 1971-72 the total value of licences issued for import of iron and steel items was Rs. 246.46 crores. The value of actual imports was Rs. 244.79 crores. The total quantity imported was 1.38 million tonnes. This however, included some material received against licences issued in the previous years. Bulk of the imports were in 'mild steel' categories which accounted for 1.09 million tonnes valued at Rs. 168.30 crores.

The value of import licences issued during April 1, 1972 to December 31, 1972 was Rs. 148.39 crores. This figure did not include the value of steel imports allowed against composite licences issued under IDA. The actual imports during April-August, 1972 were 5.79 lakh tonnes valued at Rs. 96.18 crores. Of this mild steel accounted for 4.5 lakh tonnes valued at Rs. 65.53 crores. In this are included the value of imports made against the licences issued in earlier years.

Agencies for Imports

Steel imports are being effected by the—

(i) actual users under the Actual User's Policy;

(ii) registered exporters under Registered Exporters Policy; and

(iii) Canalising agencies *viz.*, Hindustan Steel Limited, and Minerals & Metals Trading Corporation Limited.

In addition to this, bulk imports are made by HSL for the Steel Bank; for the exporters of engineering goods and under the link deals. To sustain industrial activity, whenever circumstances warrant, imports are also allowed on the *ad hoc* basis, within the constraint of foreign exchange availability.

The 'Actual User's' licences are issued in respect of those categories which are not canalised. Imports by canalised agencies are generally restricted to the canalised items. However,

sometimes they are also required to import non-canalised items on behalf of large and important consumers.

Canalisation Scheme

In keeping with Government's policy to progressively nationalise the export-import trade and to streamline the availability of steel to various sectors, the list of canalised items was further enlarged during 1972-73. The present scheme of canalisation was started in 1970-71. Initially it was restricted to only three categories of steel and ferro alloys. The scheme now covers :

	Items	Canalising Agency
Ferro Alloys:		
	1. Ferro-Molybdenum	MMTC
	2. Ferro-Tungsten	MMTC
	3. Ferro-Vanadium	MMTC
	4. Ferro Phosphorous	MMTC
	5. Ferro Silinium	MMTC
	6. Ferro Cobalt	MMTC
	7. Ferro Nickel	MMTC
	8. Ferro Aluminium and Silico Aluminium	MMTC
	9. Ferro Silico Zirconium	MMTC
	10. Ferro Boron (including stabilised Ferro Boron with Aluminium and Titanium like Grainal or Batsally).	MMTC
	11. Ferro Columbium (Niobium)	MMTC
	12. Ferro Chrome (containing 0.03% or less carbon or Nitrogen bearing).	MMTC
	13. Ferro Manganese (containing less than 0.05% carbon)	MMTC
	14. Ferro Titanium (containing less than 1% Aluminium)	MMTC
	15. Ferro alloys in powder form (except ferro-titanium) for welding industry only.	MMTC

	Items	Canalising agency
Steel:	All mild steel, high carbon and alloy steel (other than staninless steel) wire rods in coils.	Hindustan Steel Limited
	All mild steel and high carbon steel semis, including ingots, blooms, slabs and billets.	MMTC
	Stainless steel sheets, plates and strips in cut length or in coils.	MMTC
	All electrical steel sheets, strips other than cold rolled grain oriented, whether in cut lengths or in coils.	Hindustan Steel Limited
	Cold rolled grain oriented electrical steel sheets, strips either in cut lengths or in coils.	MMTC
	All mild and special steel sheets, strips and skelp in both hot rolled and cold rolled either in cut length or in coils.	Hindustan Steel Limited
	All mild steel and special steel plates including ship building quality, boiler quality and chequered plates, whether in cut lengths or in coils.	Hindustan Steel Limited
	All prime tin plates including open top sanitary can quality.	Hindustan Steel Limited
	Tin plate waste/waste, tin plate secondaries.	Hindustan Steel Limited
	Heavy melting scrap.	Metal Scrap Trade Corporation/ MMTC

The raison d'etre of canalisation of imports is the advantage associated with intelligent bulk buying operation and avoidance of various parties competing in foreign markets for the same items, particularly when the availability of steel in international market is somewhat restricted. Bulk purchases through specialised agencies lead to considerable reduction in cost through economy in foreign exchange handling and clearing charges. The costs of transportation is also reduced significantly as the imports can be brought on chartered ships at reduced freight. The scheme

further enables those needing only small quantities to get their requirements of imported steel without having to be dependent on trading houses.

The canalising agencies are, Hindustan Steel Limited, Metal Scrap Trade Corporation and the Minerals and Metals Trading Corporation.

Imports by HSL under Canalisation Scheme

The total foreign exchange allocation during April, 1972—March, 1973 (upto 10-3-73) made in favour of HSL—the major canalising agency—for import of canalised items amounted to Rs. 109.34 crores. HSL have imported/placed orders for 5,99,457 tonnes. The actual imports during this period amounted to 4,60,000 tonnes. The source-wise allocation and utilisation of foreign exchange to HSL in its capacity as canalising agency, is as follows :—

(Rs. in crores)

Source	Allocation	Utilisation	Balance
Free Foreign Exchange	62.50	62.41	0.09
Rupee Payment Area	40.00	28.00	12.00
Yen Credit	5.84	5.84	Nil
French Credit	1.00	1.00	Nil

Imports by MMTC under Canalisation Scheme

The total foreign exchange available to the Minerals and Metals Trading Corporation—the other canalising agency—in the current year for the import of canalised items amounted to Rs. 34.18 crores. Against this, foreign exchange to the tune of Rs. 14.21 crores had been utilised by them upto December, 31 1972. Originally MMTC had planned to import 1,25,500 tonnes during the year. The actual imports between April, 1972—December, 1972, however, were 71,277 tonnes. Another 23,000 tonnes of material is expected in the remaining months making

a total of 94.277 tonnes. The table below gives the source-wise allocation and its utilisation to MMTC in their capacity as canalising agency :

(Rs. in Crores)

Source	Allocation	Utilisation	Balance
GCA	20.35	14.77	5.58
Rupee Payment Area	12.36	Nil	12.35
U.K. Credit	0.73	0.73	Nil
W. Germany Credit	0.75	0.75	Nil

During the year, the utilisation of foreign exchange from sources other than Rupee Payment area has been satisfactory. However, the utilisation of 'Rupee Exchange' has not been so good in the case of both the canalising agencies. Various factors have contributed towards this. Certain categories of steel required in the country are virtually not available in the Rupee Payment Area, particularly billets, open top sanitary quality tinplates, high tensile and other special quality wire rods, boiler quality plates, ship building quality plates and certain other special quality plates, cold rolled sheets, specially in thinner gauges and extra deep drawing quality sheets. Even with regard to the other categories of steel which were generally available in RPA there has been a perceptible spurt in their domestic demand resulting in a fall in the availability of material for export. Another complicating factor has been the recent increase in trade of the East European countries. Lately the East European countries are showing a marked preference for export to the Western countries rather than export to India, as the range of products which they could obtain in return from Western countries was much larger. Consequently it is becoming increasingly difficult to obtain more steel from the East European countries. With a view to step up our imports from RPA a special team visited the important steel producing countries in East Europe during July-August, 1972 and held negotiations with various steel producers and State Trading Organisations in those countries. As a result of this visit, the availability of steel from these countries is expected to improve.

A significant development in the field of imports during the year has been introduction of a scheme for supply of imported steel for production of engineering goods for export.

Supply of Imported Steel for production of Engineering goods for export

Although in the past also domestic supply of steel to the engineering industry engaged in the production of goods for export purposes was being supplemented by allowing liberal imports, where necessary even in addition to what was permissible under the Import Policy, a regular scheme for supply of imported steel to registered exporters has been in operation since April 18, 1972. Under this scheme imported steel is supplied to registered exporters to enable them to execute export orders held by them, for which the requisite quantum of steel may not be available indigenously. In terms of this scheme steel is imported in bulk by HSL and is made available to the manufacturers of engineering goods at the JPC (or the ruling HSL price where the JPC price is not available) plus 2 per cent thereof. The scheme applies to the export products requiring steel as a raw material and which fall in the 'Engineering Group' mentioned in the Import Trade Control Policy for Registered Exporters. At present the scheme covers 9 categories of mild steel, generally required by the engineering industries. This list has been drawn up in consultation with the Engineering Export Promotion Council.

Realising that steel under this scheme would be physically available only after about 6 months—thus delaying execution of export orders—Government have agreed that the registered exporters having stocks of steel with them could utilise those stocks for the execution of the export orders in hand and could still make their application under this scheme after the export orders had been executed instead of obtaining advance allocations. The scheme also provides for building up buffer stocks by manufacturer exporters whose exports during 1971-72 exceeded Rs. 10 lakhs (FOB) or who had export orders for Rs. 10 lakhs (FOB) as on October 31, 1972 during April—September,

1972. Such releases would be adjusted against future exports within 18 months from the issue of release order. To ensure that the export obligation is not skipped the buffer stock scheme provides for furnishing bank guarantee for 50 per cent of the value of imported steel.

At the time of the formulation of this scheme it was anticipated that about 4.0 lakh tonnes of mild steel would have to be imported during the year for exporters of engineering goods. Government have so far cleared in principle import of 3.0 lakh tonnes. As on 28-2-1973 the release orders issued by the Chief Controller of Imports and Exports on HSL amounted to 157,000 tonnes. Against this, orders have been placed by HSL for 141,812 tonnes valued at Rs. 16.7 crores CIF and about 50,000 tonnes of material has already arrived. The balance material would be arriving in instalments during the year. HSL has also taken necessary action to place orders for the remaining quantity for which release orders have been issued. Besides imports by HSL, arrangements have also been made for import of 56,000 tonnes by the Project Equipment Corporation under this scheme in connection with the order for export of wagons to Yugoslavia.

The Steel Bank

Another important landmark in the field of imports during the year was the setting up of the Steel Bank. A contributory cause to the delay in completion of some of the projects in the past has been the non-availability in time of steel of required categories and specification. Even larger imports allowed to overcome the shortages did not altogether eliminate the time lag in the physical availability of steel in the required category. The Government have, therefore, set up a Steel Bank which has been charged with the responsibility of maintaining physically the requisite levels of stocks of specified critical categories of steel so that the priority users could be supplied such material ex-stock. These stocks are sustained by imports on the basis of anticipated requirements. The Steel Bank, however, is not as such intended to increase the overall availability of steel. It would also not

cut across the normal arrangements through the canalised agencies or direct by the users. The main purpose of setting up the Bank is to reduce the delays involved in matching priority demands and actual availability in terms of time and to serve as an insurance against costly delays.

In view of the considerable experience of HSL in dealing with steel, the operations of the Bank have been entrusted to them. The Government have, however, constituted an Advisory Committee for providing necessary guidance to the Bank in its operations. This Committee reviews from time to time further import requirements for the industries so that vitally needed steel items/material could be imported for stocking in the Steel Bank. Under the guide-lines laid down by this Committee, HSL in consultation with Iron & Steel Controller and other authorities reviews the areas of shortfall in indigenous production and identifies such material and sections the lack of which would affect the setting up or commissioning of the Projects.

The Steel Bank has so far placed orders for 4,710 tonnes of boiler plates, 640 tonnes of stainless steel coils, sheets and plates, 4,000 Nos. of stainless steel and carbon flanges, 74 tonnes of stainless exchanger steel tubes and 9,500 metres of seamless steel tubes and pipes. A part of this material has already arrived in the country. The remaining supplies are likely to be completed by May, 1973. Another 27,000 tonnes of critical items of steel required to be imported by the Bank have been identified and the question of their imports is under active consideration of the Bank.

The Steel Bank will maintain stock and distribute it from principal centres of industry *viz.*, Calcutta, Bombay, Delhi, Madras and Visakhapatnam. To start with, it is operating from Calcutta and Bombay where warehousing and distribution arrangements have already been organised by HSL.

The procedure for procuring material from the Bank has been notified through a Public Notice. All projects with priority demands or Units manufacturing/fabricating components for such projects can obtain material from the Bank by surrendering import

licences or release orders or foreign exchange allocations received by them.

Besides acting as a canalising agency and a bulk importer for manufacturers of engineering products, HSL has also been asked in a number of cases, to import steel items which are not canalised *i.e.* bars and rods, structurals.

Total Imports by HSL in 1972-73

Between April, 1972 and March, 1973 (as on 10-3-1973) HSL has altogether placed orders for 8,30,752 tonnes and expects to place orders for another 50,000 tonnes in the remaining part of the year. The total quantity received between April, 1972 and March, 1973 (as on 10-3-1973) (including material received against orders placed in previous year) is 6,00,000 tonnes and another 70,000 tonnes is expected by 31-3-1973 making a total of about 6,70,000 tonnes during the year 1972-73.

Rationalisation of distribution of Imported Steel

Earlier as a canalising agency HSL was importing steel for the various release order holders from those countries (*i.e.* RPA, GCA) from where those release order holders would have been entitled to import steel in case they had been allowed to import direct. If the particular categories of steel required by those release order holders were not available in those countries considerable difficulties were experienced by them in getting the supply of imported steel. To overcome this difficulty the system was modified in November, 1972. Under the modified system HSL is given a foreign exchange packet covering various sources. HSL imports steel from whatever source it is available and supplies the material to the release order holders. However, in making these supplies preferential treatment is given to the export oriented units in the matter of price, thus making their products more competitive.

Metal Scrap Trade Corporation

The administrative control of Metal Scrap Trade Corporation has been transferred from the Ministry of Foreign Trade to the

Ministry of Steel & Mines (Department of Steel). With the fall in export of scrap it became obvious that the Corporation could not remain an economically viable unit if it were to function merely as a canalising agency for dwindling exports. It has, therefore, been decided to enlarge and diversify its activities into various other fields particularly the regulation of scrap collection and distribution. The main role of the Corporation in the new circumstances will be to maximise collection of scrap. Scrap is generated in small quantities at hundreds of small engineering units all over the country. The collection is usually made by small parties who dispose of their collection to the larger trader when there is a demand. The corporation will, however, provide an assured off-take to these collectors. As a result, the collections are expected to improve substantially. In addition, the Corporation will play a significant role in setting up scrap processing machinery at appropriate places in the country and in standardisation of equipment for this industry. The present scrap processing facility in the country is considered very meagre.

The authorised capital of the Corporation is Rs. 2 crores. The paid up capital is Rs. 20 lakhs. Out of this the equity share holding of the Central Government now accounts for Rs. 16 lakhs and of the Steel Furnace Association of India and the Iron and Steel Scrap Association of India Rs. 2 lakhs each. Prior to the reorganisation of the Corporation the paid up capital was divided equally between Mineral and Metals Trading Corporation of India and these two Associations.

Import of Tool & Alloy Steel

During 1971-72 import of tool and alloy steel aggregated to 87,736 tonnes, valued at Rs. 33.99 crores against 64,824 tonnes valued at Rs. 25.81 crores during 1970-71. This increase in import of tool and alloy steel, inspite of restrictive Actual Users Policy was mainly on account of liberal imports provided under REP, and a spurt in domestic demand. The indigenous prices of tool and alloy steels are significantly higher than the imported prices largely on account of, *inter alia*, low capacity utilisation,

high cost of imported ferro alloys and high cost of electricity. There is therefore a marked consumers preference for imported alloy and special steel. In order to ensure that this does not lead to avoidable imports, applications for import, where there is a possibility of domestic supply, are carefully considered by a Committee of Alloy Steel Producers before imports are cleared. In case of extreme urgency and where materials required cannot be supplied by indigenous manufacturers, imports are cleared.

Unlike the case of mild steel, consumers requirements of tool, alloy and special steels are tailor made. There are numerous grades and sizes meeting the varied requirements of industries. The demand for tool, alloy and special steels is closely linked with the growth of consuming industries like automobile, tractors machine tools and export oriented industries. However, in the light of actual availability, imports have been allowed and may continue to be allowed in respect of high speed steel, stainless steel, die blocks, hollow sections and alloy steel wire rods particularly in sizes which are not manufactured by the indigenous producers.

It should be mentioned that even in respect of standard specifications, consumers stipulate special conditions in regard to structure, surface finish, guarantee for end use etc. Consequently, except in very few selected cases, advance production cannot take place, unless actual users plan their requirements in advance and place orders with the indigenous manufacturers in sizeable quantity.

A statement showing imports of various items of steel and ferro alloys in 1969-70, 1970-71, 1971-72 and during April-August 1972 is given at Appendix VII.

II—EXPORTS

Export of Mild Steel

The period between 1966-67 and 1969-70 witnessed a rapid growth in export of iron and steel. This was primarily due to the recession in the country. With the revival of economy, the

domestic demand picked up quite fast, reducing the overall availability for exports. A restrictive export policy is, therefore, being followed since 1970-71, and except for those categories in which the country has some surplus, exports of other categories have been drastically reduced. Consequently exports have registered a steep fall from 1970-71 as would be evident from the following table :—

	Quantity (in thousand tonnes)	Value (Rs. in lakhs)
1970-71	998.0	66,91.6
1971-72	420.1	25,48.82
1972-73 (April 72—Feb. 73).	371.3	15,66.16

To ensure maximum availability of steel to growing domestic demand only limited quantities are being allowed to be exported. Exports have been restricted to meet past commitment and to maintain some export markets, partly as an insurance against vagaries of domestic demand. Accordingly in the Export Policy for iron and steel, ferro-alloys and Ferrous Scrap, the various items have been classified into three distinct categories *viz.*, items freely permissible for export, items permissible for export on merit and items not allowed for export. Even for freely exportable items a ceiling is fixed. The quantity envisaged in the ceiling is allocated amongst various producers and others by the Steel Exporters Association in consultation with the Government. The items falling in these three categories in the Policy of 1972-73 are as follows :—

Iron & Steel	Ferro Alloys	Ferrous Scrap
A. Freely exportable items subject to ceiling limit:		
Pig iron	Ferro manganese	Cast iron borings
Ingots	Ferro manganese	Detinned Scrap
Billets	Slag	Mill Scale Scrap
Heavy & Medium Structurals		Iron Skull Scrap
Rails		Broken and Semi-broken ingot moulds
G.C. Sheets		Bottom plate scrap
M.S. Bars and Rods		

Iron & Steel	Ferro Alloys	Ferrous Scrap
B. *Item on Merits*		
All items other than those specified under A&C.	Ferro-chrome Silico Chrome	M.S. turnings and borings No. 2 quality sheets cuttings and punchings No. 2A and No. 3 quality sheet cuttings and Punchings Steel Skull Scrap Silicon Sheet cuttings Broken/discarded chilled rolls.
C. *Export not allowed*		
Slabs, Blooms, Plates Tinplates, chequered Plates, Skelp, GP Sheets, CR Sheets & Coils, H.R. Sheets and Coils, Wheels & Tyres, Axles, Sleepers, High Tensile wire, GI Wires, MS Wires, Wire rods other than MS Wire rods.	Other than those specified at A&B	Heavy melting scrap Stainless Steel Scrap No. 1 quality sheets, sheet cuttings & punchings Rejected casting Scrap, Defective slabs/blooms Defective billets/billet scrap, Scrapped and un-serviceable rails, Other re-rollable scrap.

In addition certain quantities of rolled products are exported under the bilateral Trade Plan with the East European countries. Some exports are also made to the neighbouring countries such as Nepal, Sikkim and Bhutan.

In 1972-73, export of Rails, Structurals, Rounds/bars GC Sheets have been reduced to negligible quantities and ingots and billets have not been exported at all.

Export of Pig Iron

The main item of export during 1972-73 was pig iron in which substantial surplus was available. With the commissioning of the first Blast Furnace at Bokaro, the overall availability of pig iron for export during the year substantially increased.

In June, 1972 HSL entered into a contract for supply of 500,000 tonnes of pig iron within a period of 12 months to the USSR. Supplies against this contract will include 250,000 tonnes from Bokaro Steel Plant. Between April, 1972 and January, 1973 a quantity of 1,12,000 tonnes of pig iron has been exported to Japan and subject to the availability of ships another 70,000 tonnes is likely to be exported in the remaining months making a total of 1,82,000 tonnes for 1972-73. Some quantities have also been exported to Singapore and Yugoslavia.

Export of Ferrous Scrap

The present policy regarding export of Scrap was announced last year after taking into consideration the recommendations of the Working Group of Ferrous Scrap, which submitted its report in November, 1971.

According to the assessment of this Group there is a surplus of Iron Scrap available for export in the following categories. These categories only are, therefore, allowed to be exported freely.

(i) Cast Iron Borings.

(ii) Iron Skull Scrap.

(iii) Broken/Semi-broken ingot mould and bottom plate scrap.

The following table gives the data on Scrap export during the year 1970-71, 1971-72 and 1972-73 :

Year	Quantity	Value (Rs. crores)
1970-71	260,905	6.95
1971-72	146,028	1.99
1972-73 (April—Sept. 72)	35,683	0.52

Category-wise export of iron and steel scrap during 1970-71, 1971-72 and 1972-73 is given at Appendix X.

The scrap export has been declining gradually with the step up of domestic demand. The Electric Furnace Industry is the main user of Ferrous Scrap. Government have already decided to step up steel production by manufacturing mild steel ingots/billets in electric furnaces. Keeping this position in view the export of Ferrous Scrap has to be restricted only to the categories which cannot be economically utilised within the country or for which it will take some more time to create effective facilities for utilisation.

The export of Ferrous Scrap is canalised through MSTC.

Export of Ferro Alloys

Ferro Alloy industry is in a developing stage in the country. Most of the Ferro Alloy items are imported. However, in some of the categories being produced in the country there is a surplus available. Only these items are permitted for export. Ferro Manganese and Ferro Chrome are freely exportable items at present. Other items, such as, Ferro Silicon, Silico Chrome etc., are allowed for export "on merits" depending upon indigenous availability, demand and surplus, if any. A statement showing category-wise export of Ferro Alloys during 1970-71, 1971-72 and 1972-73 (April-September) is given at Appendix XI.

Although there has been a decline in the export of iron and steel, there is now a growing emphasis on export of finished goods in which iron and steel constitutes a major 'input' and the added value is also greater. Every assistance is, therefore, being rendered to the exporters of engineering goods to step up their exports. In fact the scheme for supply of imported steel to the Units engaged in the manufacture of engineering goods for exports, to which reference has been made earlier in this chapter, is one of the important steps taken in this direction.

HINDUSTAN STEEL LIMITED

INVESTMENT

The total investment based on Government funds in the Company at the end of the year 1971-72 was Rs. 1,011.07 crores, of which equity amounts to Rs. 594.37 crores and long-term loans to Rs. 416.70 crores. In addition, a short-term three-year loan of Rs. 17 crores had been advanced by Government to the Company in 1971-72 to enable it to finance capital expenditure on existing capital schemes and to meet certain other liabilities.

The Memorandum and Articles of Association of the Company were amended in July, 1972, raising its authorised capital from Rs. 600 crores to Rs. 700 crores to facilitate release of further equity to finance a number of major capital schemes and for the expansion of townships.

During 1972-73, a sum of Rs. 16.48 crores was subscribed by Government as equity capital to enable the Company to finance capital expenditure on new capital schemes and township expansion. This raises the share capital of the Company to Rs. 610.85 crores as on 31st March, 1973. In addition, a short-term loan of Rs. 13.62 crores has been advanced for financing other capital expenditure.

Loan repayments aggregating to Rs. 37.64 crores are expected from the Company during the year 1972-73.

Production

The following table indicates production in the various units of the Company during the years 1971-72 and 1972-73 (provisional):—

(In '000 tonnes)

Plant/Unit	Ingot steel	Saleable steel
Bhilai Steel Plant		
1971-72	1953	1568
1972-73*	2108	1744
Durgapur Steel Plant		
1971-72	700	432
1972-73*	723	477
Rourkela Steel Plant		
1971-72	823	597
1972-73*	1177	765
Total (Bhilai, Durgapur and Rourkela)		
1971-72	3476	2598
1972-73*	4008	2986
Alloy Steels Plant, Durgapur		
1971-72	56	34
1972-73*	61	36
Fertilizer Plant, Rourkela	*Calcium Nitrate*	*Ammonium (25% N_2)*
1971-72	185	
1972-73*	196	

*Provisional

There has been an all-round improvement in production from all the units of the Company in 1972-73. The aggregate production from the three integrated steel plants exceeded last year's production by 5,32,000 tonnes of ingot steel and by 3,88,000 tonnes of saleable steel representing an increase of 15.3% and 14.9% respectively. Incidentally, this is the highest annual aggregate production from these plants so far.

The production from the Alloy Steels Plant at Durgapur was also marginally higher both in terms of ingot steel and finished steel. The production of CAN from the Fertilizer Plant at Rourkela exceeded last year's production by 11,000 tonnes and is the highest so far.

However, the production, though considerably better than last year, still fell short of the targets set in the beginning of the year, particularly in the Durgapur Steel Plant and the Alloy Steels Plant at Durgapur.

As mentioned in last year's report, the performance of coke even batteries in practically all the steel plants, both in the public and private sectors, had been found to be unsatisfactory, resulting in shortage of coke and gas. The special repairs and other measures taken have helped to improve the situation, particularly at Bhailai and, to a considerable extent, at Rourkela.

The production in Bhilai was also affected in the first quarter of this year on account of high absenteeism among key categories of employees in some of the Production Departments due to severe summer conditions. Inadequate availability of good quality stopper sleeves and shortage of mould trains, till about September, 1972. Unsatisfactory quality of refractories, leading to inadequate furnace availability and irregular supply of medium coking coal since September, 1972 were the other constraints in this plant.

The industrial relations situation in the Durgapur Steel Plant continued to be far from satisfactory. D.V.C. power restrictions and under frequency, equipment troubles, especially in the coke oven area, and short supply of coke oven gas were the other factors which affected production adversely.

In the Rourkela Steel Plant production suffered on account of occasional power failures and frequent power restrictions from the Orissa State Electricity Board, certain equipment troubles in the first half of the year, heavy capital repair work in the first quarter of the year and occasional labour troubles in certain important Departments.

The main factor affecting production in the Fertilizer Plant at Rourkela was the frequent power restrictions from the Orissa State Electricity Board which resulted in lower supply of nitrogen and coke oven gas to the plant.

In the Alloy Steels Plant, production was affected on account of unfavourable labour situation, D.V.C. power restrictions, equipment breakdowns and shortage of coke oven gas from the Durgapur Steel Plant.

During the last about two years, a number of remedial measures have been taken to overcome the various shortcomings and impediments standing in the way of improved production. Briefly these include: specialised repairs of coke ovens, use of alternative fuels to supplement gas availability, oil firing in certain furnaces to augment fuel resources, improved maintenance aimed at better equipment availability, speeding up of capital programmes required to correct existing imbalances in production facilities and planned procurement of spares, refractories and other essential materials. A three-tier joint consultative machinery has been set up at Durgapur for speedy settlement of industrial disputes and grievances and to enlist the cooperation of the workers in maximising production. A new rewards scheme has been introduced in the Rourkela Steel Plant to provide an additional incentive for increasing production progressively.

Government have since set up the Steel Authority of India Limited the Holding Company for steel and associated input industries, which was incorporated on the 24th January, 1973. The setting up this Company should also help considerably in maximising production of steel through effective supervision

and coordination, provision of specialised advisory services and vertical integration and coordination of the other sectors intimately connected with the steel industry in the role of major suppliers of inputs such as coking coal, iron ore, manganese etc.

However, by the very nature of the operations involved in an integrated steel plant, the full impact of all these measures will be felt only gradually and over a period of time. The substantial increase in production during the year under report over last year's production is an indication that these measures have already begun having their effect, at least in the Bhilai and Rourkela Steel Plants.

Despatches

The table below gives provisional figures of despatches during the year 1972-73 as against actuals during the preceding year:

(Qty: '000 tonnes)

Plant	Saleable Steel		Pig Iron	
	1971–72	1972–73*	1971–72	1972–73*
Bhilai	1559	1694	469	534
Durgapur	467	512	272	282
Rourkela	614	761	106	60
Total:	2640	2967	847	876
Alloy Steels Plant, Durgapur	28.6	32.9		
	CAN (25%)			
Fertilizer Plant, Rourkela.	1971-72	185		
	1972-73*	201		

*Provisional.

It will be noticed that despatches of steel and pig iron from the three mild steel plants of HSL were higher by 3,27,000 tonnes and 29,000 tonnes, respectively. The despatches from the Alloy Steel Plant and of CAN were also marginally higher.

The export earnings of HSL in terms of FOB value during 1972-73 were Rs. 16.87 crores as against Rs. 21.93 crores in 1971-72. The fall in exports is mainly due to the rising domestic demand and the restrictions imposed on the export of certain categories of steel. The statement below gives comparative figures of export of iron and steel material during 1971-72 and 1972-73 (provisional).

(Quantity in '000 tonnes)
(Value: FOB Rs. in crores)

Item	1971–72		1972–73*	
	Quantity	Value	Quantity	Value
1. Pig iron	218.1	7.44	388.8	12.74
2. Rounds/Flat/Wire Rods	0.5	0.02	...	...
3. Structurals	88.8	8.09	36.9	3.45
4. Rails	65.8	6.29	4.4	0.32
5. Galvanised Sheets	0.8	0.09	2.9	0.36
Total	374.0	21.93	433.0	16.87

*Provisional

It will be seen that the exports consists mainly of surplus pig iron, available in the country. The Company, however, has been able to further diversify the market for pig iron by booking orders in new markets, such as the USSR and the Philippines.

Imports

HSL plays an important role in the import of steel. Since the inception of the scheme of canalisation of steel items in 1970-71, HSL has been functioning as one of the two canalising agencies. At present, except for mild steel and high carbon steel semis, stainless steel sheets, CRGO sheets and heavy melting scrap which are canalised through MMTC, all other canalised items are imported through HSL. In addition, bulk imports are also made by HSL for the Steel Bank for exporters of engineering goods and under link deals. Sometimes, it also imports non-canalised items on behalf of certain consumers.

Working Results

The gross margin secured by the Company after meeting all expenditure but exclusive of the provisions for depreciation and interest on Government loans, amounted to Rs. 47.37 crores in 1971-72 as against Rs.88.16 crores in the preceding year. However, after making a provision of Rs. 23.56 crores for interest on Government loans and Rs. 68.66 crores on account of depreciation and some adjustments, the Company sustained a net loss of Rs. 44.85 crores as against a loss of Rs. 5.41 crores in 1970-71. The working results of the various units of the Company during 1970-71 and 1971-72 are indicated below:—

(Rs. in crores)

	1970-71	1971-72
Rourkela Steel Plant	(+) 10.198	(—) 6.887
Bhilai Steel Plant	(+) 11.043	(—) 4.298
Durgapur Steel Plant	(—) 20.401	(—)27.523
Fertilizer Plant, Rourkela	(—) 2.596	(—) 1.707
Alloy Steels Plant	(—) 3.833	(—) 5.235
Coal Washeries	(+) 0.020	(+) 1.171
Unrealised Profit on inter-plant transfer	(+) 0.163	(—) 0.367
Total	(—) 5.406	(—) 44.846

The cumulative loss of the Company from its inception upto 31st March, 1972, came to Rs. 223.08 crores.

The principal reasons for such a large loss was the inadequate utilization of capacity in general combined with the loss of production at Rourkela, mainly due to collapse of the roof of the steel melting shop in July, 1971. In addition, certain escalatory factors also had considerable impact on the financial performance of the Company. The increase in loss, over last year, was broadly due to the following factors:—

	(Rs. in Crores)
Loss in Income:	
1. Lower production at Rourkela mainly due to roof collapse.	16.8
2. Loss in exports due to drop in international market price for pig iron and lower quantum of total exports.	7.7
3. Adverse product-mix in Bhilai	3.9
Extra Expenditure:	
1. Escalation in prices of raw materials, spares, consumables	10.0
2. Increase in Wage Bill.	10.1
3. Additional maintenance and repair activities.	4.5
4. Arrears of electricity duty at Durgapur and Alloy Steels Plant in pursuance of the West Bengal Duty on Inter-State River Valley Act, 1971.	2.8
5. Additional Depreciation.	2.1

The adverse factors referred to above were to some extent offset by higher production at the Rourkela Fertilizer Plant, higher imports sales, better realisation from stockyard sales and lower interest payment.

Although considerable improvement in the working results is expected during the current financial year, the Company will still sustain a loss this year also, though the Rourkela and Bhilai Steel Plants are expected to make small profits. The loss will be due principally to shortfalls in production especially at Durgapur Steel Plant and the A.S.P., escalation in costs and the impact of the provisions of the payment of Bonus (Amendment) Act, 1972 which alone accounts for an additional expenditure of Rs. 6.29 crores.

Industrial Relations

The industrial relations situation has been satisfactory throughout the year in the Bhilai Steel Plant. At Rourkela Steel Plant, there have, however, been incidents of work stoppages, refusal to do items of normal work or to work overtime and slow down resulting in a loss of 17,626 manhours and loss of production valued at about Rs. 3.42 crores during the period April 72—February, 73. The situation at Durgapur continues to be far from satisfactory, although there has been some improvement in the overall situation as compared to the previous year. Apart from incidents of work stoppages, refusal to work, gheroas, demonstrations and slow down, there were two major work stoppages in August and December, which had a crippling effect on production throughout the plant. Nearly 2,61,487 manhours were lost during the period April 72—February, 73 on account of labour troubles and the value of production lost came to about Rs. 4.90 crores.

The situation at the Alloy Steels Plant, Durgapur, was equally unsatisfactory. The plant lost 2,37,102 manhours due to labour troubles during April 72—February, 73, the value of production lost being about Rs. 13.39 crores.

In a new initiative to restore normalcy and to ensure unimpeded production, a three-tier joint consultative machinery has been constituted in both the plants at Durgapur with the active assistance of the State Government. The machinery consists of floor level joint committees, a Plant Level Committee and a State Level Council at the apex. The last two bodies are already functioning. At Rourkela, in pursuance of a tripartite agreement, joint production committees have been set up with a view to securing the co-operation of workers in increasing production and productivity.

The Joint Negotiating Committee and the Standardisation Committee continued to function at the industry level. An agreed draft job evaluation manual for technical jobs has been drawn up and is presently undergoing experimental trial. A number of wage anomalies have also been resolved. The Committee is

also seized of the question of abolition of contract labour in the steel industry and of bringing about uniformity in the matter of certain amenities like retirement age and medical facilities. At the instance of the Minister of Steel and Mines, the Committee has agreed to discuss production problems at the steel plants and to make suggestions for improving production as well as for meeting the situation arising out of work stoppages etc. Recently, the Committee has finalised the targets of production for each of the steel plants for 1973-74 fixed on the basis of joint discussions between the management and the workers at the plant level.

Capital Schemes

The work on the implementation of new capital schemes included in the Fourth Five Year Plan continued to make progress. The Sintering Plant is also likely to be commissioned by the end of 1974 as to synchronise with the completion of Dalli Mines mechanisation. While the Detailed Project Report for the expansion of Bhilai Steel Plant from 2.5 to about 4.00 million ingot tonnes is scheduled to be completed by June, 1973, preliminary work on this major expansion has already been taken in hand. The Detailed Project Report for the refractory plant to be installed at Bhilai has been received and is presently under the examination of the main collaborator, M/s. Belpahar Refractories Limited. The work on the installation of an additional coke oven battery at Bhilai has also been taken up and the battery is expected to be commissioned by the end of 1974.

At Rourkela Steel Plant, the installation of an additional half coke oven battery has already been taken up. The feasibility report/proposals in respect of a number of new schemes such as Double Cold-Rolled Reduced Tin Plate facilities, Spirally-Welded Pipe Plant, Tin Free Steel and the installation of Slag Granulation Plant, and the project for the manufacture of Cold Rolled Grain-oriented sheets are at various stages of consideration.

The work on the installation of four additional soaking pits at Durgapur Steel Plant is in progress and is expected to be completed by December, 1973. The installation of another half coke oven battery has been approved by the Company and the preliminary work in this regard is in progress.

Although the expansion of Alloy Steels Plant, Durgapur from its present capacity of 1,00,000 tonnes to 3,00,000 tonnes of ingot steel has been approved, the question of the product-mix is under re-examination by Government.

Central Engineering and Design Bureau

The Central Engineering and Design Bureau continued to function as Techanical Advisers to the Department of Steel on matters connected with the iron and steel industry. The Bureau also continues to be the principal consultant for the expansion of Bokaro Steel Plant from the first stage of 1.7 to 4.0 million ingot tonnes. It is now examining the feasibility of further expansion of Bhilai upto about 7 million ingot tonnes and of Durgapur beyond its present capacity. It is also acting as consultants to the Mysore Iron and Steel Limited, Bhadravati, for optimisation of their plant's performance. The Bharat Aluminium Company have appointed the Bureau as their prime Indian Consultant for the design and engineering of the Smelter and the Fabrication Complex of the Korba Aluminium Project. It has prepared a number of feasibility reports and detailed project reports, including a techno-economic feasibility report for the Vijayanagar Steel Plant and for a Special Alloy Steels Plant at Kanpur. The Bureau has also been entrusted with the detailed engineering work connected with the latter.

Having regard to its present competence, the assignments which it has already taken up and its emerging role in the context of future expansion of the Steel Industry it has been decided to constitute the Bureau into a separate subsidiary company of the Steel Authority of India Limited. The new company has been incorporated under the name of "Metallurgical and Engineering Consultants (India) Limited" with an authorised capital of Rs. 4 crores.

Hindustan Steel Limited will be one of the subsidiaries of Steel Authority of India Limited. Keeping in mind the purpose for which the Steel Authority of India has been set up, it would be necessary, at an early opportunity, to take up the question of re-organization of Hindustan Steel Limited.

In accordance with the Directive issued to the Public Undertakings for reservation of posts in them for Scheduled Castes and Scheduled Tribes, the staff position in HSL as on 1-1-1972 is as under:—

Classification of posts	Total No. of employees as on 1.1.72	Number of	
		S/Castes	S/Tribes
Class I	7070	19	9
Class II	72	...	...
Class III	71763	2058	1873
Class IV (excluding Sweepers)	35028	5190	4215
Class IV (Sweepers)	2847	2464	114
	116780	9731	6211

MYSORE IRON AND STEEL LIMITED, BHADRAVATI (MYSORE)

The Mysore Iron & Steel Works which was started in 1918 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.

Mysore Iron & Steel Limited was incorporated under the Indian Companies Act, 1956, on April 1, 1962. It is a joint undertaking of the Government of Mysore and the Government of India, the Govt. of Mysore holding 60% of the paid up capital of Rs. 33 crores and the Government of India holding the remaining 40%.

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

Steel Sections (Mild Steel)	38,400
Alloy and Special Steels	77,000
pig Iron	2,09,300
Blast furnace slag cement	84,000
Grey Iron Castings	15,400
Steel Castings	5,400
Ferro Silicon	20,000
Ferro Manganese	2,640
Silico-Manganese or	1,440 or
Ferro-Chrome	1,560
Cast Iron Spun pipes	15,200
Cast Iron railway sleepers	12,000
Fireclay refractory Bricks	9,600

At the request of the Government of Mysore, the Government of India agreed to convert, with effect from the 1st April, 1971, Rs. 11.232 crores advanced as direct loans to the Company into equity, thereby increasing the Government of India's contribution to the paid up capital of the Company from about 10% to 40%. This step was taken to bring the debt equity ratio to 1 : 1

and afford a relief of about Rs. 75 lakhs annually in interest charges. The working of the company showed a substantial improvement in 1971-72 when a profit of Rs. 25.58 lakhs was made against the loss of Rs. 176.91 lakhs during 1970-71. The accumulated loss carried forward was reduced from Rs. 8.89 crores as on 31-3-71 to Rs. 8.65 crores as on 31-3-72.

The actual production during 1971-72, during 1972-73 (upto the end of February, 1973) and the targets for 1973-74 are as under :

(in tonnes)

Product	Production		Target for 1973-74
	1971-72	1972-73 (upto Feb. 73)	
Mild Steel Saleable	44,056	51,159	50,000
Special Steels	51,280	38,458	65,000
Ferro Silicon	20,521	11,207	16,000
Cement	94,406	88,996	100,000
Castings	11,894	11,532	18,200

For the first time in India, the plant has produced Ferro Silicon by using Mill Scale in place of turnings and borings, a technique entirely developed by the plant's Engineers. This is likely to result in savings to the Company during the coming years.

In collaboration with Tor-Isget Steel Corporation, production of Tor Steel has been introduced in the Company. This is likely to improve the profitability. The production during 1972-73 upto the end of January, 1973, has been 7381 tonnes.

The Task Force on MISL has so far met four times (including three meetings in 1971-72) under the Chairmanship of the Steel Secretary to review the performance of the Company, identify bottlenecks and suggest remedial measures.

The Company is working on a scheme for installation of a Forge Plant in the Company to manufacture certain high speed

and high profitable types of special steels. The cost of the scheme is estimated at Rs. 8.8 crores with a foreign exchange content of Rs. 2.6 crores. This scheme is under examination by Government.

The Company is also formulating a scheme for the installation of certain balancing facilities to optimise production. The scheme is being drawn up in consultation with the Central Engineering and Design Bureau. The Company has also initiated action for drawing up a preliminary study for expansion during the Fifth Plan.

STEEL INDUSTRY IN THE PRIVATE SECTOR

Tata Iron and Steel Company :

Tata Iron and Steel Company Limited owns, in addition to the integrated steel plant at Jamshedpur, captive collieries at Sijua and Jamadoba and an iron ore mine at Noamundi. The Steel Plant at Jamshedpur is the oldest integrated steel plant in the country. It commenced production in 1911 and its present installed capacity is 2 million tonnes 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, skelp, rails, structurals, plates and sheets.

Against the installed capacity of 2 million tonnes of steel ingots, production in 1971-72 was 1.708 million tonnes ingots. During 1972-73, the production has amounted to 1.690 million tonnes. In terms of saleable steel, the production during 1971-72 was 1.387 million tonnes. During 1972-73, the production has been 1.458 million tonnes.

The company is implementing a scheme of replacement and modernisation including rebuilding the old Coke Oven Batteries, replacement of Boilers and renovation of Blast Furnace and Colliery expansion. The total expenditure on the scheme during the 5 year period from 1972-73 to 1976-77 is estimated at Rs. 103 crores. The progress on some of these schemes has been as under :

(i) **Coke Oven Rebuilding Programme :**

A new battery of 54 coke ovens is expected to be completed in March, 1973. Another scheme for replacement of the old

coke oven battery No. 3 is under progress and is expected to be completed by March, 1974. Two more coke oven batteries are expected to be completed during the 5 year period from 1972-73.

(ii) **Beehive ovens at Sijua :**

In order to meet the shortfall of coke during rebuilding programme of the coke oven batteries, the Company has already installed 176 Beehive Ovens at Sijua which went into regular operation from December, 1972. Another set of 176 Beehive ovens at Sijua is expected to be commissioned by the middle of 1973.

(iii) **Replacement of old boilers by two new boilers :**

Both the boilers are expected to be commissioned during 1973.

(iv) **Pelletising Plant at Noamundi :**

Two units of the Plant have gone into regular production during the current year.

The production during 1973-74 is expected to be 1.9 million tonnes of steel ingots and saleable steel production about 1.5 million tonnes.

Government have approved the preparation of a feasibility study by Nippon Steel of Japan with a view to determining how best to increase the capacity of the steel plant of Tata Iron and Steel Company Limited, from its existing level of 2 million tonnes of ingots a year to 4 million tonnes or more and achieve this most economically and expeditiously. Further details of the expansion scheme will be examined on receipt of the feasibility study.

INDIAN IRON AND STEEL COMPANY LIMITED

The Indian Iron & Steel Co. Ltd. owns, in addition to the integrated steel works at Burnpur an Iron Foundry at Kulti which is also making Spun Pipes, Captive Collieries at Chasnalla, Jitpur and Ramnagar near Burnpur and an Iron Ore Mine at Gua. The rated capacity of the steel plant is 1 million tonnes of ingot steel corresponding to 0.8 million tonnes of saleable steel. The various items manufactured by IISCO include billets, bars, rods, rails, structurals and sheets.

The Company's colliery at Chasnalla is being expanded at a cost of about Rs. 35 crores in order to supply the coal requirements of the Company amounting to about 66,000 tonnes per day. A ropeway is also being laid from Chasnalla to Burnpur for the transport of coal. This scheme is being financed by a loan from the World Bank. Large scale production from the colliery is expected by 1974-75.

Against the installed capacity of 1 million tonnes of steel ingots, production in 1971-72 amounted to about 617,000 tonnes and the production during 1972-73 has been 431,157 tonnes. In terms of saleable steel, the production during 1971-72 was 493,000 tonnes and during 1972-73 it has been 351,024 tonnes

Government had been for some time viewing with great concern the progressive decline in the production of the steel plant of the company. Against the rated capacity of the plant of 1 million tonnes of steel ingots, the production which was 1,027,000 tonnes in 1963-64 had fallen to 617,000 in 1971-72 and indications were that the performance during 1972-73 would be

substantially worse than in 1971-72. The actual production was 34,500 tonnes in April, 33,500 tonnes in May, and an all time low of 23,100 tonnes in June. Thus there was a continuing and precipitous fall in production. It was apparent that this fall in production was chiefly due to a deterioration in the condition of plant and equipment which was the direct result of :—

(a) ineffective and unresponsive management at the top;

(b) neglect of rehabilitation programmes in the past; and

(c) inadequacy of the replacement, repair and maintenance programmes.

Steel production being an area which is crucial to development, Government considered it inappropriate that the management of an important plant in this field should continue in the hands of a small group of persons who had not been able to ensure efficient management. The all-time low production during the month of June, 1972 was indicative of the alarming technical and financial health of the Plant and the imminent possibility of a breakdown and it appeared to Government that a stage had been reached where, unless Government intervened immediately, the Plant's condition would deteriorate to a point where revival would be very difficult.

Government, therefore, decided that the management of the Company should be taken over and accordingly the management was taken over with effect from the 14th July, 1972 by the issue of an Ordinance. The Ordinance was replaced by the Indian Iron & Steel Company (Taking over of Management) Act, 1972 which received the assent of the President on the 3rd September, 1972. The take over is for a period of two years from the 14th July, 1972.

After the take over, the day-to-day administration of the Company is in the hands of a Custodian appointed by the Government.

After the take over of management, the condition of the plant was analysed in detail and a rehabilitation programme was drawn up in September, 1972 envisaging a total expenditure of Rs. 45.9 crores over a period of 3 years to enable the plant to

achieve its rated capacity of 1 million tonnes of ingots a year by 1975-76. The details of the scheme as also the method of financing it are under scrutiny. Pending the finalisation of negotiations with financial Institutions for financing the scheme, the Company has obtained bridging finance from the State Bank of India and purchase of equipment worth Rs. 13 crores has been committed so far for repair/replacement of equipment.

As a result of various short term measures taken to improve production in the plant like making available supplies of coal Tar, Coke, Furnace Oil, recommissioning of two coke ovens and necessary repairs to other coke ovens there has been improvement in production as the following figures will show :—

Month	Production (Tonnes)	
	Ingots	Saleable steel
April, 1972	34,470	33,022
May, 1972	33,495	27,150
June, 1972	23,064	9,015
July, 1972	23,790	16,899
(1—14)	10,024	6,409
(15—31)	13,766	10,490
August, 1972	39,219	28,885
September, 1972	40,082	33,274
October, 1972	42,860	39,234
November, 1972	39,009	37,434
December, 1972	44,089	36,066
January, 1973	31,544	22,425
February, 1973	35,710	29,446
March, 1973	43,825	38,174
Total 1972-73	431,157	351,024

During 1973-74, production is expected to be of the order of 650,000 tonnes of steel ingots equivalent to a saleable steel production of 511,000 tonnes.

Rerolling Industry :

The steel Rerolling In[illegible]

structurals, etc. Rerolling Mills are categorised as "billet-based" or "scrap-based", depending upon the primary raw-material which they process. The Technical Committee appointed by the Government had in its Report (July, 1966) assessed the annual capacity of billet rerollers at 2.78 million tonnes, of scrap rerollers at 0.73 million tonnes, and of other units at 1.20 million tonnes.

The utilization of capacity in the rerolling industry depends on demand and, more particularly, presently, on availability of raw material, billets as well as scrap. During 1972-73 availability of billets for distribution from B.R.C.'s scheme was estimated at 0.74 million tonnes against which actual despatches accounted for 0.59 million tonnes with an import of approx. 80,000 tonnes.

In view of the existence of a large rerolling capacity, and considerable under-utilisation of the capacity due to insufficient availability of billets, Government have not been encouraging creation of additional capacity.

However in the light of the increased need for augmenting billet supply to feed the rerolling industry, Government have been encouraging the setting up of electric furnace units to produce billets from scrap. 22 units with an aggregate capacity of 1.285 million tonnes have been approved since the introduction of liberalised Industrial Licensing Policy and seven of these units are already in production. When the remaining schemes, now under implementation, go on stream it is expected that the rerolling industry will be better served in so far as its needs for raw material are concerned.

Need was also felt for an effective coordinating agency to collect and process the scrap-arisings which constitute the main feedstock for the electric-furnaces. It has been, therefore decided that the MSTC on its reorganisation will organise a number of centres to collect and process scrap by installing scrap processing machinery at appropriate places in the country. MSTC by pro[illegible]

to enlarge and diversify its activities into other fields such as regulating scrap collection and distribution.

Pig-Iron/Sponge-Iron

In view of the excess availability of pig-iron from the main steel plants, no fresh capacity for manufacture of pig iron was sanctioned in private sector.

Sponge-iron or alternatively metallised pellets having an iron content of over 90 per cent can provide an alternative source of raw material for electric steel making capacity. To meet the shortage of scrap and the need to utilise iron ore and non-coking coal available in large quantities in the country, Government are keen to develope sponge-iron manufacturing capacity based on solid reductant.

Sponge-iron production is a relatively new technology. Whereas the economic viability of the process based on natural gas, where such gas is available, has been established, viability of commercial production based on use of solid reductant such as coal remains doubtful. A considerable amount of developmental work the world over, however, continues.

It was also considered that this industry could not be left entirely to the initiative and enterprise of the private sector and may have to be developed in either public or Joint-Sector. Keeping in view the present/future requirements, letters of intent to 6 State Government undertakings for an aggregate capacity of 0.93 million tonnes were granted. For the commercial exploitation and development of sponge iron technology, pilot plant facilities are also being created at the National Metallurgical Laboratory at Jamshedpur. A proposal received from Andhra Pradesh Industrial Development Corporation to set up a demonstration-cum-commercial plant to manufacture sponge iron with UNDP assistance is being processed.

Wire Drawing Industry

There are at present 15 comparatively large units, licensed under the Industries (Development and Regulation) Act, 1951,

engaged in the manufacture of different types of steel wires. The estimated production in 1972-73 is likely to be 233,000 tonnes which shows a proportionate increase against the production of 224,000 tonnes in 1971-72 and 135,000 tonnes in 1970-71. These units, by and large, manufacture mild steel wires. Since the introduction of the liberalised industrial licensing policy in February, 1970, a number of firms have been issued Industrial Licences/Letters of Intent for the manufacture of wires thinner than 18 G and other special wires to cater to the needs of engineering industries. The availability of high carbon wire-rods from indigenous sources is still short of requirements. To the extent necessary, imports of special categories of wire rods, and to a small extent wires are being permitted.

Wire Rods

There is a shortage of wire-rods, mild steel as well as in high-carbon and other special categories, particularly the latter. This puts a limitation upon the utilisation of capacity in the Wire Drawing Industry. Mukand Iron and Steel Works, Bombay, and Bhilai Steel Plant are principal producers of high carbon wire rods. Production of high carbon wire rods at Bhilai showed a sharp decline, whereas in the case of Mukand there was a short interruption and also some reduction due to power cut. There was thus substantial shortfall. It is, however, expected that the position will improve with the commissioning of Mukand's Third furnace.

Ferro Alloys

Ferro Alloys are vital to the growth of Alloy and Special Steel Industry. Adequate capacity has already been created/sanctioned for ferro-manganese, ferro-silicon, ferro-tungsten, ferro-chrome, ferro-molybdenum and ferro-vanadium. There are 14 units holding Industrial Licences with an installed capacity of 340,000 lakh tonnes for various ferro alloys and 1 more unit was sanctioned during the year. Ferro manganese production during 1972-73 is likely to be 1,68,000 tonnes as compared to

1,51,000 tonnes during 1971-72. Ferro-silicon production is expected to maintain a level of 30/32,000 tonnes while in case of ferro-chrome, it may be about 4000 tonnes. Against the export, in 1971-72, of 18,000 tonnes of ferro manganese and 3,800 tonnes of ferro chrome, exports during 1972-73 (April-June) were already 31,000 tonnes. Fero vannadium, ferro-tungsten and ferro molybdenum are produced from imported concentrates.

The scheme of Industrial Development Corporation of Orissa and of another private entrepreneur to set up units for the manufacture of ferro-vanadium have not yet made substantial progress.

Alloy Steels

The present installed capacity in the private sector is about 100,000 tonnes per annum. Messrs. Mahindra Ugine Steel Company, Guest Keen Williams and Globe Steels have installed capacity of 30,000 tonnes, 45,000 tonnes and 20,000 tonnes per annum respectively. Additional capacity of about 40,000 tonnes per annum is under installation by Messrs Bihar Alloy Steels Ltd. Some of the units also hold either industrial licences or Letters of Intent for installation of new/additional capacity for the manufacture of alloy steels. Mahindra Ugine has submitted a proposal for expansion of their capacity which is under examination.

Cold Rolled Strips

Strips find a multitude of uses in Engineering industries for the manufacture of wheel rims, bicycle brackets, hacksaw-blades, type-writers, automobile industry, etc. In the context of these end-uses the availability of cold rolled strips can considerably help small employment-oriented units. The limitation, however, on production of cold-rolled strips arises from availability of the basic raw materials which is skelp or hot rolled strips. To supplement indigenous availability, import of skelp/hot rolled strips is being allowed for these units, and production is likely to improve. Sufficient capacity for these strips has also been approved keeping in view the future demand.

Tinplates

The present installed capacity for tinplates in the private sector is 130,000 tonnes, the units being the Tinplate Company of India Ltd. and the K. R. Steel Union. The latter processes imported tinmill black plate.

The Tinplate Co. of India Ltd. were sanctioned an expansion of their capacity from 70,000 tonnes to 1,60,000 tonnes. The additional capacity of 90,000 tonnes per annum will be for electrolytic tinplates. The foreign collaboration and import of plant and equipment have been approved. A significant feature of this expansion will be production in India for first time of tin-free steel which will eliminate the need for import of tin, a costly raw-material entailing foreign exchange expenditure. The scheme is likely to be commissioned during 1975-76. After commissioning their electrolytic line, production of hot dip tinplates is to be progressively reduced.

BOKARO STEEL LIMITED

Bokaro, the fourth integrated Steel Plant in the Public Sector, is the biggest single industrial undertaking so far undertaken in this country both in terms of magnitude and investment. This Plant accounts for Rs. 683 crores out of the total provision of 1,053 crores for steel development in the Fourth Plan. As on the 28th February, 1973, the total investment in the project was Rs. 793.46 crores—Rs. 600 crores equity capital ; and Rs. 193.46 crores Government loans.

The work on the Plant commenced in October 1967. The detailed Project Report prepared by the Soviet Consultants in 1965 envisaged Bokaro as a 4 million tonnes Plant with an intermediate construction stage of 1.7 million tonnes. A very large portion of work required for 4 million tonnes plant is, therefore, incorporated in the first stage itself. Approximately 84 per cent of the earth work, 74 per cent of concreting, 73 per cent of structural steel work and 64 per cent of equipment and erection for the 4 million tonnes plant would be completed in the construction of the first stage.

Construction Schedule

According to the present schedule, the erection of the different units of Stage I was to be completed by March, 1973. The commissioning of the units would take another 3 to 6 months after erection. This schedule provides a period of about 5-1/2 years from the commencement of work in October, 1967 for completing Stage I. This schedule is considered extremely tight both by Soviet and Indian experts, having regard to the fact that a substantial portion of the work required for the 4 million tonnes plant would be completed in Stage I. The delays in supplies of equipment and materials from indigenous sources have seriously affected the construction programme.

Nevertheless, all efforts are being made by Bokaro Steel Ltd. and other concerned agencies to complete the construction work as early as possible.

Progress of construction of Stage I

The quantum of work involved in the first stage of Bokaro is far greater than what was required to be done in any of the earlier plants. For example, the volume of concreting in Bokaro Stage I is about 150 per cent of the concreting done in the first stage of Bhilai and Durgapur Steel Plants taken together. Likewise, the quantity of steel structures required is about 140 per cent of the quantity involved in the First Stage of Bhilai and Durgapur. The quantity of equipment is also more than in these two plants put together.

For the First Stage of the Plant, 1.82 million cbm. of concreting work has been done by the end of March, 1973. This represents 96.8 per cent of the total, 97.3 per cent of underground communications and 65.6 per cent of railway tracks have been completed upto the 31st March, 1973. Against a total of 264,000 tonnes, 204,000 tonnes (77.4 per cent) of steel structures have been erected. In mechanical equipment, out of a total of 238,440 tonnes, 115,450 tonnes (48 per cent) have been erected upto the end of March, 1973. The progress in electrical equipment erection is 19,380 tonnes against a total of 44,000 tonnes. The progress of work on the Stage I upto the end of March, 1973 is indicated below :—

(a) **Civil Works**

Item of work	Unit	Total quantity	Progress	Percentage to total
Excavation . .	Cbm.	12,794,612	13,382,354	104.6
Concreting . .	Cbm.	1,883,715	1,820,513	96.6
Underground communications .	Metres	286,906	279,345	97.3
Permanent railway tracks . .	Metres	131,301	86,149	65.6

(b) Supply of steel structures

(Qty. in tonnes)

Source	Total quantity	Quantity supplied	Percentage to total
HSCL	163,205	159,747	97.8
HEC	28,780	27,476	95.5
USSR	16,476	16,036	97.3
BSL	55,403	50,428	91.0
TOTAL	263,864	253,687	

The rate of supply of structurals improved substantially during the year largely because of the increased availability of steel. 95.4 per cent of the total quantity has so far been supplied.

(c) Erection of Steel Structures

(Qty. in tonnes)

	Total quantity	Quantity erected	Percentage to total
Technological Structures	84,183	62,009	73.6
Building Structures	179,661	142,168	79.0
TOTAL	263,864	204,177	

(d) Supply of Equipments

A total quantity of 275,593 tonnes of equipments are required for Stage I of the Plant. The sources of supply, the targetted supplies and actual receipts at Bokaro till the end of March, 1973 are shown below:—

(Qty. in tonnes)

Source	Total Quantity	Targetted Supplies	Actual Receipt
USSR	103,665	103,665	102,34
Czechoslovakia	1,400	1,400	1,400
HEC	72,242	72,242	60,666
MAMC	10,521	10,521	9,522
Other Public Sector Sources	9,367	9,367	7,014
Private Sector Sources	79,798	60,865	48,520
TOTAL	276,993	258,060	229,464

About 82.8 per cent of the equipment required has already been received against the target of 93.1 per cent. Although there has been some improvement in the supplies from indigenous sources, they still remain considerably behind schedule. There was delay in the supply of heavy cranes required for erection in the steel melting shop and the hot rolling mills.

(e) Erection of equipment

A total of 134,828 tonnes of equipment comprising 115,449 tonnes of mechanical equipment and 19,379 tonnes of electrical equipment had been erected till the 31st March, 1973. Equipment erection in the steel melting shop and the hot rolling mills is now being given concentrated attention so as to commission these units as quickly as possible.

(f) Supply and erection of refractories

A total quantity of 2,11,193 tonnes (1,29,943 indigenous and 81,250 imported) of refractories has been ordered for Stage I. The position with regard to supplies has been improved considerably during the last two years as a result of various measures taken by Bokaro Steel Ltd. Till the end of March, 1973, 104,392 tonnes have been received from indigenous sources and 69,096 tonnes against imports. 77,542 tonnes of refractories have been erected up to the end of March, 1973. After completing the refractory work for the first blast furnace complex, attention was concentrated on the second coke oven battery and the second blast furnace. The lining work in second battery has since been completed and heating up of the battery is due to commence shortly. Refractory work in the third coke oven battery, the stoves of the second blast furnace and the soaking pits is now in progress.

The notable achievement of the year has been the commissioning of the first blast furnace complex on October 3, 1972. The rated capacity of the Blast Furnace is 2,640 tonnes of hot metal per day. Since the commissioning on October 3, 1972

up to the end of March, 1973 the furnace has produced about 333,095 tonnes of hot metal which in terms of pig iron amounts to 307,633 tonnes. The month-wise production of pig iron from October, 1972 is shown below:

Month	Tonnes
October, 1972	25,636
November, 1972	37,237
December, 1972	50,084
January, 1973	62,812
February, 1973	64,388
March, 1973	67,476
TOTAL	307,633

On January 26,1973, the furnace produced 3,005 tonnes of hot metal, which represents 114 per cent of the rated capacity. Since then it has exceeded rated capacity many times. The coke rate has been on the average about 667 Kg. per tonne of hot metal against 744 Kg. envisaged in the DPR ; on the 26th January, 1973 the coke rate was as low as 584 Kg., which is the lowest ever attained in this country.

Another noteworthy feature in the operation of the furnace has been the very high intake of sinter. The furnace is designed to use a maximum of 70 per cent sinter in the burden ; however at times, as much as 90 per cent of the burden consisted of super-fluxed sinter. This compares favourably with the best practices obtaining in more developed countries.

The estimated production of saleable pig iron during 1972-73 was 297,000 tonnes. As the steel making capacity is not yet ready, this entire quantity will be sold as pig iron. BSL have already got export orders for about 310,000 tonnes of pig iron, to be met during 1973 and 1974. Apart from pig iron, crude tar and ammonium sulphate which are produced in the By-product Plant are being sold.

As happens in any plant in the early years of production when it does not produce the full range of products planned for, Bokaro's production in 1972-73 was confined to 307,633 tonnes

of pig iron. This limitation and the investments already gone into the plant are reflected in the negative position in the profit and loss account. After providing for depreciation of Rs. 5.11 crores, required under the law, there is a loss of Rs. 10.70 crores. It is expected that from 1975-76 onwards the company will generate a surplus.

Raw Materials: The annual requirement of the major raw-materials for the first Stage of the plant are:

	Million tonnes
(i) Iron Ore—Lump	1.24
Fines	2.93
(ii) Coal	3.4
(iii) Lime Stone—flux grade	1.15
SMS grade	0.44

The Government had appointed a Committee in October, 1971 to review the arrangements for supply of iron ore and coal to Bokaro Steel Plant. The Committee submitted its report on iron ore in October, 1972. The main conclusion/recommendations of the Committee are indicated below :

(a) The Kiriburu mines would be able to meet the requirement of lump ore but there would be substantial shortfall in the supply of fines even after the expansion of the mine was completed ;

(b) The Meghahataburu deposits should be developed on priority, but without lowering the standard of prospecting, in order to meet the requirement of Bokaro Steel Plant at 5.5 million tonnes stage and thereafter;

(c) Till supplies from Meghahataburu commence, the shortfall in supplies of fines from Kiriburu should be made good from mines in the Barajamda area ;

(d) Existing railway facilities at certain points in the Barajamda area should be strengthened and additional facilities provided in order to meet the requirements of movement of ore to Bokaro.

The report of the Committee has been considered by the Government and action for providing the necessary railway facilities in the Barajamda area has already been initiated. Bokaro is now getting washed fines from Noamundi which is being supplemented by additional supplies from Bolani.

The coal requirements are being met from the washeries at Dugda and Kargali. This will be supplemented by supplies from Kathara washery.

Bokaro is developing its own source of flux grade limestone at Bhavanathpur in Bihar. Recently the lease of the adjacent deposits has also been given by the State Government to Bokaro Steel Ltd. The requirements of the first blast furnace are already being met from the Bhavanathpur Mines. Steel melting shop grade limestone will be supplied from the semi-mechanised mine which is being developed by BSL at Kuteshwar.

Expansion of the Plant

In order to meet the increased demand for steel, it has been decided to accelerate the expansion of Bokaro to 4 million tonnes in such a manner that a capacity of 2.5 million tonnes would be installed by the end of the Fourth Plan Period. This limited expansion has been taken up as a "crash" programme.

Bokaro Steel Limited had commissioned the CEDB to prepare a Feasibility Report for expansion of the Steel Plant beyond the 4 million tonnes stage in order to utilise fully the in-built surplus capacity of the primary mills. The Feasibility Report prepared by the Consultants indicates that with some balancing facilities, it would be possible to increase the capacity of the Plant to 4.75 million tonnes of ingot steel, at an estimated extra cost of about Rs. 58 crores. The CEDB have been asked to prepare a Detailed Project Report for this expansion. Apart from increasing the availability of steel, this expansion will improve the economic viability of the plant.

The possibility of further expansion has been engaging Government's attention for some time. The matter was recently discussed in great detail with the Soviet Government and the

concerned Soviet agencies. It was recognised by the experts on both sides that the capacity of the steel plant could be expanded upto 10 million tonnes per annum at the existing site. The preparation of a feasibilty study for this expansion will be undertaken very soon.

Progress in expansion work

The work of expansion of the plant from 1.7 million tonnes to 4 million tonnes has been progressing rapidly. The Central Engineering and Design Bureau are the principal consultants for this expansion for the role performed by the Soviet consultants in the first Stage, and M/s. M. N. Dastur & Co. have similar consultancy functions as during the first Stage. Under the expansion programme, three coke oven batteries and two blast furnaces similar to those installed in the first Stage will be added. One more 100 tonne converter will be added in the Steel Melting Shop No. I where 4 such converters are being put up in the first Stage. In addition, a second steel melting shop consisting of two 300 tonne converters will also be put up. This is the most critical unit in the expansion In order to produce cold rolled sheets of a thickness of 0.15 mm for tin plating, it has been decided to instal a 5-Stand 1400 mm tandem mill in the place of the 4-Stand 1700 mm mill provided in the Soviet DPR. The Soviet Union has agreed to supply the 5-Stand cold rolling mill and the finishing lines during 1975-76. The expansion of Bokaro to 4 MT ingot capacity per annum, excluding the 5-Stand mill complex, is expected to be commissioned by the end of 1976-77 ; the erection of the cold rolling mill may be completed in 1977-78.

HSCL who are executing the civil engineering work for the expansion have already done about 1,090,100 cubic metres of earth work and 65,541 cubic metres of concreting. Out of about 137,500 tonnes of equipment required for the expansion, about 120,500 tonnes would be procured indigenously—86,500 tonnes from public sector undertakings and 34,000 tonnes from others. Orders for most of the equipment required have already been placed. Out of 108,000 tonnes of steel structures required for Stage II, 82,000 tonnes have been ordered on HSCL, 17,000 tonnes on HEC and the balance of 9,000 tonnes have been

planned on HSL's structural shop. Likewise orders for the refractories required for the expansion have already been placed and sizeable supplies have been made.

The 2.5 million tonnes crash programme is scheduled to be completed by March, 1974. This programme envisages accelerated installation of one coke oven battery, the 5th 100 tonne converter, and other auxiliary facilities included in the second Stage.

Project Cost and Expenditure

The Government had sanctioned in November, 1966, an estimate amounting to Rs. 620 crores for the construction of the First Stage of the Plant. The off-site facilities, namely, township, mines and quarries, the Tenu-Bokaro Canal and the Garga Dam were estimated to cost an additional Rs. 51 crores. The estimate for plant proper was revised in January 1972 to Rs. 708 crores—an increase of Rs. 88 crores. This revision was necessitated by the increase in cost of indigenous equipment and the escalation in wages and costs of materials like steel and cement. The increase on account of indigenous supplies alone amounted to about Rs. 64 crores. The increase on account of escalation in wages and cost of materials was Rs. 20 crores. Bokaro Steel Limited has recently submitted to the Government a further revised estimate amounting to Rs. 757 crores for plant proper and Rs. 69 crores for off-site facilities making a total of Rs. 826 crores. The revised estimate for plant proper takes into account further increases in the prices of equipment, erection costs, engineering and supervision, customs duty and escalation in cost of materials and in wages. The estimate for off-site facilities has now gone up primarily because of increased provision on the township, provision for the Meralgram-Bhavanathpur Railway line and increase in cost of the canal. This revised estimate is under consideration of the Government.

Based on the Soviet Project Report of 1965, BSL have recently submitted an estimate of Rs. 513.35 crores for the expansion to 4 million tonnes. This estimate also provides for

some enlargement of off-site facilities. The estimate is presently under consideration of the Government.

The total expenditure on Stage I of Bokaro Steel Plant upto the 31st March, 1972 was Rs. 614.64 crores. The expenditure on the expansion was Rs. 36.45 crores. The revised budget provision for 1972-73 for the Plant as a whole is Rs. 140 crores. For the year 1973-74, a budget provision of Rs. 115 crores has been made which includes Rs. 53 crores for Stage II.

Problems in construction and steps taken to solve them

Although substantial progress has been made in the construction work over the last three years, there are still areas where shortfalls are serious. In an effort to improve the pace of work in these areas, both BSL and HSCL have recruited a large number of additional workers. In zones where the contractors had seriously defaulted or where they had voluntarily surrendered work, departmental-erection has been organised by BSL and other public sector undertakings involved. HSCL alone has undertaken erection of about 120,000 tonnes of equipment and pipe lines in the blast furnaces, power plant, steel melting shop and rolling mills. During January 1973, a total of 16,340 tonnes of structures equipment and refractories were erected, which is the highest rate achieved so far in the construction of any steel plant in the country. The taking over of such work departmentally has helped to improve significantly the rate of construction. It has also enabled public sector organisations to build up expertise in the erection of sophisticated equipment.

The shortage of steel which had at one stage assumed serious proportions has been substantially overcome by the action taken by BSL to stockpile steel from indigenous sources and through imports. Nearly the entire quantity of about 237,000 tonnes ordered for Stage I has been received. Considering the difficulties faced in Stage I, BSL has taken advance action to procure about 175,000 tonnes of steel required for the expansion. Through the intervention of the Government of India, it has been possible for

BSL to get assurance of supply of about 20,000 tonnes of special constructional steel on a priority basis from the USSR for the construction of the second steel melting shop.

Industrial gases was another bottleneck during the last year. The position has since eased to some extent after the plant's own acetylene unit was commissioned on priority. There has been further improvement in the supply position after the installation of a new gas plant in the industrial estate at Bokaro.

Net-work Planning

An important feature of Bokaro is the computerised planning net work for construction management. To ensure that targets for completion of different phases of the project are maintained, the technique of "Management by Exception" has been developed using the method of the critical path. Detailed network for the individual construction zones have been prepared and are being processed on a computer to high-light the critical areas of work, which require immediate remedial action. The network reports are being used for advance planning of the work in likely critical areas. The computer is also being used for the follow up of equipment supplies. Besides these, other major systems, such as inventory control and the ordering and procurement of maintenance spares are being developed.

An Operations Research Department is also being set up at Bokaro which along with the computer set up, will develop into a full-fledged management information system.

Industrial Relations

Although industrial relations between the management and employees of Bokaro Steel Limited have been cordial throughout the year, there have been sporadic labour problems in the establishments of the contractors. With the assistance of the State Government, BSL have been playing an active role in settlement of all major disputes. In some cases, where progress of work in critical areas was being adversely affected by labour unrest, work has been taken over departmentally along with the workers.

Captive refractory unit

The refractory plant of M/s. Asian Refractories Limited at Bhandaridah which had ceased operation for some time was acquired by the Government by an Act of Parliament passed in December, 1971. The equipment in the factory which had remained idle for about three years required extensive repairs and renovation. The equipment was made serviceable by Bokaro Steel Limited and production commenced in May, 1972 in two round kilns. The tunnel kiln was commissioned in August, 1972 and regular production commenced in this unit in October, 1972. Till the end of March, 1973, 6,226 tonnes of saleable fire-clay bricks and 995 tonnes of mortar have been produced from this unit.

Sophistication in Design

The Bokaro Plant has been designed utilising the latest technical innovations so that material usage, labour and energy consumption will be kept to the minimum. Automation and mechanisation have been provided to a far greater degree than in any other plant in order to ensure trouble free operations. In accordance with world trends, the constituent units such as Coke Ovens, Blast Furnaces, Sintering Plant and Rolling Mills are of large throughputs. A special feature of the Plant is its centralised Production control. This unit will function from a control room rendering all the important data on the operation of the plant and distribution of power, fuel, gas, water and oxygen. Despatcher sets and announcement systems will give extensive communication-cum-conference facilities. A closed circuit television network will provide visual aid to control areas like the LD Converter Shop. Arrangements are being made for installation of online computers for process control in the Blast Furnaces and Steel Melting Shops in order to achieve optimisation of metallurgical and production process. It is also proposed to instal a Third Generation Computer System with extensive tele-processing facilities for production planning and scheduling. Bokaro, thus, stands out as much by the sophistication of its design and technology as by its magnitude.

Indigenous content

Bokaro is being built with a very high percentage of indigenous equipment, structures and refractory materials. Whereas Rourkela, Bhilai and Durgapur were virtually 'turnkey' projects, where the bulk of the equipment and other materials were imported, in the case of Bokaro the emphasis has been on maximum indigenisation. Besides participation of Indian Organisations in the design and engineering of the Project, about 90 per cent of building structures, 100 per cent of technological structures, 65 per cent of mechanical equipment, 48 per cent of electrical equipment, 80 per cent of instruments and 60 per cent of refractories are being obtained indigenously for the first stage of the Plant. What is equally important is that the greater part of these sophisticated equipment and materials is being made in India for the first time. The accent of indigenisation has, therefore, acted as a spur in development of machine building and material know-how and technology.

The process of indigenisation is being carried forward further in the Second Stage of the Plant. The design and engineering work has been entrusted wholly to Indian agencies. The entire structurals steel work required for this expansion will be done in the country. Nearly 86 per cent of the equipment and practically the entire requirement of refractories will also be met from indigenous sources.

Contribution of Public Sector

The civil engineering work and about 62 per cent of the structural steel work required for the first stage is being done by Hindustan Steelworks Construction Limited. Public Sector Undertakings, like the Heavy Engineering Corporation, the Mining and Allied Machinery Corporation, Heavy Electricals of India Limited, Bharat Heavy Electricals Limited, Garden Reach Workshops, Bharat Heavy Plate & Vessels and Instrumentation Limited have undertaken to supply about 55 per cent of the indigenous equipment required for the first stage. The involvement of the Public Sector in the expansion of the Plant to the Second Stage capacity of 4 million tonnes will be even greater. Arising from

the failure or surrender of work by Contractors for various reasons, the major portion of erection of equipment and refractories is also being done by the Public Sector Undertakings. The erection of the Rolling Mills in the first stage involving about 88,000 tonnes of mechanical and 21,000 tonnes of electrical equipment is being done jointly by BSL and HSCL.

Training and Development

Since most of the units being installed in Bokaro are of large capacity than those existing and some units are being installed for the first time in the country, it has been found necessary to obtain the services of a limited number of Soviet specialists to assist in the commissioning and initial operation of these units. To meet the requirement of trained operation and maintenance personnel at different levels, which could not entirely be met from existing plants, recruitment and training schemes were initiated some years ago. About 1,122 personnel has been trained in India and another 936 are undergoing training.

In disciplines and specialities where training facilities do not exist in the country, it is necessary to train a limited number of personnel in USSR plants. BSL have estimated that about 392 officers and staff would require to be trained in the USSR for the first stage of the Plant. So far 188 persons have received training in the USSR.

In accordance with the Directive issued to the Public Undertakings for reservation of posts in them for Scheduled Castes and Scheduled Tribes the staff position in BSL as on 1-1-73 is as under:

Classification of posts	Total No. of employees as on 1-1-73	Number of S/Castes	Number of S/Tribes
Class I	1454	7	6
Class II	1361	15	18
Class III	11478	547	263
Class IV (excluding Sweepers)	5966	1044	831
Class IV (Sweepers)	208	208	..
TOTAL	20967	1821	1118

HINDUSTAN STEELWORKS CONSTRUCTION LIMITED

Hindustan Steelworks Construction Ltd. was incorporated in June 1964 with the object of taking up construction of Steel Plants and to utilise its spare capacity for other construction works. This Company is the principal Contractor for construction of the Bokaro Steel Plant and has also been entrusted with civil engineering for Bhilai expansion, site levelling for the Salem Steel Project and site investigation for the Visakhapatnam and Vijyanagar Steel Projects. In addition, the Company has undertaken other works outside the steel sector.

The authorised capital of the Company is Rs. 1 crore of which Rs. 50 lakhs have so far been paid up. During 1972-73 loans amounting to Rs. 1.50 crores have been given to the Company for procurement of equipment. In the budget for 1973-74 provision has been made for grant of loan of Rs. 1 crore to the Company.

The value of work done during the last 7 years and the net profit after providing for depreciation, interest and taxes of the Company are shown below:—

(In lakhs of Rs.)

Year	Value of work done	Net profit after taxes
1	2	3
1965-66	478.95	56.41
1966-67	364.66	17.50
1967-68	442.77	2.93
1968-69	2093.99	13.03
1969-70	2531.94	10.59
1970-71	3232.20	23.65
1971-72	3961.77	27.74

By the end of 1971-72, the Company had accumulated reserves and surpluses amounting to Rs. 1.36 crores.

Hindustan Steelworks Construction Ltd. made a start in 1965 with site levelling work of Bokaro Steel Project involving over 15 million c.b.m. of earthwork at a value of approximately Rs. 9.36 crores. This was followed by the contracts for civil engineering works valued at Rs. 106.45 crores and structural work costing Rs. 36.30 crores. The civil engineering work involves about 15 million cubic metres of earthwork in foundation excavation and about 5 million cubic metres of controlled earth fill in the embankments of the cooling pond. The concreting required for the first Stage of the Plant is about 1.9 million c.b.m. Building structures to be fabricated by HSCL for the First Stage amount to 1,63,000 tonnes. HSCL has also undertaken the work of laying 131 kilometres of railway tracks and 287 kilometres of underground communications within the plant area.

The civil engineering work at Bokaro was organised by HSCL initially through sub-contractors. During the course of execution of work, the Company had to take over progressively more and more of the work departmentally in order to meet the construction programme of the Steel Plant. It has been possible to achieve a much higher quantum of work through the direct involvement of the Company in civil engineering. The progress in civil engineering works during the last 3 years compared to the total are shown below:—

Item of work	Total quantity involved	Progress			
		Upto March 1971	Upto March 1972	Upto January 1973	%tage on Total
1	2	3	4	5	6
Earthwork excavation (Cbm.)	12,794,612	11,364,100	12,312,203	13,382,354	104.6
Concrete (Cbm.)	1,883,715	1,293,895	1,639,732	1,820,513	96.6
Underground communications (metre)	286,906	180,319	248,662	279,345	97.3
Permanent railway tracks (metre)	131,301	38,411	58,605	86,149	65.6

In line with the original objectives with which the Company was formed, specialisation in the field of erection of technological structures and mechanical and electrical equipment is being developed. The Company has undertaken the erection of the Steel Melting Shop Complex which is one of the most sophisticated units of the Steel Plant. This has been followed by other erection works in the Thermal Power Plant, Blast Furnace, Hot Rolling Mills and the Cold Rolling Mill Complex and also the refractory lining work of Blast Furnaces and Coke Ovens. Against a total quantity of about 1,84,000 tonnes of steel structures to be erected by the Company, 142,168 tonnes were erected upto 31st March, 1973. The Company has been entrusted with erection of about 119,368 tonnes of equipment for the First Stage of Bokaro Steel Plant.

In September, 1971, the work of refractory lining in Blast Furnace and Coke Ovens was taken over from the Contractors who were far behind schedule and awarded to the Company by the Bokaro Steel Ltd. The refractory work for the First Blast Furnace work has already been completed. Upto the end of March, 1973 a total quantity of 17,586 tonnes of refractories have been laid in the Blast Furnace zone and 21,425 tonnes in the Coke Ovens Zone.

The first Blast Furnace Complex at Bokaro Steel Plant was commissioned on the 3rd October, 1972. The Company's contribution in this was substantial.

While the work on Stage I is still in progress, HSCL have already taken in hand expansion works. Work on the 5th Coke Oven Battery, the 5th Converter and other related facilities forming part of the 2.5 million tonne crash programme have been taken up on a priority basis. About 1,090,100 cbm. of earth work and 65,541 cbm. of concreting have already been done for expansion. Orders for fabrication of Steel structures have also been placed on HSCL.

Besides Bokaro, HSCL has undertaken the work of the Second Sintering Plant, the 8th Coke Oven Battery, Dalli

Mechanised Mines and the Boridih Reservoir of the Bhilai Steel Plant.

Profiting by its experience in Bokaro, the Company is now fully equipped to undertake complete construction of new steel plants at Salem, Visakhapatnam and Vijayanagar. The Company has been associated with these projects right from the beginning starting from the selection of site. The Company's role in the construction of these Plants will broadly cover the following:—

(a) Site investigation, survey of sites and collection of construction data.

(b) Assisting in drawing up of construction schedule and preparation of detailed project report.

(c) Site preparation and construction off-site facilities, township, utility and welfare buildings and other enabling works.

(d) Procurement of all construction stores and the plant and equipment required for construction work.

(e) Construction works of the main plant comprising of.—

(i) civil engineering works including communication and services, e.g., roads, railways, water supply, sewerage, power lines, etc.

(ii) steel structural works.

(iii) erection of technological structures and plant and equipment.

(iv) erection and installations of electrical equipment including power distribution lines and sub-stations.

(v) installation of refractory lining and connected works.

(vi) Planning and co-ordination of construction activities.

(f) Assisting in testing, commissioning and handing over units.

Besides steel plant, HSCL has diversified its construction activities in other spheres of industrial projects in order to utilise its spare capacity and resources. The major works taken up include:—

(i) Bharat Pumps & Compressors Plant (nearing completion) at Naini;

(ii) Gas Cylinder Plant at Naini;

(iii) Indian Telephone Industries at Naini (1st factory completed already). Second Telephone Factory;

(iv) Zircaloy Fabrication Plant of Bhabha Atomic Research Centre (completed) at Hyderabad;

(v) Second Hindustan Cable Factory at Hyderabad (in an advanced stage of completion);

(vi) Iron Ore Deposit No. 5 of National Mineral Development Corporation at Bailadila (in progress);

(vii) Lime Stone Quarries and township works of the Bokaro Plant at Bhavanathpur;

(viii) Construction of over 9,000 quarters for the township of Bokaro;

(ix) Dry Dock Construction of Garden Reach Workshops at Calcutta;

(x) Industrial Sheds of Central Inland Water Transport Corporation Calcutta;

(xi) Indian Oil Refinery's work at Haldia;

(xii) Calcutta and Howrah site approaches of the second Hoogly Bridge including the 3 tire inter-changes;

(xiii) Construction of R.C.C. grain silos for the Food Corporation of India, N.P.C. and a number of other works at Delhi.

(xiv) Coal Handling Plant of Haryana State Electricity Board at Faridabad;

(xv) Site levelling, civil engineering and structural works for the smelter unit of BALCO at Korba.

The Company has been declaring a dividend every year since 1965-66. The dividend during the first 3 years was 15 per cent and thereafter it has been 20 per cent.

In accordance with the Directive issued to the Public Undertakings for reservation of posts in them for Scheduled Castes and Scheduled Tribes, the staff position of Hindustan Steel Works Construction Ltd., as on 1.3.73 is as under:—

Classification of posts	Total employees 1-3-73	Number of S/Castes	Number of S/Tribes
1	2	3	4
Class I	642	—	2
Class II	737	4	2
Class III	1001	28	11
Class IV (excluding Sweepers)	271	32	8
Class IV (Sweepers)	4	4	—
Total	2655	68	23

HEAVY ENGINEERING UNDERTAKINGS

HEAVY ENGINEERING CORPORATION LIMITED, RANCHI

Heavy Engineering Corporation Limited, Ranchi was incorporated on the 31st December, 1958. It has three engineering plants:

(i) A Heavy Machine Building Plant with an installed capacity to manufacure 80,000 tonnes of heavy machinery and 25,000 tonnes structurals per year.

(ii) A Foundry Forge Plant with an installed capacity of 180,000 tonnes of gross production per year and a saleable production of approximately 120,000 tonnes.

(iii) A Heavy Machine Tools Plant with an installed capacity to manufacture 278 machine tools (weighing 10,000 tonnes) per year.

The Heavy Machine Building Plant was set up with the Soviet assistance, while the Foundry Forge Plant and the Heavy Machine Tools Plant were set up with Czechoslovak assistance.

The total investment in the Company as on 1.3.1973 is Rs. 264.52 crores of which Rs. 159.50 crores is in the form of equity investment and the balance of Rs. 105.02 crores in the form of loans advanced by the Government.

The following table reflects the expenditure incurred upto 31.12.1972 on the plants and the township against the project cost estimates:—

(Rs. in crores)

Project	Revised project cost estimates	Expenditure upto 31-12-72
Foundry Forge Project (including Crank shafts Project).	110.63	96.67
Heavy Machine Building Plant	46.73	45.75
Heavy Machine Tool Plant	22.27	17.54
Township	23.13	19.06
	202.76	179.02

Heavy Engineering Corporation incurred a loss of Rs. 18.18 crores in 1969-70. In 1970-71 the loss was Rs. 14.43 crores and in 1971-72 it was Rs. 15.85 crores. As on 31.3.1972, the cumulative loss was Rs. 89.19 crores. The loss in 1971-72 was higher than the loss in the previous year primarily on account of the earlier period adjustments. The present assessment is that during 1972-73 there will be a surplus of Rs. 3.19 crores before providing for depreciation and interest. The estimated loss after charging interest and depreciation and after making prior period adjunstment is likely to be of the order of Rs. 12 to Rs. 14 crores.

The overlap of constructional activities with the operational phase in the initial years and the long gestation period needed to build-up production in a project of this magnitude and complexity are the two main reasons for the losses. To a certain extent, the loss incurred are also attributable to an unduly slow build-up of production due to a combination of factors including deficiencies in management and unsatisfactory industrial relations. The heavy burden of interest, depreciation and overheads have also contributed to these losses.

The production in the three plants of the Corporation during 1969-70, 1970-71 and 1971-72 and the anticipated production during 1972-73 are given below:—

(Quantity in tonnes)
(Value in Rs. lakhs)

	1969-70		1970-71		1971-72		1972-73 Anticipated Production
	Qty.	Value	Qty.	Value	Qty.	Value	
Foundry Forge Plant	11,635	381.50	16,021	723.84	20,954	929.85	30,000
(increase over previous year)	(38.5%)	(81.4%)	(37.7%)	(90%)	(30.80%)	(28.40%)	(43.2%)
Heavy Machine Bldg. Plant	24,462	1,418.00	23,109	2052.76	30.468	2728.67	39,007
(increases over previous years)	(26%)	(33%)	-(6%)	(44.7%)	(31.4%)	(33%)	(27.1%)
Heavy Machine Tools Plant	27 Nos. (542T)	78.64	28 Nos. (618T)	105.43	20 Nos. (741T)	126.26	22 Nos. (640T)
(Increase over previous years).	(146%)	(27.1%)	(14%)	(34.6%)	(20%)	(20%)	(—)13%

The above statement will reflect there has been a steady improvement in the production of the Foundry Forge Plant and the Heavy Machine Building Plant. In 1971-72 production of both the units increased by about 31 per cent as compared to the previous year. In 1972-73, it is expected that production in FFP would show an increase of about 43 per cent as compared to the 1971-72. The production in Heavy Machine Building Plant is expected to register an increase of about 27 per cent in 1972-73 as compared to the previous year. The value of production in both the Foundry Forge Plant and Heavy Machine Building Plant showed substantial increase in 1971-72, as compared to 1970-71. In the Foundry Forge Plant increase was of the order of about 28 per cent and in Heavy Machine Building Plant about 33 per cent in 1971-72 as compared to the value of production in 1970-71.

Even though the number of machine tools produced in Heavy Machine Tool Plant in 1971-72 was less than that in 1970-71, both tonnage and value of production in HMTP increased by 20 per cent in 1971-72 as compared to 1970-71. The production in the Heavy Machine Tool Plant in 1972-73 was less from the point of view of tonnage than in 1971-72 mainly on account of inadequate supply of quality castings. Production in Heavy Machine Tool Plant to some extent was affected by non-availability of skilled workers. There has, however, been an increase in the indigenous content of the machine tools produced in 1972-73 as compared to 1971-72.

Foundry Forge Plant

The Foundry Forge Plant was set up to meet the requirements of castings and forgings of the Heavy Machine Building Plant, Heavy Machine Tools Plant and the requirements of other heavy engineering industries. Construction commenced in 1960 and was completed with the commissioning of the 6,000 tonne press in October, 1972. The press is one of the largest in Asia.

Heavy Machine Building Plant

The Plant is designed to manufacture 80,000 tonnes of various items of heavy machinery including equipment required for coke ovens blast furnaces, steel melting, crushing and grinding, rolling mills, cranes, excavators, heavy oil drilling rigs etc.

A structural fabrication shop forms an adjunct to this Plant. This shop which has a capacity of 25,000 tonnes of structurals per annum has been set up without foreign collaboration.

Construction of the Heavy Machine Building Plant commenced in 1960 and was completed in 1966-67. The initial production commenced in 1963-64 *i.e.* during the construction phase of the plant. The production in 1972-73 as indicated earlier is likely to be 39,000 tonnes. Some of the important items of equipment manufactured by the HMBP during 1972-73 were:—

(i) 50 tonnes Wt. Scrap charging machine for Bokaro Steel Ltd.

(ii) 282 tonnes Wt. Jaw Crusher for Bhawanthpur Mines.

(iii) 100 tonnes Wt. tertiary cone crusher for Kiriburu (NMDC).

(iv) Holding ladle Electric transfer car and Jab car for BSL.

(v) Secondary cone crusher and reclaimer for Kiriburu, (NMDC).

Heavy Machine Tools Plant

The Plant is designed to manufacture 10,000 tonnes (278 numbers) of various tools per annum including centre lathes, radial drilling machines, Horizontal boring and turning mills, vertical boring and turning mills, plano milling machines and cylindrical and roll grinding machines. Production commenced in 1966-67. There is considerable unutilised capacity in the Plant. In order to fully utilize the capacity that has been

created fully certain additional machine tools like wheel turning lathes, deep hole boring machine and roll turning lathes, have been taken up for manufacture in the plant in collaboration with reputed European machine builders.

Incentive Scheme

During the year the Corporation introduced incentive schemes in certain sections of the three plants. The number of workers covered under this scheme upto 1.1.1973 was 1,383. The total number of workers to be brought under the scheme in the all three plants is 5,893. The scheme is being introduced in a phased manner and it is proposed to introduce it fully by the 1st May, 1973.

Supplies to Bokaro

The First Blast Furnace for Bokaro with a capacity of 2,000 cu.m. the largest in the country which was inaugurated on 3.10.1972 was manufactured by HEC.

For the Bokaro 1st stage, out of the total requirement of 99579 tonnes of mechanical equipment and structurals, till the end of December '72, 87,297 tonnes of mechanical equipment and structurals were supplied by HEC. Out of the balance of 12,282 tonnes, about 7900 tonnes are to be supplied by HEC and the balance by the sub-contractors of HEC such as Garden Reach Workshop, Jessop and others. During the period April-December, 1972, 13549 tonnes of mechanical equipment and 163 tonnes of structurals have been supplied by HEC for the first stage. Manufacture of equipment for the second stage of Bokaro is also in progress.

Production Programme for 1973-74

The production targets for the three units of HEC for 1973-74 are being finalised. The targets are expected to be substantially higher than the anticipated production in 1972-73.

Industrial Relations

There are 10 registered trade unions functioning in the Heavy Engineering Corporation. The Hatia Project Workers'

Union (INTUC) Ranchi and the Heavy Engineering Corporation's Welfare Association, Calcutta are the two unions recognised by the Management. The problems of a general nature affecting all the workers are discussed by the Management with the recognized union only. The other registered unions can take up only the individual grievances with the Management.

Production during the period from April 17, 1972 to July 10, 1972 was affected by go-slow tactics followed by a strike by a section of artisans known as CTI artisans. The strike was called off on 10-7-1972.

Steps for Improvement

A Task Force to periodically review the performance of the HEC was constituted in April, 1971. The Task Force has had 10 meetings so far. The Task Force has significantly contributed towards identification of the problems and bottlenecks impeding production in the HEC plants. An action Committee of Public Enterprises set up by the Government also examined the working of the HEC in May-June, 1972. The major shortcomings brought out by the different studies relate to lack of proper production planning and control, defective procedures regarding procurement of materials, deficiencies in material handling and maintenance, high level of rejections, high idle time of men and machines, lack of trained personnel, the need of strengthening the management and unsatisfactory industrial relations.

In order to overcome these shortcomings, the following steps have been taken/are being taken:—

(i) Detailed itemised plan of production have been prepared by the HEC for each shop and are being closely followed.

(ii) Procedures relating to procurement and handling of materials have been streamlined. The procurement, issue and accounting of materials is being computerised, with a view to eliminate idle time on account

of shortage of materials. The recommendations made by the Administrative Staff College, Hyderabad, who studied maintenance and material handling in the Foundry Forge Plant at the request of the HEC are being implemented.

(iii) With a view to reducing idle time of men and machines, time keeping with the aid of time punching Clocks has been introduced and double/triple shifts in identified areas are being introduced progressively.

(iv) In order to reduce rejections quality control is being improved.

(v) In order to motivate the workers an incentive scheme and also a high performance reward scheme have been introduced. The incentive scheme is being extended in an all phased manner to cover all direct production workers.

(vi) The possibility of obtaining trained personnel from other sources including Railway Workshops is being considered by the Heavy Engineering Corporation.

(vii) New General Managers for the Foundry Forge Plant and the Heavy Machine Building Plant were appointed by the Government in May '72. It is expected that a new Director (Finance) will be appointed soon. Action to fill other key posts has been initiated by the Heavy Engineering Corporation.

(viii) To improve the industrial relations, grievance of the workers are redressed as quickly as possible. A rational personnel policy is being introduced and promotion procedures are being systematised.

In accordance with the Directive issued by Govt. to the Public Undertakings in regard to the reservation of posts for

Scheduled Castes and Scheduled Tribes, the staff position in HEC as on 1.1.73 is a under:—

Classification of posts	Total No. of employees as on 1-1-73	Number of S/Castes	Number of S/Tribes
1	2	3	4
Class I	1342	6	25
Class II	941	3	16
Class III	1 1843	184	1222
Class IV (excluding Sweepers)	4154	205	1685
Class IV (Sweepers)	477	133	209
Total	18757	531	3157

MINING AND ALLIED MACHINERY CORPORATION LTD.

The Mining & Allied Machinery Corporation Ltd. (MAMC) located at Durgapur was incorporated on the 1st April, 1965, to take over the Coal Mining Machinery Project, which till then formed a part of the Heavy Engineering Corporation Ltd., Ranchi. This Project has been set up with Soviet assistance. The estimated capital cost of the Project including a township is Rs. 37.60 crores. The actual expenditure up to 31-1-1973 including an expenditure of Rs. 6.24 crores on the township was Rs. 37.34 crores.

As on the 1st March, 1973, Government had invested Rs. 20 crores in the Company in the form of equity capital. In addition, the Company had been advanced Rs. 43.90 crores in the form of loans.

This Plant is designed to manufacture various items of mining equipments like conveyors, coal cutters, mine locomotives, fans, pumps, loaders etc. The installed capacity of the Plant is 45,000 tonnes per annum.

Production

The actual production from 1964-65 has been as under :—

Year	Production (tonnes)	Value (Rs. lakhs)
1	2	3
1964-65	2,333	82.07
1965-66	3,989	165.00
1966-67	4,536	205.00
1967-68	5,076	226.00
1968-69	4,099	158.00
1969-70	5,764	384.00
1970-71	7,742	480.00
1971-72	11,991	1,020.00
1972-73 (anticipated)	15,700	1,250.00

The above statement reflects a progressive build up in production during the last three years. The production during 1971-72

registered an improvement of 54.9 per cent over the production in 1970-71. The production during 1972-73 is expected to be about 30 per cent higher than the production during 1971-72.

The turn over of sales increased from Rs. 4.73 crores in 1970-71 to Rs. 7.60 crores during 1971-72. This represents an increase of about 60.7 per cent. The turnover of sales during 1972-73 are expected to register further improvement.

Slow build up of production

The installed capacity of the plant was based on the coal targets originally envisaged in the 3rd and 4th Five Year Plans at 100 million and 200 million tonnes respectively. The latest assessment, however, is that coal production by the end of the 4th Plan would be not more than 80 million tonnes. As a consequence, orders placed on the plant have not been of the same magnitude as was envisaged in the Detailed Projected Report for batch production. Even the orders placed during the 4th Five Year Plan period were primarily for balancing equipment and/or replacement of the machinery.

The Company had, therefore, perforce to accept certain miscellaneous orders of a jobbing nature during 1966-67. Partly because of the nature of the orders for items other than mining equipment and partly due to slow development and design documentation for equipment not envisaged in the Detailed Project Report, the production build up in the Company was very slow. In addition, a number of other factors viz. low productivity, unsatisfactory industrial relations and management deficiencies contributed to the slow build up of capacity.

Diversification in Production

To utilize the available capacity an Expert Committee with members drawn from both private and public sectors as also from the concerned departments of Government, was constituted by the Government in early 1969 to identify new items which could be taken for manufacture by the Company. Keeping in view the economic and technological problems involved in the

manufacturing programmes of new items, the Committee in its Report recommended production of eight principal items.

The Company has taken steps to implement the production programme recommended by the Committee and has diversified its production programme by development of designs and manufacture of equipment for bulk handling of raw materials at ports, coal washing and mineral dressing equipment, roof support for mines, special conveyors and pumps for steel plants, castings and forgings and gear boxes, etc.

The Company has secured an order from Haldia Port for manufacture of conveying equipment worth about Rs. 12 crores. It has also secured an order from Paradip Port for manufacture of a Reclaimer valued at Rs. 40 lakhs. Orders have recently been secured from Madras Port Trust and Marmugoa Port Trust for manufacture of various sophisticated items of equipment such as Conveyors, Stackers, Reclaimers, and Ship Loaders valued at about Rs. 7 crores. An order for the manufacture of similar equipment for a total value of Rs. 1.52 crores has also been received from Visakhapatnam Port Trust. The other items manufactured by the Company during 1972-73 were : Bulk handling equipment and its operational spares for Bokaro Steel Limited, Bulk handling equipment for Haldia Dock Project, Salt Scrapper for FCI and FACT, Cochin, Reclaimers for Paradip Port, Conveyors for DGOF and Haryana State Electricity Board, Ball and Socket joints for Rajabagan Dockyard and Kotter and Keys for Railway Board.

The diversification attempted by the MAMC has resulted in manufacture of equipments which hitherto was imported. The value of the import substitution effected by the MAMC went up from a modest figure of Rs. 0.65 lakhs in 1966-67 to Rs. 43.80 lakhs in 1971-72. The import substitution is likely to be of the order of Rs. 3 crores during 1972-73.

Assistance rendered to the Company

It was decided by the Government in February, 1967 that the Government Departments and public sector undertakings

should obtain such of their requirements, as were within the manufacturing capabilities of MAMC, without calling for open tenders. The price of equipment were to be settled by negotiations between MAMC and various customers subject to ceiling prescribed by the Govt. This dispensation was to be applicable for a period of two years. Subsequently, it was decided to extend this facility upto August, 1973.

Orders in hand

There has been a progressive build up of the orders received by the Company during the past few years. The following table illustrates this :

Order Book position as on :	
1-4-1969	Rs.24.00 crores.
1-4-1970	Rs.24.70 "
1-4-1971	Rs.21.90 "
1-4-1972	Rs.30.74 "
1-3-1973	Rs.35.50 "

Financial results

The following table shows the losses incurred by the Company since its inception :

Year	(in Rs. crores) Loss	
	For the year	Cumulative including prior period adjustments.
1	2	3
1964-65	0.33	0.33
1965-66	2.08	2.41
1966-67	4.72	7.14
1967-68	6.86	14.00
1968-69	6.39	20.16
1969-70	6.40	26.47
1970-71	6.45	33.01
1971-72	3.58	36.59

Out of the cumulative loss of Rs. 36.59 crores, about Rs. 10 crores is on account of depreciation and Rs. 11.15 crores on account of interest charges. The cumulative cash loss as on 31-3-1972 was of the order of Rs. 26.52 crores.

It is expected that the Company would break-even during 1973-74.

Financial Assistance to the Company

Taking into account the special difficulties of the Company and to enable it to improve its financial position, Government have rendered financial assistance to the company in the following manner :—

(i) Government loans amounting to Rs. 24 crores, equivalent to the cash loss incurred by the Company till 31-3-1971, have been treated as interest free for a period of five years w.e.f. 1-4-1971 i.e. till 1975-76. The Company would, however, pay an interest on the balance amount of loans at normal rates. In addition, a loan of Rs. 2.27 crores equivalent to the cash loss incurred by the Company during 1971-72, has also been treated as interest free till 1975-76.

(ii) A moratorium on the payment of loans up to 1974-75 has been granted to the Company.

Industrial relations

Industrial relations during the year have been cordial. This is a significant improvement over the previous year. The MAMC management is increasingly resorting to bi-partite discussions and negotiations for settlement of collective demands of workers. A number of issues including manning of posts, upgradation of scales of pay and production incentives have been settled satisfactorily.

Plan for 1973-74

The production targets for 1973-74 have been set at 21,500 tonnes valued at Rs. 19.60 crores.

With the nationalisation of the Coal Industry, it is expected that the demand for equipment for the Mining Industry—both for coal and metal mines—would increase substantially during the Fifth Five Year Plan. The Company is taking preparatory measures for handling the increase load of mining equipment.

Steps for improvement

The Task Force on Mining and Allied Machinery Corporation which had been set up in April, 1971, to review periodically the performance of the Corporation has contributed significantly towards identification and solution of problems impeding production. In addition, the following measures have been taken to raise production :—

(i) Progress control section has been reorganised. The despatch control section has been strengthened and is now working round the clock to ensure overall control on all production activities in the Plant.

(ii) Ancillary industry development section has been strengthened for procuring items which cannot be manufactured by the Mining and Allied Machinery within the scheduled delivery periods and at a reasonable cost from small scale manufacturers.

(iii) Systematic procedure for maintenance of machines has been introduced.

(iv) Arrangements are being made to strengthen the design organisation by recruiting more design engineers.

(v) Mining and Allied Machinery Corporation's requirement of steel has been projected to the Steel Bank and certain categories of steel and other critical items are being imported for meeting urgent requirements.

(vi) Night shift working is being supervised intensively.

(vii) Progress of supplies against orders for a value of Rs. 5 lakhs and above is reviewed in the Mining and Allied Machinery Corporation Board meetings. CPM (Critical Path Method) charts have been prepared for important orders, so that a better watch can be kept on the progress and remedial action taken, wherever necessary.

In accordance with the Directive issued by Govt. to the Public Undertakings in regard to the reservation of Scheduled Castes/Scheduled Tribes, the staff position in the MAMC as on 1-3-1973 is as under :—

Classification of posts	Total No. of employees as on 1-3-73	Number of	
		S/Castes	S/Tribes
Class I	470	3	—
Class II	318	2	—
Class III	4270	91	19
Class IV (excluding Sweepers)	1239	185	17
Class IV (Sweepers)	195	184	3
Total	6492	465	39

TRIVENI STRUCTURALS LIMITED, NAINI, ALLAHABAD

Triveni Structurals Limited was set up in June, 1965 in pursuance of an agreement between Government of India and Messrs. Voest of Austria. The equity participation of the Government of India and M/s. Voest in this Company is 51 per cent and 49 per cent respectively.

The profile of manufacture of the plant covers steel building structures, hydraulic gates, penstocks, storage tanks, pressure vessels, steel bridges, LD Converters, heavy duty cranes, hoists, etc.

The Plant has been set up with an installed capacity of 25,000 tonnes per annum.

The authorised and subscribed capital of the company is Rs. 3 crores. The Government of India and M/s. Voest have subscribed Rs. 1.53 crores and Rs. 1.47 crores respectively towards the equity of the company. Upto 31st March, 1973, Government would have advanced Rs. 4.88 crores as loans to the company, which would place its aggregate investment in the company at Rs. 6.41 crores. Out of the amount of Rs. 4.88 crores advanced to the company by way of loans, a sum of Rs. 1.78 crores represents short-term loans to the company for meeting cash losses.

The production performance of the company since its inception is incorporated in the following statement :—

Year	Production (in tonnes)	Profit/Loss (+) (—)
		(Rs. in lakhs)
1969-70		
1970-71		
1971-72	5,560	(—)61.53
1972-73	8,908	(—)69.03
(estimated)	10,235	(—)56.81
	10,500	(—)50.00

As on 31st March, 1973, the cumulative loss would amount to Rs. 254.74 lakhs. The present assessment is that with an annual production of 18,000 tonnes, the Company would reach the break-even point. During 1972-73 a production of 14,000 tonnes was planned. Up to the end of January, 1973, the production was 8,500 tonnes. Power-cut of the order of 40 per cent, power stoppages for 9 hours of the working day from November, 1972 and a strike extending from 16th December, 1972 to 25th January, 1973 significantly contributed towards shortfall in production. This shortfall in production primarily accounts for the anticipated loss of Rs. 50 lakhs during the year.

During the year 1972-73, the company obtained orders for three television towers, a large quantity of technological structures for power plants, a sizeable order for transmission towers and an order for some pressure vessels.

During the year a three-hundred metre high T.V. Tower in Bombay and a hundred metre high T.V. Tower at Amritsar were successfully completed. Work on the Ramganga hydel project is in an advanced stage and is scheduled for completion in 1973.

In accordance with the Directive issued to the Public Undertakings for reservation of posts in them for Scheduled Castes/Tribes, the staff position in TSL as on 1-3-73 is as under:—

Classification of posts	Total No. of employees as on 1-3-73	Number of	
		S/Castes	S/Tribes
Class I	146	—	—
Class II	64	—	—
Class III (excluding Sweepers)	1591	159	—
Class III (Sweepers)	177	—	—
*Class IV			
TOTAL	1978	159	—

*After implementation of the Wage Board Award for Engineering Industries, TSL have no Class IV employees.

BHARAT HEAVY PLATE AND VESSELS LIMITED VISAKHAPATNAM

Bharat Heavy Plate and Vessels Limited, Visakhapatnam was incorporated in June, 1966 in technical collaboration with M/s. Skodaexport of Czechoslovakia.

The profile of manufacture of the plant covers heat exchangers, pressure vessels, digesters, columns, storage vessels, dished ends and technological structurals required by fertilizer, chemical and petro-chemical industries. The installed capacity of the Plant is approximately 23,000 tonnes per annum of the total value of Rs. 20 crores.

The capital cost of the Project is Rs. 20.12 crores which includes an outlay of Rs. 2.78 crores on the Township. The expenditure incurred till the end of December, 1972, is Rs. 19.12 crores, including the expenditure of Rs. 1.44 crores on the township.

The authorised capital of the Company is Rs. 11.50 crores. Till the end of January, 1973 Government had invested Rs. 22.17 crores in the Company, of which equity capital accounted for Rs. 10.10 crores and loans Rs. 12.07 crores.

Even though the Plant was completed in August, 1971 trial production commenced in July, 1969. The production performance of the Company over the years has been as follows:—

Year	Quantity (in tonnes)	Value (in Rs. lakhs)
1969-70	235.00	6.49
1970-71	543.00	41.41
1971-72	2476.00	187.99
1972-73 (upto Jan' 73)	3909.00	423.00

It was expected that the Company would be in position to produce about 6,000 tonnes in 1972-73. On account of the disturbed law and order situation and serious restrictions on consumption of power, production during the year has been adversely affected. The present assessment is that the total production in 1972-73 would be about 4,600 tonnes only.

The first profit and loss account of the Company was drawn up in 1969-70, when the Company incurred a loss of Rs. 27.47 lakhs. The Company showed a loss of Rs. 83.53 lakhs in 1970-71 and Rs. 2.03 crores in 1971-72. The accumulated losses of the Company on 1st April, 1972 were of the order of Rs. 3.14 crores. In 1972-73, upto the end of January, 1973, the Company incurred a loss of Rs. 77.66 lakhs. On account of the dislocation in production activities in 1972-73, the Company is likely to incur a loss of about Rs. 1 crore during the year.

For 1973-74 a saleable production of 12,000 tonnes in addition to 4,000 tonnes of work-in-progress has been programmed. In terms of value the production will be about Rs. 10.65 crores. With the increase in the production the Company is expected to show a profit of about Rs. 1 crores in 1973-74, provided production constraints, such as, restrictions on power consumption do not operate.

Bharat Heavy Plate and Vessels have entered into a collaboration agreement with M/s. Air Liquide of France for the manufacture of air and gas separation plants and with M/s. Nooter Corporation of U.S.A. for the manufacture of multilayer vessels. The former will enable the Company to offer on a turn-key basis, complete air and gas separation plants, required by the process industry; and the latter will provide the know-how for the manufacture of high pressure multilayered vessels required for synthesis of ammonia, urea, methanol and other organic products.

Since the finalisation of the collaboration agreement with M/s. Air Liquide, the Company have received a letter of intent from M/s. Bokaro Steel Limited for the supply of two oxygen plants each of the capacity of 500 tonnes per day on a turn-key basis. The total value of the order is about Rs. 10 crores.

A letter of intent has also been received for the manufacture of air separation and nitrogen wash plants of the value of Rs. 5 crores for the Haldia Unit of the Fertilizer Corporation of India. In addition, orders worth about Rs. 1.50 crores have been received for the manufacture and supply of 58 Nm3/hr and 140 Nm3/hr oxygen plants.

From April, 1972 to December, 1972, the Company secured orders worth Rs. 9.11 crores from various process industries in the country. The value of orders received in previous year was Rs. 6.04 crores. With the proposal to set up more fertilizer plants in the Fifth Plan Period, the order book position of the Company is expected to improve substantially. The question of expanding the capacity of BHPV in the Fifth Plan Period to meet the requirements of the fertilizer, chemical and petro-chemical industries is also under consideration.

The Company is taking steps towards diversification of production. Letter of intent has been obtained from the Ministry of Industrial Development for the manufacture of electrostatic precipitators and finned tube air coolers required by the process industry. The Company is also examining the question of taking up the manufacture of forged high pressure valves and Tonne containers for chlorine, sulphur dioxide, etc. A proposal of the Company to manufacture Cryogenic Liquid Storage Tanks required as complementary units for the large tonnage air separation plants in collaboration with M/s Air Liquide is under consideration of the Government.

The total number of employees of the Company on 1st January, 1973 was 2355. The labour management relations have been cordial. It is worth mentioning that all the office bearers of the recognized union are the employees of the Company.

The construction of 647 houses of various types out of 719 houses sanctioned in the 1st phase was completed during the year and the houses have been occupied. The work on the remaining houses is in final stages and the houses are likely to be occupied by end of March, 1973. The construction of the 2nd phase of the township has also been approved by Government. Work on the 2nd phase is expected to start shortly.

In accordance with the Directive issued by Government to the Public Undertakings for reservation of posts in them for Scheduled Castes and Scheduled Tribes the staff position in Bharat Heavy Plate and Vessels Limited as on 1-1-1973 is as under:—

Classification of posts	Total No. of employees as on 1-1-73	Number of	
		S/Castes	S/Tribes
Class I	145	1	—
Class II	96	4	1
Class III	1903	167	13
Class IV (excluding Sweepers)	191	18	1
Class IV (Sweepers)	20	17	—
TOTAL	2355	207	15

TUNGABHADRA STEEL PRODUCTS LTD., TUNGABHADRA DAM

Tungabhadra Steel Products Limited was established in April, 1960, as a Joint venture of the Governments of Mysore and Andhra Pradesh. The equity participation of each State was Rs. 25 lakhs. This Company was set up with the objective of manufacturing hydraulic gates, hoists and pen-stocks for river valley projects.

In February, 1967, the Government of India acquired a controlling interest in the company by investing Rs. 51 lakhs as share capital while the investment by the Governments of Andhra Pradesh and Mysore remained unchanged. On the 30th March, 1972 a loan of Rs. 10 lakhs was advanced to the company by Government for replacement of old machinery. In August, 1972, a further loan of Rs. 10 lakhs was advanced to the company for the same purpose.

The present site on which the workshops of the company are located does not offer any scope for expansion. In the circumstance it has been decided to shift the workshops to a new site where the company intends to expand its activities and diversify its production. With this in view, the company has acquired 87 acres of land at a distance of about one mile from its existing workshops. The expansion scheme, estimated to cost Rs. 104 lakhs, which has been approved by Govt., contemplates setting up of a structural shop with an area of 6,000 sq. metres (the present area of structural shop is 3,350 sq. metres). The machinery in the present structural shop will be shifted to the structural shop at the new site and the other shops (machine shop, foundry, etc.) will be shifted progressively to the new site. With the completion of expansion scheme, it would be possible to increase production of hydraulic and other structurals by 2,000 tonnes per year. Additional machinery for diversification of

production is also proposed to be installed during the current plan period. It is expected that the shifting of the workshops and the expansion of the production facilities would be completed by the end of 1973.

The company has spent Rs. 12.38 lakhs on expansion and diversification of production, Rs. 7.84 lakhs on construction and Rs. 4.54 lakhs in acquiring machinery up to December, 1972. Work of the value of Rs. 34 lakhs is expected to be completed by the end of March, 1973. The company has procured machinery of the value of Rs. 11 lakhs and a commitment of Rs. 5 lakhs on this account is on hand.

The present manufacturing profile of the Company includes gates, hoists and penstock for river valley projects and transmission towers, building structurals, pressure vessels, tanks, gantry cranes, and EOT cranes. The company has a collaboration agreement with M/s. Neyrpic, Grenoble, France for the manufacture of gates and hoists.

There has been a steady increase in the value of production over the years, as shown below:—

Year	Quantity (in tonnes)	Value (in Rs. lakhs)
1967-68	1,050	64.01
1968-69	2,305	72.50
1969-70	3,892	106.00
1970-71	3,587	116.00
1971-72	3,805	151.38
1972-73 (anticipated)	4,200	192.00

Some of the important projects under execution to which gates and hoists are being supplied by this Company are the Upper Krishna, Kalanadi and Malaprabha Projects in Mysore State; the Balimela project in Orissa State, the Cheruthoni Dam of Iddikki Project in Kerala State and the Beas Project in Himachal Pradesh. The biggest order secured by the company so far is for the supply of gates and hoists, of the value of Rs. 2.8 crores, to the Upper Krishna Project.

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Some of the important projects under execution to which gates and hoists are being supplied by this Company are the Upper Krishna, Kalanadi and Malaprabha Projects in Mysore State; the Balimela project in Orissa State, the Cheruthoni Dam of Iddikki Project in Kerala State and the Beas Project in Himachal Pradesh. The biggest order secured by the company so far is for the supply of gates and hoists, of the value of Rs. 2.8 crores, to the Upper Krishna Project.

The company commissioned a Galvanising Plant of a capacity of 3,000 m.t. per annum on a single shift basis in October, 1969. Initially the order book position for transmission line towers and sub-station structures was not encouraging. The current position has improved somewhat and now the company has orders for 1,450 tonnes. The manufacture of transmission line towers is a highly competitive line. The company has developed its own designs for these towers, and has been quoting on the basis of reduced overheads with a view to enter the market and secure some load for the Galvanising Plant.

The gross assets of the company increased from Rs. 18.50 lakhs at the time of its formation to Rs. 92.32 lakhs as on 31st March, 1972. During the past 12 years of operation the company earned a net profit of Rs. 76.87 lakhs of which Rs. 30.08 lakhs was paid as income-tax and Rs. 24.30 lakhs towards dividends. The balance of Rs. 22.49 lakhs has been utilised for increasing the assets. The profit earned during the past years is indicated below:—

(Rs. in lakhs)

Year	Profit before tax	Provision for income tax	Profit after tax
1967-68	16.28	7.95	8.33
1968-69	11.61	2.75	8.86
1969-70	4.80	0.75	4.05
1970-71	1.16	Nil	1.16
1971-72	3.15	Nil	3.15
1972-73 (estimated)	10.45	Nil	10.45
			36.00

The profitability of the company was affected by the severe recession in the Engineering Industry during the year 1966-67 and 1967-68. To avoid large scale retrenchment during this period and to utilise the machines and facilities, the company had to take orders at very low rates.

The work load in hand as on end of December, 1972 amounts to Rs. 844.91 lakhs. The company has recently quoted for supply of gates and hoists for Lower Jhelum Project in Jammu and Kashmir and the orders are expected to be placed on the company shortly.

The company has taken up construction of 200 numbers of tenements for workmen under the subsidised Industrial Housing Scheme of Mysore State Housing Board and 20 tenements have been completed and are ready for occupation. The work on 68 tenements is expected to be completed by April, 1973. Tenders have been called for the remaining tenements.

In accordance with the Directive issued to the Public Undertakings for reservation of posts in them for scheduled castes/Tribes, the staff position in Tungabhadra Steel Products Ltd., as on 1-1-1973 is as under:—

Classification of posts	Total No. of employees as on 1-1-73	Number of S/Castes	Number of S/Tribes
Class I	25	@	—
Class II	17	—	2
Class III	850	174	1
Class IV (including Sweepers)	45	7	—
TOTAL	937	181	3

@ One Officer was working but he resigned.

ENGINEERING PROJECTS (INDIA) LIMITED, NEW DELHI

In April, 1970 a consortium of selected public sector undertakings was constituted with the intention of taking up business connected with the supply of equipment for steel plants, mines, fertilizer factories and other industrial projects by entering into contracts for design, manufacture, inspection, supply, erection and commissioning of equipment on a turn key basis or otherwise by utilizing the facilities available with the member companies.

The new company was incorporated under the name and style "The Indian Consortium of Industrial Projects Limited". Its name was subsequently changed to "Engineering Projects (India) Ltd.".

The public undertakings which are participating in the share capital of the Consortium and the percentage of their share holdings are as under:—

	Percent
(i) Heavy Engineering Corporation Ltd., Ranchi	51
(ii) Bharat Heavy Electricals Ltd., New Delhi	10
(iii) Heavy Electricals (India) Ltd., Bhopal	10
(iv) Mining & Allied Machinery Corpn. Ltd., Durgapur	7
(v) Bharat Heavy Plate & Vessels Ltd., Visakhapatnam	7
(vi) Triveni Structurals Ltd., Naini	7
(vii) Instrumentation Ltd., Kota	5
(viii) Hindustan Steel works Construction Ltd., Calcutta	3

The constituent members of the Engineering Projects (India) Ltd., are premier heavy engineering and heavy electrical units in the public sector which manufacture a wide variety of equipment.

The authorised capital of the Company is Rs. 30 lakhs. The total paid up capital so far is Rs. 17.58 lakhs. Government of India have given a counter guarantee to the extent of Rs. 120 lakhs to the State Bank of India for the issuance of bank guarantee in favour of the Company's customer. No loan has been given to the Company by the Government.

During 1970-71, which was the first year of its operation, Engineering Projects (India) Ltd., incurred a revenue expenditure of Rs. 2.45 lakhs. In 1971-72, the excess of expenditure over income was Rs. 8.74 lakhs. During 1972-73, the Company secured a substantial number of contracts. Work on some of the projects has commenced. It is expected that the company would be able to break even during 1972-73 and may earn a small profit.

The total value of the contracts secured by the Company till the end of January, 1973 is about Rs. 33 crores. The important Projects under execution are as follows:—

Name of the Project	(Value in Rs. crores)
1. Second Hooghly Crossing Project	12.2
2. Kandla Fertilizer Handling Project	6.47
3. Durgapur Coke Oven Project	5.00
4. Raw Material Handling Plant for Bhilai	2.52
5. Coal Handling Plant for Haryana State Electricity Board.	1.4
6. Ash Handling Plant for Haryana State Electricity Board	1.3
7. Bailadilla Iron Ore Project (Part -III)	1.27
8. Expansion of Hindustan Latex Ltd.	1.02
9. Silos for the Food Corporation of India	0.60
10. Limestone crushing Plant at Bokajan for the Cement Corporation of India	0.40

In addition, the Engineering Projects (India) Ltd. had also completed three consultancy assignments during the year.

Apart from the Projects mentioned earlier, Engineering Projects (India) Ltd. have submitted 19 tenders for projects on turn-key basis in India and abroad, the total value of which is Rs. 127.3 crores.

Engineering Projects (India) Ltd., in collaboration with Oil India Limited, has submitted a tender for setting up a compressor station and laying a pipeline in Indonesia. The company has also submitted a tender in February, 1973 for the setting up of a semi-integrated steel plant in Iraq.

The Company is negotiating a collaboration agreement with M/s. Demag, of West Germany, for the manufacture of electric arc and reduction furnaces of 20 to 100 tonnes capacities in India.

APPENDIX I

PRODUCTION OF STEEL INGOTS

(In '000 tonnes)

Year	Bhilai	Durgapur	Rourkela	TISCO	IISCO	Total (1—5)
	1	2	3	4	5	6
1961-62	789	462	354	1,643	934	4,182
1962-63	1,060	731	700	1,799	1,002	5,292
1963-64	1,143	972	800	1,892	1,027	5,834
1964-65	1,131	1,006	979	1,956	950	6,022
1965-66	1,371	1,001	1 065	1,979	970	6,386
1966-67	1,852	754	943	2,001	897	6,447
1967-68	1,785	738	924	1,933	791	6,171
1968-69	1,735	823	1,162	1,816	777	6,313
1969-70	1,876	818	1,104	1,708	700	6,206
1970-71	1,940	634	1,038	1,715	627	5,954
1971-72	1,953	700	823	1,708	617	5,801
1972-73	2,108	723	1,177	1,690	431	6,129

SOURCES: (i) Statistics for Iron and Steel industry in India (issued by HSL)
(ii) Iron and Steel Control Bulletin/Data received from the plants.

APPENDIX II

PRODUCTION OF SALEABLE PIG IRON

(In '000 tonnes)

Year	Bhilai	Durga-pur	Rour-kela	TISCO	IISCO	Total	MISL	Bokaro	Others	Grand Total
	1	2	3	4	5	6	7	8	9	10
1963-64	407	418	98	—	203	1,132	—	—	31	1,163
1964-65	349	385	79	23	207	1,043	—	—	42	1,085
1965-66	509	336	68	18	219	1,150	—	—	26	1,176
1966-67	550	201	59	3	172	985	—	—	28	1,013
1967-68	656	278	64	1	197	1,196	—	—	22	1,218
1968-69	591	375	147	2	346	1,461	13	—	31	1,505
1969-70	649	376	113	1	322	1,461	4	—	74	1,539
1970-71	554	330	96	1	253	1,234	30	—	56	1,320
1971-72	476	269	127	2	211	1,085	54	—	91	1,230
@1972-73	550	280	73	—	27	930	41	308*	92	1,371

SOURCE: 1963-64 to 1971-72— Iron and Steel Control Bulletin.

1972-73—Data received from the Plants/Units.

*October '72—March' 73.

@Provisional.

APPENDIX III

PRODUCTION OF SALEABLE STEEL BY MAIN PRODUCERS

(In thousand tonnes)

Year	Bhilai	Durgapur	Rourkela	TISCO	IISCO	Total
1	2	3	4	5	6	7
1961-62	551	362	186	1,318	737	3,154
1962-63	803	486	421	1,413	795	3,918
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

SOURCE: 1961-62 to 1969-70—Statistics for Iron & Steel Industry in India—issued by HSL-1970.

1970-71 to 1972-73— Plants concerned.

APPENDIX IV

PRODUCTION OF TOOL, ALLOY AND SPECIAL STEEL

(In tonnes)

Producers	1969-70	1970-71	1971-72	1972-73*
1	2	3	4	5
1. Canara Workshops, Ltd. Mysore.	2,163	3,801	2,834	2,097
2. Firth Sterling Steel Co. of India Ltd., Maharashtra	533	921	985	951
3. Globe Motors (P) Ltd., New Delhi	—	7,816	4,306	12,866
4. Guest Keen, Williams Ltd., West Bengal	24,619	29,686	35.095	38,234
5. Alloy Steel Project, Durgapur	41,189	38,621	35,006	35,851
6. Hindustan Steel Ltd., (Bhilai, Rourkela & Durgapur Steel Plants)	37,383	113,964	94,530	99,792
7. Indian Iron & Steel Co., West Bengal	1,664	Nil	Nil	N.A.
8. Lasco Steel Ltd., Madras	—	—	85	Nil
9. Mahindra Ugine Steel Co., Ltd., Maharashtra	19,679	28,174	32.561	28,391
10. Mysore Iron & Steel Ltd., Mysore	46,362	48,527	52,052	41,184
11. Singh Engg. Works Ltd., (U.P.)	—	467	—	N.A.
12. Tata Iron & Steel Co., Ltd., Bihar	66,926	132,308	1,73,698	161,592
13. J.K. Iron & Steel Co. Ltd., Kanpur	—	67	78	N.A.

*Provisional

APPENDIX IV—Contd.

Production	1969-70	1970-71	1971-72	1972-73*
14. Krishna Steel Industries (P) Ltd., Bombay	..	Nil	Nil	Nil
15. Mukand Iron & Steel Works Ltd., Bombay	19,318	5,241	2,939	2,580
16. The National Iron & Steel Co. Ltd., Calcutta	1,225	657	159	300
17. Textool Co. Ltd., Coimbatore	..	63	395	398
18. Himmat Steel Foundry (M.P.)	..	..	1,769	NA
19. Upper India Steel Punjab	..	..	2,043	6,125
TOTAL	2,61,061	4,10,918	4,38,535	430,361

SOURCE : I. & S. Control Bulletin/units concerned.

*Provisional

APPENDIX V

PRODUCTION OF FINISHED STEEL-PRODUCER-WISE

(In '000 Tonnes)

Year	Bhilai	Durgapur	Rourkela	Tisco	Ilsco	Total	MISL	Others	Grand Total
1	2	3	4	5	6	7	8	9	10
1961-62	354	81	178	886	557	2,056	39	844	2,939
1962-63	555	234	427	977	632	2,852	39	1,000	3,864
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 (April-Dec.)	1,099	231	483	706	213	2,732	42	1,100	3,874

SOURCES : (i) 1961-62 to 1962-63.....Statistics for Iron and Steel Industry in India 1966 issued by HSL.
(ii) 1963-64 to 1972-73.....Iron & Steel Control Bulletin.

@ Provisional.

APPENDIX VI

PRODUCTION OF FINISHED STEEL-CATEGORY-WISE

(Figures in '000 tonnes)

Category	*1969-70*	*1970-71*	*1971-72*	*1972-73 (April-Dec.)**
1	2	3	4	5
A—Mild Steel				
Light and Medium Structurals	612.9	641.7	512.0	458.8
Heavy Structurals	243.0	238.3	192.9	152.1
Heavy Rails				
(i) 1st Class	247.7	243.7	259.7	203.4
(ii) 2nd Class	170.4	145.4	109.6	49.8
Light Rails	7.0	5.5	6.4	1.8
Black Sheet (Corr.)	..	..	0.7	0.3
Black Sheet (Plain)				
(i) Hot Rolled	205.7	212.4	219.1	181.9
(ii) Cold Rolled	83.5	85.2	96.1	69.1
G.P. Sheets	74.9	72.9	57.7	45.9

APPENDIX VI—*Contd.*

1	2	3	4	5
G.C. Sheets	119.7	117.2	108.9	59.5
Plates	321.3	271.4	274.9	229.3
Bars	1,151.6	1,055.7	1,153.8	903.7
Rods	575.6	517.6	562.8	501.7
Wires :—				
(i) Black	72.5	48.5	81.2	73.2
(ii) Galvd.	46.7	34.8	52.1	41.5
(iii) Others	63.6	52.3	90.9	59.3
Hoops Strips :—				
(i) Hot Rolled	2.3	6.6	8.2	6.0
(ii) Cold Rolled	244.8	91.6	105.6	103.9
Box Strappings	81.2	100.1	102.5	69.2
Steel Sleepers	6.8	6.7	5.1	1.7
Tinplates	49.7	58.8	67.7	37.7
Skelp	94.5	133.4	114.5	84.2
	240.6	242.6	232.7	176.2

Wheel, Tyres & Axles	*33.9*	*37.5*	*32.0*	*22.1*
Special Sections	*36.5*	*57.5*	*75.4*	*41.9*
TOTAL MILD STEEL	*4,786.4*	*4,477.4*	*4,522.5*	*3,574.2*
B. Tool, Alloy & Special Steel	*261.1*	*410.9*	*438.5*	*299.8*
GRAND TOTAL (A+B)	5,047.5	4,888.3	4,961.0	3,874.0

SOURCE : Iron and Steel Control Bulletin.

*Provisional.

APPENDIX VII

IMPORTS OF IRON AND STEEL

(Quantity in tonnes)
(Value in Rs. lakhs)

Items	1969-70		1970-71		1971-72		1972-73 (April-August)	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Pig Iron/Ferro Alloys . .	2,399	123	1,609	200	8,140	298	1,546	57
Cast Iron	1,454	80	1,626	72	1,240	78	569	35
Mild Steel	345,282	58,10	551,132	1,00,10	1,086,399	1,68,30	454,563	65,53
High Carbon Steels . . .	31,836	5,88	71,454	15,45	173,803	33,03	89,226	13,50
Alloy Steels	28,286	12,16	64,924	25,81	87,736	33,99	26,531	13,50
Steel Castings & Forgings. .	7,231	3,93	8,015	4,34	6,394	3,96	3,235	2,34
Iron & Steel Scrap	6,599	91	7,428	76	18,427	1,75	3,668	39
TOTAL .	423,087	83,01	706,088	1,49,18	1,382,139	2,44,79	579,338	96,18

SOURCE : Derived from DGCIS monthly statistics of foreign trade of India.

APPENDIX VIII

CATEGORY-WISE EXPORTS OF IRON AND STEEL DURING 1970-71, 1971-72 AND 1972-73

(Quantity in Thousand Tonnes)
(Value in Rs. lakhs)

Category	1970-71		1971-72		1972-73 (April-Feb.)	
	Quantity	Value	Quantity	Value	Quantity	Value
(1) Pig Iron	464.8	21,02.4	218.1	7,43.85	307.6	9,18.89
(2) Ingots	40.1	1,83.3	..	..	..	..
(3) Billets	22.9	1,15.0	..	..	..	..
(4) Rails	87.6	6,03.6	90.0	7,99.83	10.3	74.89
(5) Structurals	281.2	28,23.3	106.7	9,58.33	48.1	4,42.92
(6) Rounds/Rods	101.4	8,64.0	4.5	37.62	2.4	19.55
(7) G.C. Sheets	..	..	0.8	9.19	2.9	36.46
TOTAL .	998.0	66,91.6	420.1	25,48.82	371.3	15,66.16

SOURCE : Steel Exporter's Association.

APPENDIX IX

STATEMENT SHOWING COUNTRY-WISE, CATEGORY-WISE EXPORTS OF IRON AND STEEL DURING 11 MONTHS PERIOD OF 1972-73—FROM 1-4-72 TO 28-2-1973

(In M/T)

Country	Rounds/ Rods	Structu-rals	Rails	Pig Iron	G.C. Sheets
Bangladesh	..	..	..	..	2,899
Burma	..	..	5,938	..	..
Hongkong	..	645	..	..	..
Iran	..	7,371	..	..	..
Indonesia	662	3,431	..	..	..
Japan	..	..	..	127,954	..
Kenya	..	706	..	..	..
Kuwait	..	40	..	..	..
Malaysia	..	59	..	..	..
Sudan	233	169	..	..	..
Singapore	..	50	..	22,291	..
Thailand	..	429	..	..	..
Taiwan	..	..	..	6,906	..
U.S.S.R	..	35,193	..	1,40,448	..
U.A.R.	1,479	..	4,400	..	..
Yogoslavia	..	..	..	9,975	..
GRAND TOTAL	2,374	48,093	10,338	307,574	2,899

Total Exports during the above 10 month period . . 3,71,278 M/T
Total F.O.B. Value of the above exports . . Rupees 1,566.16 Lakhs
SOURCE : Steel Exporter's Association.

APPENDIX X

EXPORT OF IRON AND STEEL SCRAP

	1970-71		1971-72		1972-73 (April-Sept.)	
	Quantity	Value	Quantity	Value	Quantity	Value
	Tonnes	(Rs. lakhs)	(Tonnes)	(Rs. lakhs)	(Tonnes)	(Rs. lakhs)
Iron and Steel Scrap for re-smelting Re-forging						
Filing etc.	64,867	1,47.64	26,706	40.53	10,584	15.83
Wornout articles	673	2.35	..	..	..	..
Others	164,816	4,53.39	96,520	124.27	25,066	35.47
Sub-Total	230,356	6,03.38	123,226	164.80	35,650	51.30
Iron and Steel Scrap used as Prime Varities						
Bars ends etc.	1,321	3.38	3,329	5.83	..	..
Sheet Cuttings (Uncoated)	23,508	68.70	9,336	19.78	..	..
Sheet Cuttings (Coated)	922	3.18	..	..	..	..
Other Remnants	4,798	16.32	10,137	9.09	33	0.87
Sub-Total	30,549	91.58	22,802	34.70	33	0.87
GRAND TOTAL	260,905	6,94.96	1,46,028	199.50	35,683	52.17

SOURCE : DGCIS monthly statistics of Foreign Trade of India.

APPENDIX XI

CATEGORY-WISE EXPORT OF FERRO-ALLOYS

	1970-71		1971-72		1972-73 (April-Sept.)	
	Quantity (Tonnes)	Value (Rs. lakhs)	Quantity (Tonnes)	Value (Rs. lakhs)	Quantity (Tonnes)	Value (Rs. lakhs)
Ferro-Alloys						
Ferro manganese below 3% carbon	2,763	25.35	407	4.29	807	8.34
Ferro Manganese over 3% carbon	84,879	8,17.00	17,300	1,90.64	43,653	3,84.93
Ferro Chrome	8,893	2,59.53	3,878	98.45	..	..
Ferro Silicon	1,401	21.17	..	..	1,991	14.62
Others	681	15.56	..	..	79	0.86
TOTAL .	98,617	11,38.64	21,585	2,93.38	46,530	4,08.75

SOURCE : DGCIS monthly statistics of foreign trade of India.

OCM

As desired, a copy of the Annual Report 1972-73 is sent herewith.

2.5.73

S.O. Budget Sec
(Shri Agarwal)