CHAPTER-V

PUBLIC SECTOR STEEL COMPANY IN INDIA

5.1 INTRODUCTION:

The advent of public sector steel industry in India was marked by the establishment of Hindustan Steel Limited which later on merged into Steel Authority of India Limited. Set up in the Public Sector to meet the demand of steel the country, it ushered the beginning of steel making in the public sector in the post independence era. As stated in Chapter IV, the company was established with the objectives of providing a strong industrial base for the country, earn revenue for the exchequer, develop green field areas, contribute to employment and have a high volume of production for domestic use and export markets. The issues and implications involved in the study of the company will be dealt in three parts:

- Hindustan Steel Limited (1954-1973)
- Steel Authority of India Limited (1973 – 1991) and
- Steel Authority of India Limited (1991-1996)

5.2 HINDUSTAN STEEL LIMITED

Hindustan Steel Limited (HSL) was formed on 19th January, 1954, in New Delhi as a private joint stock company under the Indian Companies Act, 1913. HSL was set up with the task of constructing and managing the steel plant at Rourkela in pursuance of the agreement between the Government of India and the West German combine of Krupp-Demag. The Bhilai and Durgapur projects were under the direct control of the Ministry of Iron and Steel. However, they were merged with HSL on 1st April 1957. Thus, Hindustan Steel Limited was given the responsibility for the construction and management of all the three steel plants in the
public sector—Rourkela, Bhilai and Durgapur. These plants were all set up in green-field areas and with facilities of water and power, considered essential for manufacturer of steel.

5.3 MAJOR FACILITIES

The Major facilities provided at the three plants were generally comparable in nature but were tailored to meet the individual product requirements. Broadly, Rourkela was a flat product plant, Bhilai was to produce rails, heavy structurals and rounds, and Durgapur focusing on railway materials, forging blooms and billets and light structurals. The major facilities at the three plants are shown below.

Table 5.1 Major Facilities at One Million Tonne Stage

<table>
<thead>
<tr>
<th>Facilities</th>
<th>Rourkela</th>
<th>Bhilai</th>
<th>Durgapur</th>
</tr>
</thead>
<tbody>
<tr>
<td>C.O.</td>
<td>3X70 ovens</td>
<td>3x65 ovens</td>
<td>3x78 ovens</td>
</tr>
<tr>
<td>B.F.</td>
<td>3x1000tpd</td>
<td>3x1135 tpd</td>
<td>3x1250 tpd</td>
</tr>
<tr>
<td>Steel making</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2x1100 t-mixers</td>
<td>1x1300 t-mixers</td>
<td>2x800 mixers</td>
</tr>
<tr>
<td></td>
<td>4x80 t -O.H.</td>
<td>6X250 t-O.H.</td>
<td>7X200 t-O.H.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1X100 t-O.H.</td>
</tr>
<tr>
<td>R.Mill</td>
<td>1 Blooming &amp; Slabbing mill</td>
<td>1 Blooming mill</td>
<td>1 Blooming mill</td>
</tr>
<tr>
<td></td>
<td>1 Plate mill</td>
<td>1 Continuous billet mill</td>
<td>1 Intermediate mill</td>
</tr>
<tr>
<td></td>
<td>1 Wide strip mill</td>
<td>1 Semi Continuous merchant mill</td>
<td>1 Continuous mill</td>
</tr>
<tr>
<td></td>
<td>1 Cold Rolling mill</td>
<td>1 Rail &amp; Structure mill</td>
<td>1 Continuous merchant mill</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1 wheel &amp; axle plant</td>
</tr>
</tbody>
</table>

Source: Statistics for Iron & Steel Industry, ISL, Ranchi, 1964

5.4 TECHNOLOGICAL DIFFERENCES:

All the three steel plants were based on the then prevailing level of technology. While the Bhilai and Durgapur steel plants preferred the open hearth steel making route, Rourkela steel plant opted for the Linszer Dussenstahl (LD) process with each LD vessel of 40 tonne capacity. At the expansion stage for 60 tonnes converters again Rourkela Steel Plant had to go to W Germany. Again, later on for higher capacity 125/130 tonnes vessels also, the search for technology started anew. Japan, which went in at the same time as India for LD, not only absorbed the technology fully, but developed on it in about a decade’s time to the extent that it
was able to offer LD technology and equipment to other countries also. India, however, found it difficult to come of age in steel technology and allied equipment design because of its dependence of foreign companies for technology upgradation.

5.5 PRODUCT MIX:

The product mix of different plants was decided in relation to the infratstructural facilities available and the then projected demand for steel products in the country. The product mix of the three plants is enumerated below:

Table 5.2 Plantwise Product Mix

<table>
<thead>
<tr>
<th>Products</th>
<th>Tonnes</th>
<th>Products</th>
<th>Tonnes</th>
<th>Products</th>
<th>Tonnes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plates</td>
<td>200,000</td>
<td>Rails</td>
<td>110,000</td>
<td>Heavy forging</td>
<td>10,000</td>
</tr>
<tr>
<td>H R Sheets/strips</td>
<td>300,000</td>
<td>Sleeper bars</td>
<td>90,000</td>
<td>blooms</td>
<td></td>
</tr>
<tr>
<td>CR Sheets/strips</td>
<td>170,000</td>
<td>Heavy</td>
<td>284,000</td>
<td>Merchant sections</td>
<td>240,000</td>
</tr>
<tr>
<td>Tin Plates</td>
<td>50,000</td>
<td>structurals</td>
<td>121,000</td>
<td>Forging billets</td>
<td>60,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rounds</td>
<td>15,000</td>
<td>Sleeper bars</td>
<td>60,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Flats</td>
<td>150,000</td>
<td>Light sections</td>
<td>200,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Billets</td>
<td></td>
<td>Forging blooms</td>
<td>30,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Wheels &amp; Axles</td>
<td>40,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Billets</td>
<td>150,000</td>
</tr>
<tr>
<td>Total</td>
<td>720,000</td>
<td></td>
<td>770,000</td>
<td></td>
<td>790,000</td>
</tr>
</tbody>
</table>

It is noteworthy that notwithstanding the equal importance of products from all the units to the national economy, and the prevailing need for infrastructural development of India, flat products enjoyed a price advantage over the long products. Railway products had to be contented with the low prices given by the Indian Railways, who were the sole buyers for whom the material was manufactured.

5.6 MANPOWER:

In tune with initial objective of generating large-scale employment opportunities, the public sector steel industry went in for massive recruitment. As the years progressed, there
were more additions to the ranks. When the expansions were completed in the three plants, there was a massive manpower in the three steel plants. The details of the manpower position was as follows.

Table 5.3 Manpower in HSL (As on 31st March)

<table>
<thead>
<tr>
<th>Unit</th>
<th>1967</th>
<th>1970</th>
<th>1973</th>
</tr>
</thead>
<tbody>
<tr>
<td>Head Office</td>
<td>458</td>
<td>542</td>
<td>917</td>
</tr>
<tr>
<td>Bhilai</td>
<td>49,768</td>
<td>46,386</td>
<td>49,914</td>
</tr>
<tr>
<td>Durgapur</td>
<td>27,770</td>
<td>28,293</td>
<td>30,881</td>
</tr>
<tr>
<td>Rourkela</td>
<td>34,089</td>
<td>34,090</td>
<td>35,031</td>
</tr>
<tr>
<td>Alloy Steels Plant</td>
<td>3,342</td>
<td>5,170</td>
<td>6,749</td>
</tr>
<tr>
<td>Central Coal Processing Workshop</td>
<td>2,379</td>
<td>2,478</td>
<td>2,556</td>
</tr>
<tr>
<td>Central Energy Development Board</td>
<td>734</td>
<td>1,060</td>
<td>1,698</td>
</tr>
<tr>
<td>Coal Supply Organisation</td>
<td>997</td>
<td>1,332</td>
<td>1,894</td>
</tr>
<tr>
<td>Transport &amp; Shipping Cell</td>
<td>502</td>
<td>830</td>
<td>1,138</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>120,039</td>
<td>120,181</td>
<td>130,778</td>
</tr>
</tbody>
</table>


Thus, HSL had by the beginning of the seventies a total manpower strength of 120,181 persons, which continued to increase without check in later years too. It was soon realised that overmanning was counter productive and this fact was commented upon by several committees and commissions but during the tenure of HSL, towards the end 1972, a voluntary retirement scheme was introduced to contain manpower. This had only a very limited impact and the huge manpower continued to be a major handicap for the company.

5.7 EXPANSION:

As the Government decided to expand the existing production capacity, the projected plant sizes were fixed at 1.8 million tonnes at Rourkela, 2.5 million tonnes at Bhilai, and 1.6 million tonnes at Durgapur, all in ingot tonnes per annum. This was intended to be achieved through massive investment the details of which are as follows: Rourkela Rs 150 crores, Bhilai Rs 241.5 crores and Durgapur Rs 81 crores. The expansions were completed by 1967.
**Bokaro Steel Plant:** A 4 million tonnes plant at an estimated cost of Rs 558.5 crores with the foreign exchange component of Rs 227.6 crores was set up in Bokaro. An interim 1.5 million tonnes plant at a capital cost of Rs 357.7 crores involving a foreign exchange of Rs 151.6 crores was also envisaged. USSR government offered to provide necessary technical and financial cooperation which was accepted and an agreement was signed on 25th January, 1965.

**5.8 PERFORMANCE OF HSL:**

Though HSL was formed in 1954, it took over the management of the three steel plants of Rourkela, Bhilai and Durgapur in 1957 and managed them for the next 19 years till the formation of SAIL on 24th January, 1973. The nearly two decades of HSL’s existence was marked by a recessional trend in the national economy in the mid sixties, which had its repercussion on the market for steel. The phenomenon increased in early 1970 into serious industrial relations problems of the late sixties, which left a permanent impression on the company and also the industry. This, in turn, had far reaching policy changes in managerial style, with its effect on plant level functioning. A critical review of the performance of HSL has been done taking into account the constraints, which punctuated its effective working.

**5.8.1 Three phases:**

The performance of HSL on the production front could be categorized in three phases. The three phases are as under with reference to the years of actual operation.

<table>
<thead>
<tr>
<th>Phase</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase - I</td>
<td>Establishment</td>
</tr>
<tr>
<td>Phase - II</td>
<td>Consolidation</td>
</tr>
<tr>
<td>Phase - III</td>
<td>Growth</td>
</tr>
</tbody>
</table>

It might be mentioned that the first half of the sixties was a remarkable period, when the motivation level of employees were quite high. The manpower was imbued with a sense of pride in contributing to national glory. However, this spirit was short lived and the period
succeeding this proved to be a dismal failure. This was so mainly because the period from 1966-67 was the years of peril for industry, when industrial relations were at their worst ever, resulting not only in loss of production but also damage to vital equipment. The pace of development however increased in the waning years of sixties and continued till 1972-73. The performance of the company can be reviewed on the basis of the above.

5.8.2 Production: Production figures indicate that Bhilai reached one million tonne hot metal production in 1961-62 and 1.03 million tonne ingot steel production in 1962-63. Durgapur reached a million tonne in hot metal only in 1962-63, and achieved 1.01 million ingot tonnes in the following year. Rourkela’s performance deteriorated. However, in March 1963 Rourkela achieved the million tonne mark in hot metal and ingot steel. It was however observed that modern management techniques were not adopted at the plants and that delays encountered in the commissioning of the units could have been avoided, had modern methods been used.

The total production of HSL could be had from the figures furnished in the Table below, for the three distinctive periods, in respect of hot metal, ingot steel and saleable steel.

<table>
<thead>
<tr>
<th>Table 5.4 Production at HSL</th>
<th>(Mil. tonnes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hot Metal</td>
<td>Ingot Steel</td>
</tr>
<tr>
<td>1958-59 to 1960-61</td>
<td>2.399</td>
</tr>
<tr>
<td>Average / Yr.</td>
<td>0.700</td>
</tr>
<tr>
<td>Average / Yr.</td>
<td>3.249</td>
</tr>
<tr>
<td>1966-67 to 1972-73</td>
<td>29.558</td>
</tr>
<tr>
<td>Average / Yr.</td>
<td>4.223</td>
</tr>
</tbody>
</table>

Source: Statistics for Iron and Steel Industry in India, HSL, Ranchi, 1974, P-6

It may be noted that ingot steel production from HSL plants was an average of nearly a third of a million tonne per annum, for the three-year period ending 1960-61. It reached an average per
annum of 2.7 million tonnes in the next five years up to 1965-66 and touched the 3-million tonne mark in 1965-66. With expansions having come in during Phase II, the average annual ingot output reached about 3.7 million tonnes and the highest 4-million tonne annual mark was made only in 1972-73. In respect of saleable steel for the market, the 2 million mark was achieved in 1963-64 and the best under HSL was 2.987 million tonnes in 1972-73. In 1972-73, HSL produced 2.70 million tonnes of finished steel in the total all-India production of 5.324 million tonnes including secondary production or 50.7 percent of the total. Thus, it had taken six years for the three steel plants to come up to the annual production level of 3 million tonnes at the one million stage. HSL’s total contribution to the economy, during its effective 19 years of existence, had been about 13 million tonnes of pig iron for sale and 29 million tonnes of saleable steel. Though the quanta were sizeable, the contribution could have been more handsome but for constraints.

During the period of its existence, the HSL management made serious attempts to improve the level of production and profitability. The 18th annual report of HSL for 1971-72 attributed it to autonomy at the plant level with greater delegation of powers and the adoption of the policy of management by objectives. Nevertheless, other measures introduced earlier like the introduction of the production bonus scheme from 1st December 1961, and the unitwise incentive scheme launched in 1963-64 and its review by the Administrative Staff College, Hyderabad, also helped HSL in its attempt to perform better. HSL emphasized upon product diversification and entered into an agreement with Tor Isteg Steel Corporation, Luxemburg, for manufacturing Tor Steel. It was followed by consumer education effort. An agreement on steel technology was entered into in November 1969, with Tyazhpremexport, for the latest steel developments to be made available through Gipromez, Moscow, and operated through CEDB, strengthened the technological base at the plants. In view of the aging plants, capital repairs
and modernization schemes were taken up. It was recorded in the annual report referred to above that HSL rededicated itself to greater service to the nation.

5.8.3 Export: HSL made consistent efforts for export of pig iron initially and steel products later, particularly towards the close of the sixties. Accent on product quality was emphasised, as, for example, pipes from Rourkela had to conform to rigid API specifications. The export of rails from Bhilai to more than half a dozen international specifications needs special mention. Export outlets were sought out from the far corners of the globe. The highest ever export was in 1970-71, valued at Rs.53 crores. The value of total exports of HSL from 1958-59 to 1972-73 stood at Rs. 233.9 crores, which in contrast to subsequent performance was indeed admirable. It should be remarked that rails constituted a significant segment of the exported steel categories and earned for India a name in the international market.

5.8.4 Capacity Utilisation: The ingot steel capacity of the three plants was initially 3 million tonnes. With expansion to 2.5 million at BSP, 1.8 million at RSP and 1.6 million tonnes at DSP, the total capacity stood at 5.9 million tonnes on completion by the late sixties. Capacity utilisation in terms of ingot steel was as follows:

![Figure 5.1 Ingot Capacity Utilisation](image)

Source: Statistics for Iron and Steel Industry in India, 1960-61 to 1972-73
It is evident that capacity build-up was excellent in the early sixties, reaching 101 per cent of capacity utilisation by 1964-65. There was a gradual fall in achievement of rated capacity in the subsequent years. In 1972-73 the achievement of the rated capacity was at 68 per cent, which represented a total production of 4.01 million tonnes, against the 5.9 million tonnes capacity. Despite this average for the steel plants, individual units like Bhilai and Rourkela achieved their best ever production only in that year, whereas Durgapur registered its peak performance in 1964-65 only. Capacity utilisation with its immediate impact on profitability naturally assumed considerable significance in comments in the Parliament and by the press and could only be alleviated through fond hopes of a better tomorrow.

It was seen that the rated ingot capacities of 1.8 million and 1.6 million tonnes at Rourkela Steel Plant and Durgapur Steel Plants respectively could not be reached. It the capacity was derated at Rourkela and Durgapur to 1.4 million and 1.2 million tonnes respectively. Though Bhilai did not question the capacity rating of 2.5 million tonnes, it could attain the best ingot production of 2.37 million tonnes in 1977-78 only, while Durgapur did its best of 1.09 million tonnes in that year. Rourkela had touched 1.50 million tonnes in the previous year. The peak performance of the plants was attributed to an excellent industrial climate which prevailed for about three years from 1975-76 to 1977-78.

5.8.5 Productivity: Productivity is classically defined as the efficiency with which resources are converted into goods and services. It enters into almost every economic activity such as investment, output, prices, employment and so on. In the case of HSL also, productivity attained increasing importance. During the assessment years for HSL, significant labour productivity was only achieved in the beginning of the seventies. The following figures provides the details of labour productivity in three steel plants for three years ending 1972-73 and reflect upon the performance of HSL in the period under study.
It is apparent that Bhilai had the best labour productivity of 74 ingot tonnes per man-year, while Rourkela had 55 and Durgapur only 33. In terms of saleable steel also, Bhilai’s performance was the best of the three plants. It also suggested that a conducive industrial climate is essential for efficient production. Contrarily, while Durgapur, with all other efforts could not resolve the industrial problems that it faced owing to industrial unrest, Bhilai registered high labour productivity.

5.8.6 Management: Government of India had some experience in managing directly, or through some agency the ordinance factories, the railways, and the PWD. But it was the first time that it had ventured into the area of managing giant public sector steel plants. Government had a rich resource in its bureaucracy and when top managerial needs arose in the emerging public sector steel industry, the Government immediately entrusted its bureaucracy with the task of managing steel plants. Further, initial operational heads of departments were drawn from the two private sectors units. The top functionaries due to lack of experience could not manage the sheer magnitude of the jobs assigned to them. The styles of management adopted in their own parent establishments were also widely different. This added to the confusion in managing HSL efficiently.

5.8.7 Sales: Steel is a basic input to a wide range of industries, especially in a developing economy. The availability of steel in the country is made up of domestic production and augmented by import. The demand for steel is highly specific and somewhat inelastic with
respect to price. The price of steel has been under the control of the Government, since the inception of the industry. As the Government was a major buyer, it was interested in keeping the price low, especially when the private sector only was engaged in steel production. Further, control was established over the distribution of steel, too. In such a situation it was only sales that was done, as market forces did not have free play. It was therefore that HSL started a Central Sales Organisation to begin with and later evolved into a full-fledged marketing organisation. The demand, distribution and pricing of steel by HSL for the period 1959-60 to 1972-73, were affected by governmental control and failed to contribute to the growth of the company.

5.9 MANAGEMENT OF CHANGE: THE HSL EXPERIENCE:

The near two decades of management of the public sector steel industry by HSL makes an interesting study of the process of management of change in the company. It was not conducive to business efficiency to induct in the initial years bureaucratic methods into the administration of HSL. This had become a legacy, which was difficult to shake off. But then, the early professionals of the public sector concept were more concerned with the new social order it was supposed to usher in, rather than earning a reasonable return for the enterprise. Even by the early sixties, it has been that there was little chance for policy discussion as the Board could seldom rise above its own detail. It was also felt that this first experience of working with a Government undertaking was the whole New World of non-management and a world of non-systems. In order to have a broad based Board, also comprising industrialists and economists, HSL had endeavoured to bring in a business like approach to problems. However, it failed to give results.

Change is perceived to give life. However the changes initiated in HSL tended to defeat the purpose for which it was intended. It was because it was purposeless and often too many in
number. Policy changes, which emanated at the ministry level, left the plant personnel bewildering. It was proved by performance of the mid-sixties in the plants that autonomy at the plant level and policy evolution at the head office level was highly productive. This was reversed later, though with greater freedom at decision making at the plants, to bring in highly effective control at the head office. No doubt, this also was effective only for a short period. It would appear that change was introduced in HSL just for the sake of change. Organisational growth and stability demand continuance of policy and continuance of personnel at the top for a sufficiently reasonable time to deliver the goods. The fact that organisational stability and growth requires continuance of a policy supported by a firm structure was not understood by the scions of HSL and this led to a situation that worked against the fundamental objective of managing change in the organisation.

HSL was in active existence for a period of about 19 years. During the near two decade period, the performance highlight was the establishment of the three public sector integrated steel plants, the alloy steels unit and bringing them into regular production. Their expansions were also completed. This, in itself, was a mighty job well done. On the plank of evaluation of its performance by the twin related factors of production and profit, there were shortcomings. These were not a little due to external forces, which impinged on HSL's performance. It is, no doubt, a sad story that when HSL for all practical purposes ceased to be in business, it left a legacy of a whopping loss.

The reasons for the continuing loss by HSL had been explained earlier. One of the principal reasons for the losses is the patently unremunerative prices fixed for steel products, at the instance of the Government, while tonnage production was very good. From the late sixties, it was clearly the inescapable industrial relations scene, which spelt the doom for production and profit. It was openly pointed out by many, including the top functionaries at the plants, that
Government at the State or Central level did not lift even a little finger to stem the rot. This gave added encouragement to the belligerent labour to take law unto their own hands, to the serious detriment of equipment and personal safety. Labour productivity was low and Government never made any attempt to link wages or wage increments with productivity. Had the political will been there to insist on higher productivity from labour in return for better wages and benefits, the situation would have been very different. The cumulative effect of rank indiscipline and non-observance of norms fixed was heavy toll on equipment condition and its performance, notwithstanding the continuous doctoring by maintenance. Impartial opinion had stated that the blame for many of the ills which the industry suffered could not be laid at the doors of HSL. On balance, HSL should be credited with the creation of the public sector steel industry in India, in tune with the goals of the Government.

5.10 FORMATION OF STEEL AUTHORITY OF INDIA LIMITED:

Steel Authority of India limited was incorporated on the 24th January, 1973 as a holding company with the objectives of planning, promotion and organization of integrated steel plants and efficient development of iron and steel industry in India. With the restructuring of the company in May 1978, SAIL was assigned the task of managing steel plants in the public sector. The associated agencies like the design organizations, construction company, mineral development etc were separated from the holding company. Today, SAIL is responsible for the management of the integrated steel plants in Bhilai, Rourkela, Durgapur and Bokaro, the Alloy Steels Plants at Durgapur and Salem Steel Plant at Salem. In addition, SAIL is also managing Indian Iron and Steel Company Ltd., Burnpur which is the fifth public sector integrated steel plant in India. Today, SAIL is the largest steelmaker in India and the 7th largest steel maker in the world.
5.11 OBJECTIVES OF SAIL

The objectives of SAIL were derived from the national goals of encouraging and ensuring rapid economic growth through efficient production and supply of high quality iron and steel and allied products at reasonable prices. The objectives stem from the following premises.

1. As a public undertaking accountable to people of India, the company will strive to serve the national interest in discharging its responsibilities and will constantly seek to deserve and enjoy the highest measure of public trust and esteem.

2. In conducting its business with honesty and integrity, the company will also endeavour to function as a profitable enterprise working towards the achievement of a self-reliant and self-generating economy.

3. The company will operate in the highly specialised fields of iron and steel and allied manufacture. It will pioneer in new field of applied science, through the pooling of finest scientific and engineering talents in the environment which will facilitate proper utilisation of their knowledge, interest and skills.

4. The operation of the company will be led by a management group which will command respect of the whole organization for its ability, integrity, sense of justice and approach to problems.

5. A high rate of economic growth sustained over a long period is the essential pre-requisite for achieving a rising standard of living for the people. With this the view and within the limits of resources it can generate, the company will seek to increase investment in basic production capacities and economic and social overheads so as to yield benefits, now and in future.
6. The company will ensure good corporate health by adopting sound management practices, including the establishments and maintenance of a dynamic organizational structure suited to meet present and future company needs; long range planning; product diversification; strong financial control; and comprehensive research and development.

With these basic objectives the company started its operations. It was expected that the company, in its mammoth structure, huge resources and renewed form would shed its shortcomings and provide a strong foundation to the national economy.

5.12 PLANTS/ UNITS OF STEEL AUTHORITY OF INDIA LIMITED (SAIL)

SAIL has the following plants and units:

1. Four Integrated Steel Plants:
   i. Bhilai Steel Plant (BSP)
   ii. Rourkela Steel Plant (RSP)
   iii. Durgapur Steel Plant (DSP)
   iv. Bokaro Steel Plant (RSL)

2. Two Special Steel Plants:
   i. Alloy Steels Plant (ASP)
   ii. Salem Steel Plant (SSP)

3. Central Units:
   i. Research and Development Centre for Iron and Steel (RDCIS)
   ii. Centre for Engineering and Technology (CET)
   iii. Management Training Institute (MTI)
   iv. Central Marketing Organization (CMO)
   v. Raw Materials Division (RMD)
   vi. Environment Management Division (EMD)
   vii. SAIL Safety Organization (SSO)
   viii. Central Marketing Organization (CMO)
   ix. SAIL Consultancy Division (SAILCON)
   x. Growth Division (GD)
4. Wholly Owned Subsidiaries:
   i. Indian Iron and Steel Company Limited (IISCO)
   ii. Maharashtra Electrosmelt Limited MEL)
   iii. Visvesvaraya Iron and Steel Limited (VISL)

5. Corporate Office (consisting of different directorates)

5.12.1 Bhilai Steel Plant:
Bhilai Steel Plant is situated in Madhya Pradesh and employs 51585 employees (1996-97). The plant set up with Russian collaboration with an initial capacity of 1.00 million tonnes of crude steel per year. Set up in the late fifties the plant was expanded to 2.5 million tonnes ingot capacity and is currently operating at 4.00 million tonnes crude steel capacity. The new stream has LD process of steel making, continuous casting of slabs and blooms and a 3600 mm wide plate mill, which is one of biggest of its kind in Asia. The plant specialises in shaped products, mostly sections, merchant products, wire rods, plates and heavy rails. The rail mill of this plant is capable of producing rails to meet the most stringent quality specifications required by customers. The plant has been one of the largest exporters of steel products particularly rails and plates (boiler and ship building quality)

5.12.2 Bokaro Steel Plant (BSL):
Situated in the coal belt of Bihar and employing 46610 employees (1996-97), Bokaro Steel Plant was set up with Russian collaboration in the 1960s. This plant reflects the technological advancement of India in the areas of design, engineering and construction of steel plants. The Indian engineering and equipment suppliers played a major role in setting up of this plant. The plant was envisaged with an initial ingot steel capacity of 1.7 million tonnes and provision of expansion to 4.0 million tonnes stage with an intermediate stage of 2.5 million tonnes. The plant is currently operating at 4.00 million tonnes capacity. This plant is designed to produce
hot and cold rolled sheets, coils and slit coils in various specifications and sizes. It also produces galvanised sheets (corrugated and plain). Its saleable steel capacity is 3.156 million tonnes.

5.12.3 Durgapur Steel Plant (DSP):

Set up in West Bengal in the late 50s with British collaboration, the plant employs 27772 people (1996-97). Set up as 1 million tonne per annum ingot steel capacity plant, it was later expanded to 1.6 million tonnes capacity in 1960s. The plant is a major producer of railways material like wheels and axles, Fish Plates, Sleepers. It also produces light and medium sections, merchant sections and skelp. The plant has been modernised now for better quality of material and more productivity.

5.12.4 Rourkela Steel Plant (RSP):

Commisioned in the late fifties with the assistance of Federal Republic of Germany the plant is situated in Orissa and employs 33372 people (1996-97). It has the distinction of being the first steel plant to be conceived in the public sector. It was the first integrated steel plant in India designed to produce only flat products and the first in Asia to introduce Basic Oxygen Furnace (BOF) process at a time when this process was yet to receive recognition from established steel producers at home and abroad. The plant produces a wide range of flat steel products like plates, hot and cold rolled coils and sheets, galvanised sheets, electrical steel sheets, electrolytic tin plates and large diameter Electrical Resistance Welded (ERW) and spiral welded pipes. The plant was expanded in the late sixties (1965-68) from 1 million tonnes per annum to 1.8 million tonne per annum ingot steel capacity. Modernisation has led to diversification of the plant's product range and the new unit for producing cold rolled non-grain oriented sheets has started.
5.12.5 Alloy Steels Plant:
The special steel plants included Alloy Steels Plant (ASP) and Salem Steel Plant. The former caters to the demands of the defence, nuclear energy, space, railways and other industries like fertilisers and automobiles. The plant was established with an ingot capacity of 100,000 tonnes per year. The latter also produces stainless steel as raw material for the Salem Steel Plant. ASP has developed 250 grades of alloy and special steels over the years to meet the market needs.

5.12.6 Salem Steel Plant
The transition of HSL to SAIL throws light on the process of change that the public sector steel plant underwent after two decades of its existence. If the public sector steel industry was born with the formation of HSL in 1954, the new philosophy for managing the public sector steel industry resulted in the formation of SAIL in 1973. SAIL, however inherited the legacy of bureaucratic approach, inefficient management and inertia from its predecessor. It overshadowed the performance that it sought to exhibit during the period of its existence.

5.12.7 Indian Iron & Steel Company Limited:
The Indian Iron & Steel Company Limited (IISCO), one of the oldest integrated steel plants, started production as far back as 1875 in its Kulti works. IISCO’s Burnpur Steel Plant, initially set up in 1918, began producing steel in 1939. In the late 50s, it expanded to become a one million tonne steel plant. At one time, IISCO’s share were the only ones from India to be quoted in the London Stock Exchange. The company was taken over by the Govt. of India on July 14, 1972 and thus IISCO became a subsidiary of SAIL.

The company produces a wide range of products starting from coke, pig iron to finished steel products mainly heavy, medium and light structurals, light and heavy rails, olain rounds, Tor steel, sleeper bars and various special sections like Z bars, Z-pilings, colliery arch and 8”X 6” joists at its Burnpur plant. Presently IISCO produces 0.4 million tonnes of ingots annually.
5.12.8 Visveswaraya Iron and Steel Limited:

Visveswaraya Iron and Steel Limited (VISL) is a pioneer in the production of high quality alloy and special steels, pig iron and Ferro Alloys. Here steel is produced through BF-BOF-LRF-VD route. The facilities include vacuum degassing, vacuum oxygen decarburisation, ladle refining furnace, continuous casting machine, 1600 tonnes-hydraulic-high speed forging press etc. VISL has an installed capacity of 77000 tonnes of alloy and special steels, 36000 tonnes of mild steel, 20,000 tonnes of ferro-alloys and 205,000 tonnes of hot metal.

5.12.9 Maharashtra Electrosmelt Limited:

Maharashtra Electrosmelt Limited (MEL) is the largest producer of manganese based ferro-alloys in the country with a capacity to produce 100,000 tonnes of ferro-alloys. A fast changeover from high carbon ferro-manganese to silico-manganese and vice-versa in the submerged Arc Furnaces, production of medium carbon and low carbon ferro-manganese through Electric Arc Furnace, sintering of manganese ore fines etc are some of its achievements.

5.12.10 SAIL Consultancy Division (SAILCON):

SAILCON is the division of SAIL that explores possibilities of providing technological and managerial consultancy to other organizations. The services from SAILCON includes design and engineering studies, project management studies, technical services and HRD and management services. In addition to executing a wide range of assignments in India, SAILCON has customers in Egypt, Iran, Philippines, Nepal, Taiwan and Thailand.

5.12.11 Central Marketing Organization:

All SAIL mild steel products are marketed in India through the Central Marketing Organization (CMO). To ensure quality and prompt despatch of products, CMO keeps in touch with the producing units as well as with the Transport and Shipping departments. It operates through an extensive network of 43 branch sales offices and 4 stockyards, dockyards,
consignment agents and extension counters geographically demarcated into 6 regions. CMO
has three basic wings – Domestic sales done by the marketing function, Exports, managed by
the International Trade Division, and Transport and Shipping that ensures efficient transport of
products from the plants to the destination.

5.12.12 Research and Development Centre for Iron and Steel:
Research and Development Centre for Iron and Steel (RDCIS) is the corporate R&D centre of
SAIL. It undertakes R&D projects in diverse areas of iron and steel technology under the
categories of basic scientific research, plant performance improvement, investigation and
consultancy assignments, equipment and instrument design and major technology
development. The major efforts of this unit are directed towards cost reduction, quality
improvement and value addition to new products and technology. It also helps in steering the
technology strategy of the company making it more competitive.

5.12.13 Centre for Engineering and Technology:
Centre for Engineering and Technology (CET) is the in-house design, engineering and
consultancy unit of SAIL. It has been providing services in the areas of project consultancy,
design and engineering, project evaluation and appraisal, project management and technology
upgradation within and outside SAIL. Some of the major projects engineered by CET in SAIL
are the first indigenously designed 530 cu.m blast furnace at VISL, raw materials handling
facilities for the new sinter plant no. 3 at Bhilai, modernisation of blast furnace at Bhilai and
Rourkela etc.

5.12.14 Raw Materials Division:
The Raw Materials Division (RMD) plays a significant role in exacting standards in supplying
high quality of raw material for production. The division controls seven iron ore, four
limestone, one dolomite and three coal mines. SAIL mines produce around 24 million tonnes
of iron ore, 2 million tonnes of limestone, 0.6 million tonnes of dolomite and one million tonne of raw coal annually.

An extension of RMD, the Central Coal Supply Organization (CCSO) is entrusted with the gigantic task of arranging about 22,500 tonnes of indigenous metallurgical coal and 13,500 tonnes of power coal daily for the steel plants.

5.12.15 Management Training Institute:

The apex training institute of SAIL, Management Training Institute (MTI) is the first ISO 9001 accredited management training institute in this part of the world. This institute is responsible to cater to the managerial training needs of the corporate cadre executives of the company. Having also won the Golden Peacock National Quality Award, the institute is engaged in sharing the latest management concepts and practices to its participants and provides management consultancy. It does management research and develops instruments of learning.

5.12.16 SAIL Safety Organization:

SAIL Safety Organization is an integrated corporate unit that takes care of safety, fire control, occupational health and pollution control services. It coordinates, monitors, promotes and enhances the safety and fire service activities of the steel plants/units/stockyards and mines. A multidisciplinary safety department exists in each plant and mines and helps eliminate safety hazards.

5.12.17 Environment Management Division:

Environment Management Division (EMD) is a corporate level unit monitoring and facilitating the environment management and pollution control activities in SAIL plants and units. Its main activities include generating a environment friendly approach, identifying areas of environmental concern, developing implementation strategy for mitigating measures and
monitoring the execution of projects. With the increasing consciousness about the environment and its preservation, this unit is expected to have a critical role in the future.

5.12.18 Growth Division:

Growth Division helps in manufacture and supply various spare parts and equipment to the SAIL plants and domestic engineering industries by utilising available in-house facilities like Central Growth Works, Kulti, Alloy Steels Plant, VISL and the engineering shops of SAIL plants. Growth Division functions also include effective utilisation of the engineering shops of SAIL plants, and export of spares.

5.12.19 Corporate Office:

The main function of the Corporate Office is to integrate the functioning of plants and units and bring synergy in the total operation of SAIL. This is achieved through various directorates of the Corporate Office dealing in their specialised areas. These directorates are – Operations Directorate, Project Directorate, Finance Directorate, Research & Development, Personnel and Corporate Planning Directorate and Commercial Directorate. The corporate office monitors the activities of these directorates and co-ordinates their activities to bring about the required synergy.

5.13 ORGANIZATION STRUCTURE OF SAIL:

The top organization structure of SAIL consists of the board of directors headed by the Chairman. Each integrated steel plant is headed by a Managing Director, who also are the members of the board of directors. As stated above these functional directors are for Personnel and Corporate Planning, Finance, Commercial, Operations, Research & Development and Projects area. Other members are nominated by the Government of India. Each Director heads a directorate and look after all its activities and is supported by Executive Directors and other executives as per the organizational hierarchy. The organisation structure of the company is
designed to ensure that there is effective implementation of company's strategy and corporate goals are successfully achieved.

5.14 PRODUCTS AND CAPACITIES OF SAIL INTEGRATED PLANTS:

The products and capacities of SAIL integrated plants are as follows:

### Table 5.6 Product Mix: Bhilai Steel Plant

<table>
<thead>
<tr>
<th>Product Mix</th>
<th>Tonnes/ Annum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semis</td>
<td>553,000</td>
</tr>
<tr>
<td>Rails</td>
<td>500,000</td>
</tr>
<tr>
<td>Heavy Structurals</td>
<td>230,000</td>
</tr>
<tr>
<td>Merchant Products</td>
<td>500,000</td>
</tr>
<tr>
<td>Wire Rods</td>
<td>400,000</td>
</tr>
<tr>
<td>Plates</td>
<td>950,000</td>
</tr>
<tr>
<td><strong>Total Saleable Steel</strong></td>
<td><strong>3,153,000</strong></td>
</tr>
</tbody>
</table>

### Table 5.7 Product Mix: Durgapur Steel Plant

<table>
<thead>
<tr>
<th>Product Mix</th>
<th>Tonnes/ Annum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Merchant Products</td>
<td>260,000</td>
</tr>
<tr>
<td>Structural</td>
<td>160,000</td>
</tr>
<tr>
<td>Skelp</td>
<td>230,000</td>
</tr>
<tr>
<td>Wheels and Axles</td>
<td>40,000</td>
</tr>
<tr>
<td>Semis</td>
<td>898,000</td>
</tr>
<tr>
<td><strong>Total Saleable Steel</strong></td>
<td><strong>1,588,000</strong></td>
</tr>
</tbody>
</table>

### Table 5.8 Product Mix: Rourkela Steel Plant

<table>
<thead>
<tr>
<th>Product Mix</th>
<th>Tonnes/ Annum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plate Mill Plates</td>
<td>299,000</td>
</tr>
<tr>
<td>HR Plates</td>
<td>150,000</td>
</tr>
<tr>
<td>HR Coils</td>
<td>340,000</td>
</tr>
<tr>
<td>ERW Pipes</td>
<td>75,000</td>
</tr>
<tr>
<td>SW Pipes</td>
<td>55,000</td>
</tr>
<tr>
<td>CR Sheets and Coils</td>
<td>433,000</td>
</tr>
<tr>
<td>Galvanised Sheets (GP &amp; GC)</td>
<td>160,000</td>
</tr>
<tr>
<td>Electrolytic Tin Plates</td>
<td>85,000</td>
</tr>
<tr>
<td>Silicon Steel Sheets (CRGO &amp; CRNO)</td>
<td>73,500</td>
</tr>
<tr>
<td><strong>Total Saleable Steel</strong></td>
<td><strong>1,671,000</strong></td>
</tr>
</tbody>
</table>

### Table 5.9 Product Mix: Bokaro Steel Plant

<table>
<thead>
<tr>
<th>Product Mix</th>
<th>Tonnes/ Annum</th>
</tr>
</thead>
<tbody>
<tr>
<td>HR Coils, Plates &amp; Sheets</td>
<td>2,120,000</td>
</tr>
<tr>
<td>CR Coils &amp; Sheets</td>
<td>1,390,000</td>
</tr>
<tr>
<td>GP/ GC Sheets</td>
<td>170,000</td>
</tr>
<tr>
<td>Tin Mill Black Plates</td>
<td>100,000</td>
</tr>
<tr>
<td><strong>Total Saleable Steel</strong></td>
<td><strong>3,780,000</strong></td>
</tr>
</tbody>
</table>
The fluctuating trend in DSP may be attributed to the low capacity utilisation, high cost of production and low labour productivity accruing due to heavy loss of man-days from industrial relation problems. The industrial unrest in DSP seems to have a domino's effect and influenced all departments of the steel plant. RSP's performance was not better either. Though it initially registered growth during 1973-74 to 1977-78, it could not sustain this trend thereafter and like other plants, resulted in instability and unimpressive performance.

5.15 SAIL'S EFFORTS TO MANAGE CHANGE:
A series of workshops were conducted at the corporate level which were organised with the intention to give direction to the company’s growth and suggest ways in which SAIL could manage change successfully. These workshops could be described as under:

5.15.1 Priorities for Action (January 1986)
The first corporate workshop was held in January 1986 during the tenure of Mr V Krishnamurthy. This was the first formal on the part of management to anticipate change and manage it. The workshop aimed at changing the image of the company from an unsuccessful company to one which was aiming higher for a glorious future. The preamble asked the basic question whether SAIL could have done better? Thus, an attempt was made to find an answer to this question and areas were identified where the company should have done better. Accordingly, objectives of this workshop were enunciated to achieve this end. These objectives – improving the work culture, making optimum use of installed facilities, increasing productivity, generating profits through control of costs and providing better customer service, were implemented for action.

Improving the work culture: It was believed that an organizational culture is largely determined by the working systems and practices adopted by its members and the kind of attitudes prevalent in the organization. It was felt that over the years, SAIL has tended to
reconcile itself with certain undesirable work practices, which have prevented it from reaching its full potential. Thus, necessary to change its work culture for yielding results. This was thought to be possible through excellent team work, information sharing, human touch, job enrichment, discipline, operational consistency and harnessing human resource.

**Making optimum use of installed facilities:** In 1986, SAIL’s record in capacity utilisation was dismal. Inspite of investing colossal sums of money in installing production facilities, results were not forthcoming. It was therefore felt that there was an urgent need to ensure upkeep of equipment and utilising the full potential of its captive resources for achieving production targets.

**Increasing productivity:** It was observed that the input costs and wage levels have been rising steadily. All inputs – capital equipment, material and manpower have over the period of time yielded decreasing results. It was therefore thought that achieving higher production is not enough. It is necessary to set higher standards of productivity, quality and economy in operations. This is necessary to offset the rising cost of production. This could be achieved through attention to the quality of raw material, adherence to technological discipline, sustaining quality through process control, research and development and productivity through people.

**Generating profits through control of costs:** During 1986, SAIL believed in the philosophy of generating profits through control of costs rather than by adjusting prices. Most of the cost except of rail freight, purchased coal and power, excise duties and development funds, were within SAIL’s control. It was believed that any increase of cost of inputs should be absorbed by SAIL through higher levels of production and productivity and this should be possible through energy conservation, inventory management, value engineering, implementation of projects and continuous monitoring of activities at all levels.
Providing better customer service: Customer became the focus of attention for SAIL during the 1980’s. SAIL started realising that a culture of customer service was necessary for maintaining the pace of growth in the market. The issue that it specified for the same was generating steel demand, ensuring committed delivery, improving product quality, stockyard development and keeping customers satisfied.

In this important corporate move, the management of SAIL stated that for far too long, SAIL had reconciled itself to a low profile for itself. With the changing times, the hope and aspiration of people have grown. SAIL had to meet these aspirations. To fulfil these aspirations, steel had to provide a base as well as pillars on which to build prosperity. It, therefore, pledged full dedication to the sense of purpose and direction which alone could lead to a fulfillment of the final objective – an economically strong country.

5.15.2 SAIL – The Unfinished Agenda (September 1988)

Since 1986, through a series of planned interventions, SAIL attempted to create an environment for growth and development. The second in this series of corporate workshops took place in 1989. Through a stock taking exercise, the top management set the company to assess the results of their efforts. It was felt that the overall impact of the change initiatives have not been to the desired level. The observations on the same are as follows:

Organizational culture: It was observed that there were some sections where production was suffering, discipline was dilute and work practices were discouraging. Regarding manpower and utilization, it was felt that some managers were still pressing for more unskilled labour. Redeployment was less, and employee education and training was taking a back seat. The implementation was about restructuring or organization and systems had been slow and were not enough to take care of the pressures of the business environment. Commitment to the purpose was less and safety consciousness was needed at all levels. Efficiency and
commitment was not much. It was felt that there were pockets of hierarchy which were averse to the new approaches. Innovative approaches and attitudinal change is essential.

**Production and Productivity:** Regarding production and productivity, it was felt that impressive as they might seem, the efforts so far have only been helped the company to arrest a deteriorating situation. The company hoped to go a long way to achieve desirable levels of productivity and optimum benefits from the installed facilities. It was pin pointed that was needs to be done was operational consistency and growth, maintenance and upkeep of equipment and quality of material produced which could be possible only through strict adherence to technological discipline.

**Marketing and customer service:** Providing better service to the customers was one of the priority items in the earlier corporate workshop. The first task of the company was to bring about a new customer orientation in terms of policies, systems and attitudes of employees. This applied not only to the marketing personnel but also the production and service functions as well. However, it was observed that there were still a number of areas where further improvements were needed. In parts, progress was slow and efforts needed to be intensified. These areas included inability to meet market demand and also delays in supplies, distribution bottlenecks at the stockyards and transportation problems, poor market information and customer service.

**Finance and budgetary control:** It was observed that cot reduction and profitability measures have given results. This included improvement in product mix, higher inplant transfers, improvement in techno-economic parameters particularly energy consumption, optimisation of production from captive facilities thereby reducing purchase from outside sources, improvement in labour productivity and control of overheads, especially over time and
demurrage. However, further thrust was required in the areas of cost control and profitability, budgeting, investment decisions and working capital management.

**Growth Plan Implementation:** In “Priorities for Action”, there was much emphasis on the importance of planning. Planning had been restricted to a few areas and it was expected that it should be an integral part of every manager’s job. Implementation of strategy needs to be reviewed taking into consideration the massive investment plans concerning modernisation of Plants and the desired outputs. It should also be backed up by a technical orientation so as to make products the best available in the market. It said that modernisation of mind was necessary to successful implementation of modernisation plans.

It was therefore reiterated that it was necessary not only to consolidate change, it was essential for the company to make change permanent and irreversible. One thing was clear. SAIL had to move forward and that too quickly. All round competition was increasing with latest technology and higher standards of quality and productivity. SAIL had to gear up fast to meet these challenges or it would perish.

**5.15.3 Strategies for Managing Change (March’ 93)**

The Directors’ workshop on Strategies for Managing Change was the third workshop conducted by the top management of the company to manage change in SAIL. The workshop was a clear indication of the fact that inspite of the strong position of SAIL in the market, there was a long way to go if the company wanted to sustain its position as the market leader. The changing business scenario was leading to certain changes in the profile of the market which had direct implications on the working of the company. These changes were:

- Increasing competition. It was felt that no product would enjoy monopoly and selling would become tougher
- Customers would demand international quality standards
There would be a continuous pressure on profit as prices would become competitive and input costs would increase.

Shortfall in resource generation would adversely affect company's plans for growth and modernisation, and therefore, its position as a market leader.

Accordingly, the workshop deliberated on the issues and SAIL adopted a vision statement. To achieve this vision, a set of guiding principles, medium term goals and corporate strategies were also evolved. The same is enunciated below:

**Vision Statement:** Achieve market leadership and prosper in business through satisfaction of customers by continual improvement in quality, cost and delivery of products and services.

**Guiding Principles:** People are number one resources. Investment must therefore be made in their development to enable them to meet the challenges through deep commitment, superior competence, willing cooperation and concern for them. Customers were the centres of all activities and the company must strive to produce material to satisfy them. Quality should be strictly adhered to as this was the most critical factor for marketing success. In a competitive environment, the company could prosper only through improved productivity of all resources. It is a multi-technology company and hence it should strive to continuously update its technology and exploit its resources to the maximum. It must be a global player and should make its presence felt in the export market through continuous improvement and product diversification. SAIL must produce high standard of health and safety for its people. Above all, SAIL must remain a good corporate citizen and promote environment friendly operations and practices.

Accordingly, the corporate strategies hinged upon three critical areas – People, Product and Profit. People were again considered the greatest resource and to maximise contribution from people, there was a need to concentrate on building competencies, commitment and a culture
of excellence. It was thus thought of that managers must create a culture of excellence. They must be responsible to lead and facilitate transition. The organization structure must be flat and flexible. Careful succession planning was important for continuity. There had to total commitment of managers to the task. If productivity had to be achieved through modernisation, there had to be a corresponding modernisation of mind as well. In order to attain high degree of excellence, all must adhere to organizational, technological and personal discipline.

Leadership in customer satisfaction was the ultimate goal of all product strategies. The company must therefore produce to market demand and move towards the goal of producing value-added products. Product quality had to be improved and there should be an all out effort for producing the most cost-effective steel in the country. Product delivery schedules had to be followed strictly, and customers should develop confidence that SAIL delivered in time. There should also be an innovation to serve the customer better.

It was thought that profit was essential for sustenance and growth of the company. To achieve the same, strategies must be developed in the areas of timely implementation of projects and short gestation periods, turnaround of loss making units, diversification of business, improvement in contribution from service units and international trade. It was decided that the objective of all profit strategies should be to maximise generation of resources required to achieve the company’s vision.

5.15.4 Effective Implementation of Corporate Strategies (November '93)

A number of changes were introduced in the Directors’ Workshop on “Strategies for Managing Change. However, there was a gap between intentions and achievements. This was discussed in detail in the Executive Directors’ Workshop held in October ’93 and the follow-up workshop in November ’93. These workshops were preceded by in-depth analysis in several core groups whose findings formed the basis of discussions in the workshops. The discussions
and the recommendation of the core group were contained in the document “Effective Implementation of Corporate Strategies”. The document detailed the facilitating factors and the obstacles faced in the implementation of “Strategies for managing Change”. These factors were:

**Facilitating Factors**

- SAIL had a reservoir of skilled and experienced employees
- Managers are exposed to good practices being practiced abroad
- People in the company are highly responsive to change and have pride in the organization.
- There is a respect for hierarchical authority, and normally, people respond well to leadership initiatives
- Good track record and good corporate image of SAIL had enhanced the level of confidence of employees
- SAIL had continuously invested in additions, modifications and replacement schemes and in modernisation. Facilities are available, full exploitation of which would give in opportunity to improve results and a flexibility to respond to changing demands of the environment.
- SAIL has an established system of planning, like Annual Performance Plan, Inventory Control Systems, Computerised Maintenance management System, Management Trainee Induction Scheme in HRD and many more. If properly used, they could give desired results.

**Obstacles:**

- SAIL’s planning process lacked vigour. Most of the plans only spell out “what” to achieve. They are, at best, statements of intentions. The “how” part of planning is often missing.
• Congruence between tasks, targets and resources is generally not ensured during planning. Normally, unlimited resource is assumed and resource planning is not given proper attention.

• There was a tendency to by-pass plans, systems and technological processes for achieving quick results.

• There was a tendency to accept sub standard work

• Lack of teamwork and coordination and lack of internal customer orientation inhibits implementation of plans to a substantial extent. Inadequate problem solving capability adversely affected the progress of implementation. Lack of systematic and database monitoring was another major constraint.

• Excessive hierarchy, resulting in dilution of responsibility and accountability caused distortion in communication and delays in implementation.

To eliminate the above, it was decided that there was a need for an internal customer orientation of employees. It was also felt that improved systems of planning and monitoring in all processes by total involvement of employee commitment would enhance the quality of work and productivity. Investment in employee competence, intrapreneurial leadership and an internal action for managing the external environment was also felt to be essential for eliminating the obstacles being faced by the company now. There was a need for ACTION to convert the plans into results. Unless effective actions were taken, NOW and FAST, the company might face disaster.

5.15.5 Achieving Leadership in Customer Satisfaction (April’ 94)

This workshop deliberated on the issues relating to sustaining market leadership through serving the customers better. It was felt that it was time to strengthen the company for forging ahead in the competitive race. It reaffirmed the vision statement and guiding principles and
said that there were areas where SAIL had made little progress and where both direction and pace needed to be accelerated. These areas were consistency in eliminating surface defects, packaging, movement and handling of material non-fulfilment of contractual obligations, customer service in terms of faster truck turnaround time in the stockyards, less time being spent by marketing people in the field, complaint settlement, creating of new markets, product development, brand management and close involvement of shop-floor people with the market. Accordingly, the workshop spelt out the very definition of customer satisfaction and identified seven dimensions for improvement customer care. These dimensions were consistent quality, committed delivery, customised product mix, contemporary products, competitive price, complaint settlement, and culture of customer service.

5.15.6 Cultivating a Culture of Customer Satisfaction (June '95)

A stocktaking exercise was undertaken by the company during April 12-15, 1995 wherein it was observed that besides having excellent results, there could still be gaps to be fulfilled. The workshop also critically examined the findings of the survey conducted amongst employees and customers. It was realised that the changes were led from the top and there was a need to institutionalise the changes through cultivating the right culture. Therefore a set of core values and norms of behaviour were developed for the company. These were discussed in a workshop held in Ranchi on May 10, 1995 wherein these norms of behaviour were validated. It also indicated changes in the systems and structure. The four core values were spelt out as customer satisfaction, concern for people, consistent profitability and commitment to excellence. Cultural values that needed to be weeded out, nourished and created, were also discussed. It was also pointed out that the role of leadership was critical in bringing about the desired culture in the organization.
By 1996, SAIL realized that all corporate workshops conducted till now were integral part of the basic thrust to become highly customer oriented and profitable market leader in steel industry. It was also felt that the above had yielded results, especially in terms of improved profits and turnover. Since these initiatives were started, production had increased by 12% and sales turnover increased by about 50%. The company’s image had also improved and SAIL was being perceived as managing change effectively. SAIL realised that while these successes had built confidence, it was also important to recognise that in a number of cases, its performance had been less than what was targeted. The areas included lagging customer relationship, quality and time and cost overrun of modernisation programmes. SAIL recognised that processes influence performance. Process innovation like internal customer satisfaction model for planning, market segmentation and planning process, MOU with key customers etc. had given good results. However, areas like micro planning, monitoring, delivery of products, adherence to standard operating practices and standard maintenance practices continued to be weak areas in implementation and needed renewed thrust.

SAIL, in order to attain its vision, needed to be a globally competitive company. For that it must produce world class products, remain the lowest cost producer, ensure just-in-time delivery and have systems and practices that would enable it to perform better than competitors. To remain globally competitive, the workshop decided to benchmark itself with the best steel manufacturers world wide in the critical areas of customer satisfaction, productivity and costs, project implementation, technology and competence of human resources. The workshop prioritised areas for achieving significant performance improvement in the next two years. These priorities were quality, productivity and delivery. Making process improvements in technology, management, project implementation, investment and competence enhancement could attain improvement in these areas. The workshop also
reiterated the importance of sound systems, structure, culture and leadership for attaining global competitive competitiveness.

5.16 MODERNISATION EFFORTS IN SAIL:

SAIL ventured into modernisation of three of its major ISPs to keep pace with the changing technology and resultanty its impact on productivity. These modernisation efforts were as follows:

**Bokaro Steel Plant:** The modernisation (Phase-I) of Bokaro Steel Plant (BSL) was approved by the Government in July 1993 at a cost of Rs. 1625.79 crores (base date 1st qtr'93) with FE component of Rs. 283.50 crores). The revised cost of Rs. 1792.90 crores (base date 1st qtr'94) with FE component of Rs. 301.07 crores was approved by the government in August 94. The objectives of BSL modernisation were: to improve yield, to conserve energy to improve quality of finished products, to effect economy in the cost of production and to reduce environmental pollution. After completion of modernisation, it was expected that production of saleable steel from BSL would increase from 3.19 MT/Yr, yield of saleable steel from liquid steel from 78.20% to 84.00%, labour productivity from 99.51 TCS/Man/yr to 113.81 TCS/Man/Yr and energy consumption for HR products to go down from 0.905 Gcal/T to 0.576 Gcal/T. The major facilities envisaged under modernisation were reconstruction of existing steel melting shop No. 2 to increase the liquid steel capacity from 1.84 MT/Annum to 2.25 MTPA, installation of 2 nos. double strand slab casters, partial upgradation of 2000 mm Hot Strip Mill and related service facilities.

**Durgapur Steel Plant:** The modernisation programme at DSP was approved in Feb' 89 by the government at washing cost estimate of Rs. 2667.56 crores (FE-Rs 685 crores) with a base date of 3rd qtr'88. The anticipated cost of the project worked out to Rs. 4867 crores on base date of 3rd qtr' 97. The main objectives of DSP modernisation were to upgrade technology improve
productivity and yield, reduce energy consumption, reduce environmental pollution and reduce cost of production. After completion of modernisation, production of liquid steel at DSP would increase from 1.19 MTPA to 1.876 MTPA. Blast furnace productivity would go up from 0.70 T/Cum/Day to 104 T/Cum/Day, labour productivity from 46 TCS/Man/Year to 96 TCS/Man/Year and energy consumption upto billet production would go down from 11.38 G/CL/T to 8.30 G/Cal/T. DSP modernisation is implemented through 16 well defined packages out of which 6 are global and 10 are indigenous.

**Rourkela Steel Plant:** The modernisation of Rourkela Steel Plant was approved by the Government in October '89 at a cost of Rs. 2461 crores with a base date of 4th qtr '88. Government further approved the revised cost estimate of Rs. 3954 crores in May' 92 with a base date of 1st qtr '92. The objectives of RSP modernisation were to upgrade the technology, improvement in yield and productivity, reduction in energy consumption, improvement in quality of products, reduction in cost of production and reduced environmental pollution. After completion of modernisation, production of crude steel at RSP is expected to rise from 1.40 MT/Y to 1.90 MT/Y, blast furnace productivity from 55 TCS/Man/Year to 97 TCS/Man/Year and energy consumption would go down from 11 G Cal/TCS to 9 G Cal./ TCS.

5.17 PERFORMANCE OF SAIL:

In analysing the performance of SAIL during the period between 1973 to 1985, it would be seen that the growth of the company was mainly on the production front. To this effect, five distinct periods of performance could be discerned for the company:

<table>
<thead>
<tr>
<th>Phase</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introductory</td>
<td>1973-74 to 1974-75</td>
</tr>
<tr>
<td>Favourable</td>
<td>1975-76 to 1978-79</td>
</tr>
<tr>
<td>Dull</td>
<td>1979-80 to 1980-81</td>
</tr>
<tr>
<td>Pick-up</td>
<td>1981-82 to 1984-85</td>
</tr>
<tr>
<td>Mixed</td>
<td>1985-86 - 95-96</td>
</tr>
</tbody>
</table>
As is evident, the initial two years was a phase when SAIL was trying to establish itself as a
compny in its new form. This was followed by a gratifying period of four years, when records
were established on the production front. The next two years witnessed a decline in production,
mainly attributable to external constraints. The last four years showed remarkable ascent,
which incidentally happened to be the terminal year of the sixth plan.

The production trend of SAIL during this period is depicted below:

**Table 5.10 Pig Iron and Saleable Steel Production**

<table>
<thead>
<tr>
<th>Phase</th>
<th>Year</th>
<th>Production – Million Tonnes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Total</td>
</tr>
<tr>
<td>Introductory</td>
<td>1973-74 to 1974-75</td>
<td>2.97</td>
</tr>
<tr>
<td>Favourable</td>
<td>1975-76 to 1978-79</td>
<td>6.47</td>
</tr>
<tr>
<td>Dull</td>
<td>1979-80 to 1980-81</td>
<td>2.31</td>
</tr>
<tr>
<td>Pick-up</td>
<td>1981-82 to 1984-85</td>
<td>4.81</td>
</tr>
<tr>
<td></td>
<td></td>
<td>16.56</td>
</tr>
</tbody>
</table>

Source: Statistics for Iron & Steel Industry in India, Steel Authority of India Limited, 1984, P-234 & 1988, P-189

It is worthwhile to observe that while pig iron is an essential input for foundry industry, this
should not have been produced and supplied at the cost of steel, which could generate more
revenue for SAIL. The average availability of pig iron to the market in the initial period was
around 1.5 million tonnes and went up marginally to an average of 1.6 million tonnes during
the next period.

5.17.1 Production:

The production trend of SAIL during the first decade of its existence makes an interesting
study. The production of 3 integrated steel plants namely (BSP, DSP and RSP) indicated a
mixed trend. BSP registered a mixed trend, whereas DSP and RSP struggled to consolidate
their position in production from 1960-61 to 1972-73. BSL, on the other hand, commissioned
in 1974-75, showed a slow but steady growth. BSP after an initial upsurge in production during 1973-74 to 1976-78 stagnated in the range of 1800 – 1900 thousand tonnes of saleable steel. DSP and RSP seemed struggling to stop their downslide in production. The fluctuating trend in DSP could be attributed to low capacity utilisation, high cost of production and low labour productivity accruing due to heavy loss of manhours from IR problems. The industrial unrest in DSP seemed to have a domino’s effect and influenced all departments of the steel plant. RSP’s performance was no better. Though it initially registered growth during 1973-74 to 1977-78, it could not sustain this trend thereafter and like other plants, resulted in instability and unimpressive performance.

The production figures of SAIL from 1985-86 to 1995-96 was encouraging. From a figure of 5504 thousand tonnes in 1985-86, the figure grew by almost 100% during the next ten years. However, if we analyse the growth of production in the four integrated steel plants separately,

![Production Summary (Saleable Steel)](image)

We will see that while Bokaro Steel Plant and Bhilai Steel Plant registered phenomenal rise in production over the years under consideration, the growth of production did not change much at Rourkela Steel Plant and Durgapur Steel Plant. In fact after some marginal rise in production in Durgapur Steel Plant during 1985-86 to 1987-88, there was a slowdown during the subsequent five years. Only in 1994-95 did DSP indicate a positive growth. In case of RSP, the production was mostly static. This was also a slow overall production growth of SAIL.
5.17.2 Nominal Cost of Production of Saleable Steel:

During 1969-70 to 1983-84, the works cost, nominal cost, and economic cost of SAIL indicates a steady rise. Nominal Cost of Production of Saleable Steel in SAIL is indicative of the fact that during the years 1985-86 to 1994-95, the works cost of the company rose by more than 100% from 4198.2 Rupees per tonne to 113826.50 per tonne. The financial cost on the other hand increased from 5171.10 rupees per tonne to 134658.4 per tonne and the economic cost of production of steel for the company also increased from Rupees 5813 per tonne to Rupees 13784.1 per tonne. These figures reflect the rising cost of production and its adverse impact on the competitiveness of products in the market. This could be an important indicator of the extent of its ability to counter the forces of environment.

![Fig. 5.3 Nominal Cost of Production of Saleable Steel (1969-1996)](image-url)

Source: Statistics for Iron & Steel Industry in India, 1970-71 and 1982-83

5.17.3 Capacity Utilisation:

Capacity utilisation is an important index of performance of a steel plant, especially in a developing economy. It also speaks volumes about the level of application of men and materials towards accomplishment of the basic task of production. The figures given below denoting capacity utilisation indicates a clear profile about how different steel plant under SAIL performed during the first ten years of their being. The performance of all the four steel
plants showed a satisfactory level of capacity utilisation till 1982 but in the two subsequent years, there was a noticeable drop in capacity utilisation. If we relate this trend to the production figures stated above, we get a discernible correlation between the two. However, out of the four steel plants, the performance of BSP and RSP was better than BSL and DSP in this aspect. BSP was the best, and was in the range of over 90% utilisation of its capacity till 1982-83. RSP's performance was around 85% during the utilisation in the above-mentioned period. BSL was lower than these two plants at a level of 70%. DSP, as it seemed, never could hold on to its earlier performance of around 65-70% capacity utilisation the last years of seventies and crashed much below 60% in the later years. It reflects a disturbing trend in the growth of SAIL in the subsequent years. The capacity utilisation of the four major integrated steel plants of SAIL is given in the below given table.

![Fig. 5.4 Capacity Utilisation (1973-1996) (%)](image)


These despatches from different plants during the period 1972-73 to 1982-83 indicate that more or less, all plants failed to increase their despatches to different customers on a constant basis. This may be attributed to the low production during these years. This might also be the reason that the distribution of steel to various sectors of customers had been quite deficient during this period. The only exception had been BSL where the despatches increased with
time and by 1982-83, it touched a figure of 1443 thousand tonnes. It is probable that inspite of the above, SAIL was able to market its products because of its being in the sellers' market.

5.17.4 Sales:
Sales performance is an important indicator of the overall performance of a company. We find that the sales of the company under study is showing a continuously increasing trend. The graph is indicative of this growth trend in sales. However, as we will see subsequently, this is offset by the expenses incurred by the company during the period under study and resultantly we find a decline in profitability inspite of a rising sales graph.

Fig. 5.5 Sales Trend (1973-74 to 1995-96)

![Sales Trend Graph](source: Annual Reports of HSL and SAIL (1970-71, 1974-74 and 1997-98))

5.17.5 Profitability:
The profitability of SAIL during the first decade has been indicated in the below given chart. Though there was a spurt in gross profit during 1978-79 it dropped substantially in the next two years. It again showed an upward trend in 1981-82. However, there was a drastic drop in

![Gross Margin Graph](source: Annual Reports of HSL and SAIL (1970-71, 1974-74 and 1997-98))
A consistent and substantial profit determines the future of an organisation. In this respect, the figures given above give an intriguing picture. While RSP and BSP earned profit during 1978-79 to 1980-81, the performance of DSP and BSL was not encouraging. The year 1981-82 was
even worse when all but BSP were in the red. The overall losses increased during 1982-83, and the latter performance reflects a positive trend.

5.17.6 Labour Productivity:
The figures pertaining to labour productivity is self-explanatory. While BSP productivity has shown impressive growth, followed by BSL, the labour productivity of DSP and RSP of ingot tonnes per man-year is depressing. Perhaps this could be related to the below mentioned details given about the estimated man-days Lost due to Industrial Relations problems. This could also be related to the discouraging production figures of these two steel plants during this period.

![Fig. 5.8 Labour Productivity](image.png)

5.17.7 Estimated Man-days Loss due to Industrial Relations Problems: Industrial strife and resultant loss of man-days affected SAIL’s performance badly. As the data is indicative, the heavy loss of man-days in all the steel plants except BSP, to a great extent, explains the productivity of these steel plants.

![Fig. 5.9 Estimated Man-days Lost Due to Industrial Relations](image.png)

Source: Statistics for iron and Steel industry in India (1996) Steel Authority of India Limited, P-304-305
5.17.8 Financial Performance: The financial performance of SAIL steel plants is the ultimate parameter of its performance. In this respect, the profitability figures of SAIL would be worth study. While the sales increased phenomenally, along with the gross margin, the interest also increased and had noticeable impact on the Gross Profit/ Loss. Another financial variable that played an important role, was the depreciation, as indicated in the figures below. The net profit of the company increased from 52.81 crores to an impressive 1319.00 crores, the earning as a percentage of sales looks dismal during the initial six years. However it increased subsequently and to a whopping 8.97% in 1995-96. This indicates a sound financial health of the company, which could be possible only through a concerted effort of all its activities towards a pre-determined goal.

Profit Before Tax: The profit before tax of the company is encouraging as it shows a positive trend. However, the study may not be complete unless the PBT is studied in relation to the sales and also the net profit graph versus the sales and net worth. The net profit of the company is given below.

![Fig. 5.10 Profit before Tax](source)

Sales to Net Profit/ Net Worth: The relationship between sales, net profit and net worth provides us with an interesting observation. It is evident from the graph that while the sales are going up, the net profit and the net worth of the company is showing a slow growth. This shows that the company is finding it increasingly difficult to increase sales due to the
prevailing competition. This comparison is could also be due to the fact that the company might be facing great difficulty in pushing its products in the market by offering more discounts and dispensations to the customers. The graph is indicative of the increased pressure on the company's sales and suggests a degree of adversity that could be damaging to the company.

**Profit Before Tax to Sales:** The trend with respect to Profit before tax to sales is showing a encouraging growth trend. Though there has been a sharp decline in the years immediately after 1994-95, the graph shows upward trend again and rises sharply in the subsequent years. This indicates a positive sign in sales vis-a-vis the PBT.
Net Profit to Sales: Corresponding to the above the relationship between sales and net-profit reinforces the above-mentioned observation. Though company sales has increased over the years, the net profits has decreased considerably as indicated in the below given graph. This is also a discouraging trend and is indicative of a retrogressive phenomenon that could be against SAIL’s competitiveness in the market.

![Net Profit to Sales Graph](image)

Source: Statistics for iron and Steel industry in India (1996) Steel Authority of India Limited, P- 304-305

Profit before Tax to Capital Employed: There is an upward trend in the ratio of profit before tax to capital employed which indicates a positive trend to some extent. However, this depiction should not be taken in toto and other aspects relating to the net profits of the company and also other ratios must also be considered.

![Operating Profit to Capital Employed Graph](image)

Source: Statistics for iron and Steel industry in India (1996) Steel Authority of India Limited, P- 304-305
Profit before Tax to Average Capital Employed: This is a significant ratio as this ratio seeks to illustrate the condition of company’s profitability. It is also related to the effect of borrowings on company’s profit and to this extent depicts the financial health of the company under study to a great extent. The ratio over the years is given in the graph below.

Financial Charges: Similarly, the inter-relationship between the interest and financial charges and the total loan depicts the extent of financial liabilities of the company. As is evident, the huge loan of over Rs 20,000 crores taken by the company in the last ten years is showing a significant impact upon the financial health of the company and as such is taking its toll. While the Loan, instead of decreasing, is showing an upward trend, the interest burden accruing from the total loans taken by the company in the last decade is increasing continuously. Such an effect is likely to affect the company’s competitive position adversely.
**Total Loans to Net worth:** As indicated below, the total loan and the resultant interest burden is also having a serious impact on the net worth of the company. This is also a negative indication which speaks volumes of the performance of the company and is detrimental to company’s health.

![Fig. 5.17 Total Loans to Net Worth](chart.png)

**5.18 Conclusion:**

It would now be interesting to study whether these extremely good results of the company had been made possible because of efficient management of change by the company or because of favourable environmental forces which steered the company as a powerful company in the steel industry. In the next chapter, we will be seeing the status of the company in the market place immediately after this period and the level of acceptance of its acceptance by its customers.