CHAPTER II
PROFILE OF INDUSTRY

2.1 HINDALCO
2.1-i. Background
2.1-ii. Plant location
2.1-iii. Origin of industry.
2.1-iv. Bauxite mines
2.1-v. Power Generation
2.1-vi. Production
2.1-vii. Export
2.1-viii Research and Development
2.1-ix Management
2.1-x Future Expansion
2.1-xi Hindalco Indal deal
2.1-xii Future out look
2.1-xiii Revaluation of assets

2.2 INDAL
2.2-i. Background
2.2-ii Plant locations
2.2-iii Products
2.2-iv Power generation
2.2-v Export
2.2-vi Research and Development
2.2-vii Management
2.2-viii Expansion plans
2.2-ix Indal Hindalco Acquisition
2.2-xii Help to Indal
2.2-xi Future out look

-:( 21 ):.-
2.3 NALCO

2.3-i Background
2.3-ii Plant locations
2.3-iii Origin
2.3-iv Turning point
2.3-v Production
2.3-vi Management
2.3-vii Expansion plans
2.3-viii Future outlook

2.4 BALCO

2.4-i Background
2.4-ii Plant location
2.4-iii Origin
2.4-iv Products
2.4-v Production facilities
2.4-vi Power generation
2.4-vii Management
2.4-viii Research and Development
2.4-ix Disinvestments

2.5 MALCO

2.5-i Background
2.5-ii Plant Location
2.5-iii Production
2.5-iv Origin
2.5-v Performance
2.5-vi Marketing
2.5-vii Expansion plans
2.5-viii Future outlook
PROFILE OF INDUSTRY

2.1  HINDALCO INDUSTRIES LIMITED
     (HINDALCO)

2.1.i  BACKGROUND:

Hindustan Aluminium corporation Limited which belongs to the Birla group, was incorporated in 1958, in technical cum financial collaboration with Kaiser Engineering Corporation, USA, During 1989-90, the name of the company was changed from Hindustan Aluminium Corporation Ltd. To Hindalco Industries Limited (HINDALCO). Its manufacturing facilities are based at Renukoot in U.P. it manufactures and sells aluminium in primary form as infots and semi fabricated forms like redraw rods, alloy rods, rolled products and extrusions. Operations are vertically integrated from the bauxite stage to the semi abs stage.

2.1.ii  PLANT LOCATION:

HINDALCO has all its plants located at Renukoot, in Uttar Pardesh.

2.1.iii  ORIGIN:

Hindustan Aluminium Corporation Limited (HINDALCO) the largest integrated aluminium producer in the private sector in India, was conceived and promoted by GD Birla in 1958. Set up in record time of eighteen months HINDALCO commenced its operation in 1962, with installed capacity of 20,000 tonnes per years.

Pandit Jawaharlal Nehru the then Prime Minister of India formally inaugurated the plant in January 1963. Going round the extensive works, Panditji saw his dream of brighter future for India taking shape before him. For the great visionary G. D. Birla, it was the fulfillment of a life time desire.
2.1.iv BAUXITE MINES:

HINDALCO meets its bauxite requirements mostly from its captive mines in Bihar and Madhya Pradesh. In Bihar there are eleven mining leases of bauxite. These are spread over three districts, namely Lohardaga, Gumal and Palamau n MP there only one lease-Amarkantaka mine.

Mining operations are carried out at an open cast by forming benches in the flat ground. The soil overburden of about 1.5 mtrs thick is broken and carried for dumping into worked out pits.

Drilling and blasting breaks the bauxite horizon, which is also hard. From the blasted material good quality bauxite is sorted out and stacked separately for loading in go truck for transporting to the railway siding for delivery to Renukoot for further processing.

The reclaimed area is planted every year after the onset of monsoon with sapling of fast growing trees. Slopes of the dumps are countered and then planted with shrubs and some fast growing species for plants. Thus reclamation of mined out area is carried out simultaneously with mining.

Meanwhile, HINDALCO has plans to acquire new mines to meet the future needs and also by way of replenishment. The present mines are expected to last for 12 to 13 years. The company has already negotiated with the Center and the Madhya Pradesh. These are anticipated to meet another 28 years requirements, according to R.K.Kasliwal, joint president (Finance and Commerce.) Thus, HINDALCO is sure of its raw material requirements for the next forty years.

2.1.v POWER GENERATION:

Electricity represents the largest cost of production of aluminium, accounting for approximately 30% of the company’s cost of producing aluminium, in 1999. HINDALCO has is primary source of electrical power in

-:(24):-
its 575 MW coal fired power plant, located at Renusagar, about 25 kms from Renukoot. The plant was commissioned in 1967 with the capacity of 67.5 MW. It has now capacity of 575 MW in 1999 90% of the company’s electricity requirements were meet from Renusagar, balance requirements of power being met through supplies from Uttar Pradesh State Electricity Board. (UPSEB)

The setting up of the Renusagar power plant was again due to the farsightedness of G.D. Birla. To quote his works. “The Renusagar power project is a landmark in the industrialization of Uttar Pradesh. It has enabled Hindustan Aluminium Corporation to increases its production capacity of aluminium which is a strategic raw material in as much as by its production in India, a large amount of foreign exchange has been saved.”

A feature of the Renusagar power plant is its high plant Load Factor (PLF) which is 90 % according to joint president (Technical) P.L. Sharma. Renesagar thus ranks the most efficient thermal power plant ion India. When power generation was started in 1967, the PLF was just 45% As Sharma asserts. From the beginning our main aim has been to achieve high Plant Load Factor. Unless and until the Plant Load Factor is high power generation cannot become economical”.

Interestingly, Sharma points out that when HINDALCO, was started, there was 50 MW contractual agreement with UPSEB and the power tariff at the time was two paise per unit. But Birla always thought in terms of expansion and feared that the plant would face power shortage in course for time. So he decided to have a captive power plant although the cost of power generation was then five paise compared to two paise per unit charged by UPSEB.

The Renusagar power co LTD was merged with the company with effect from 31st march 1992.
2.1. vi PRODUCTION:

HINDALCO is a vertically integrated aluminium producer engaged in all stages of aluminium production from the mining of bauxite ore to the sale of various aluminium products. The company sells primary aluminium in the form of ingots and billets and semi fabricated aluminium products (rolled products, extrusions and redraw rods.)

After the completion of Rs. 1,800 crore-expansion plan in 1998 the production capacity of HINDALCO has increased to 4,50,000 MT per annum of alumina 2,42,000 MT per annum of metal, 80,000 MTPA of rolled products and 13,700 MTPA of extrusions. The capacity of power plant has also been increased to 575 MW besides the installation of a MW co-generation unit. In the year 1998-99 HINDALCO produced 2,40,926 MT of aluminium metal 44,086 MT of rolled products and 11,995 MT of extrusions.

The company took up comprehensive technical up gradation of its bliss hot and cold rolling mills in 1997. The up gradation of the mills was complemented by subsequent installation of state of the art facilities like vertical like vertical ingot cast facilities a scalper soaking pit abd slitting line. Installation of a tension leveler, a rewind line and a new and improved roll former, has substantially broadened the range of its rolled products, improved quality and increased volumes.

For extruded products also modification in its 900 UST extrusion press has ensured better recovery and increased out put. A state of art vertical billet casting facilities has ensured increased volumes of quality feedstock for the extrusion presses besides enabling the company to increase exports of value added billets. As a part of its diversification program a 5000 MTPA aluminium foil plant was commissioned in silvassa. Besides catering to the needs of a large domestic client. Hindalco is exporting aluminium is about 30 countries in the word.
2.1.vii EXPORT:

HINDALCO has entered into the international aluminium market in 1989-90 with FOB value of Rs. 3.7 corore. In just ten years a sizable market has been built for its products in South East Asian countries, Middle East, Germany and our neighboring countries. Asian region is expected to show major growth in international demand for the metal. In 1998-99 the companies export reached to 164.40 crores. Birla said, even as domestic demand will determine the quantum of exports, we will progressively shift the composition of export to increasingly value added products. Such a strategy is aimed at not only improving our export realization but also broadening our market share.

2.1.viii RESEARCH AND DEVELOPMENT:

HINDALCO established its Research and Development in 1963. It recognized by the Department of Science and Technology. HINDALCO’S R and D not only keeps abreast of latest technological developments but its efforts are also directed towards towards energy conservation, cost reduction, quality products, wasted recycling and recovery, pollution control of aluminium.

2.1.ix MANAGEMENT:

The System of Management at HINDALCO is based on the principles of participation involvement delegation and decentralization. The company is professionally Managed with stress on bringing in competent professionals. The idea being the company continually imbibing modernity along with its traditional strength.

The group’s philosophy as enunciated by the Management center is along the following lines.

Participative management by consolation and consensus.
Knowledge integration program.
Skill development program.
System perfection.
Delegation and decentralization.
Human Resources Development.
2.1.x FURTHER EXPANSION:

The company commissioned in March 1997 an additional turbine of 70MW capacity at its Rensuagar Power Plant. It is adding two more turbines of 75 MW each so as to increase the installed capacity of the plant to 575 MW which will make HINDALCO not self-sufficient in power but also enable it to supply excess power to state grid.

Expansion of the alumina refinery capacity from 350,000 TPA to 450,000 TPA in 1997. Increased the smelter capacity to 242,000 TPA in 1997\(^1\).

HINDDALCO commissioned vertical ingot casting machine, a scalper, soaking pits and a slitting line all theses being allied to the rolling. Besides various additions are being made in other departments too to make HINDALCO a supplier aluminium in shapes and sixes. The foil plant as Silvassa is also commissioned in 1998.

2.1.xi HINDALCO-INDAL DEAL:

Hindalco has acquired the entire 54.62% stake of Alcan the Canadian aluminium major in Indial Rs. 1152 crore in March 2000. Subsequently the company enhanced its stake in Indal to 74.62% through an open offer for another 20% stake from the public\(^2\).

The Hindalco Indal combine would be able to derive greater synergies as a result of individual company unique position. Hindalco has a surplus metal capacity but in sufficient alumina and down stream capacity Indal on the other hand is metal strapped and has been resorting to duty free import to convert into down stream products it has large alumina and down stream capacity because of this rather unique position the association between the two companies complements each other well.

The acquisition together with its ongoing expansions would aid Hindalco to meet the emerging Shakings in the domestic more effectively. It will help resolve the input shortages of both the companies and make it the largest
integrated player with presence in product reneging from alumina to foils the acquisition also helps Hindalco save time on setting up a new Greenfield venture to expand capacity. Beside it will have access to value added products. A wider geographical area and a wider customer base. The foils and sheets business of India will go a longway in adding value to Hindalco portfolio.

The combine will be the second largest producer of alumina in the country the largest producer of aluminium metal and virtually control the down stream sector with a market share of around 80% Getting additional capacity will ensure the Hindalco which is operating at almost full capacity can attain volume growth. Post acquisition and expansion the combine will have capacity of 1.3 million tonnes of alimina 4,30,000 tonnes of primary aluminium.

2.1.xii FUTURE OUTLOOK:

HINDALCO is now examining the means of augmenting long term financial resources form international market at low cost in order to put on rail its ambitious expansion programs which in clued a Greenfield smelter in Orissa.

HINDALCO is also trying to spread its wings beyond Uttar Pradesh, the mainstay of its operations so far. The company has signed a memorandum of understanding (MOU) with the Porissa government in March 1997 to establish a mega aluminium complex at an estimated cost of Rs. 10,000 crore. This complex will comprises an alumina refinery of 10,00,000 TPA capacity at Koraput based on the bauxite deposits of Kodangam allipottangi a 250,000TPA smelter at ib Valley and a captive power plant of 600 MW capacity close to the coal deposits of lb Vally, This project is to be implemented through a separate division called Aditya Aluminium and is being overseen by Dr. S.K. Tamotia former chairman of NALCO who has set the date of commissioning by the first quarter of 2001.

HINDALCO also plans to establish some large downstream units in Orissa to process the metal produced by the mega complex. The Company had
short listed three global majors for technology tie up for Orissa complex. These are Aluminium Penchinery of France. Reynolds of USA and Norsky Hydro of Norway. The surprising omission would seem to be Kaiser’s of the USA, which helped to put through the Renukoot smelter. However Kaiser technology appears to have become outdated and HINDALCO had to upgrade it with Revmolds expertise. Aluminium Penchinery has been selected since it is already present in the country through its collaboration with NALCO. Norsky Hydro is also active in India through its participation in an on joint venture, also in Orissa, to manufacture alumina for export markets.

The future outlook for the company is very bright as it is one of the most cost effective aluminium producer in the world. The demand for aluminium will grow faster not only indigenously but in international market as well. There is dearth of the ore. i.e. bauxite and other raw materials in the country. With availability of assured and power at economical rate HINDALCO will be in a position keep down the cost of production. As a result, it is expected that HINDALCO is not likely to face any problem in foreseeable future.

2.1.xiii REVALUATION OF ASSETS:

The company revalued its plant and Machinery as on 1st January 1977 and the surplus of Rs. 61,71,60,821 arising out of it was transferred to Capital reserves.

During 1981, the Company again revalued its plant and Machinery & the net Surplus of Rs. 69,22,98,588 (Rs. 66,83,67,868 on account of revaluation and Rs. 39,30,720 as adjustment of depreciation up to 31st. December 1980 on account of revaluation during 1981) arising out of it was transferred to Capital Reserves.

As on 1st January 1985, the Company Further revalued the Major item of land building and plant Machinery A Surplus of Rs. 83,97,23,344 arising out of this was transferred to Capital Reserves. The accumulated depreciation
thereon upto 31st Dec. 1984 amounting to Rs. 25,15,41,964 (Net) was also adjusted in the accounts by crediting the same to the capital reserve account\(^6\).

The Company again revalued its asset on 1st April 1992 and the net Surplus of Rs. 90,623.37 lakhs arising out of this was credited to revaluation resource\(^7\).

It means out of the 1360.76 Crores Reserves that company has at its credit as on 31.3.1993 Rs. 1121.15 Crores was on account of revaluation of assets.

**TABLE No. 2.1**

**HINDALCO ALUMINIUM COMPANY LIMITED (HINDALCO)**

**EQUITY SHARE HOLDINGS**

**AS ON 05-08-1999.**

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>NO. OF SHARE HELD</th>
<th>% TO TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>I Foreign Holding</td>
<td>22,423,483</td>
<td>30.11</td>
</tr>
<tr>
<td>II Govt Sponsored Financial Institutions</td>
<td>21,493,283</td>
<td>28.86</td>
</tr>
<tr>
<td>III Bodies Corporate under I and III</td>
<td>17,514,625</td>
<td>23.52</td>
</tr>
<tr>
<td>IV Directors and relatives.</td>
<td>170,213</td>
<td>0.23</td>
</tr>
<tr>
<td>V Top 50 Shareholders (Not covered above)</td>
<td>849,674</td>
<td>1.14</td>
</tr>
<tr>
<td>Vi Others.</td>
<td>12,014,692</td>
<td>16.14</td>
</tr>
<tr>
<td></td>
<td>74,465,970</td>
<td>100.00</td>
</tr>
</tbody>
</table>

TABLE No. 2.2
HINDALCO ALUMINIUM COMPANY LIMITED (HINDALCO)
WORKING PERFORMANCE
(Rs. in crores)

<table>
<thead>
<tr>
<th>YEAR</th>
<th>SALES</th>
<th>EXCISE DUTY</th>
<th>PROFIT BEFORE TAX</th>
<th>INCOME TAX PROV</th>
<th>PROFIT AFTER TAX</th>
<th>CONTRIBUTION EXCHEQUR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1989-90</td>
<td>608.07</td>
<td>142.67</td>
<td>93.11</td>
<td>28.70</td>
<td>64.14</td>
<td>171.37</td>
</tr>
<tr>
<td>1990-91</td>
<td>671.63</td>
<td>155.39</td>
<td>100.41</td>
<td>35.60</td>
<td>64.82</td>
<td>190.99</td>
</tr>
<tr>
<td>1991-92</td>
<td>855.57</td>
<td>201.49</td>
<td>150.04</td>
<td>62.00</td>
<td>88.04</td>
<td>289.53</td>
</tr>
<tr>
<td>1992-93</td>
<td>975.57</td>
<td>220.33</td>
<td>192.75</td>
<td>77.25</td>
<td>115.50</td>
<td>297.58</td>
</tr>
<tr>
<td>1993-94</td>
<td>921.69</td>
<td>172.19</td>
<td>222.20</td>
<td>62.50</td>
<td>159.70</td>
<td>234.69</td>
</tr>
<tr>
<td>1994-95</td>
<td>1130.70</td>
<td>174.41</td>
<td>429.95</td>
<td>138.00</td>
<td>291.95</td>
<td>312.41</td>
</tr>
<tr>
<td>1995-96</td>
<td>1422.22</td>
<td>170.53</td>
<td>641.15</td>
<td>240.00</td>
<td>401.15</td>
<td>410.53</td>
</tr>
<tr>
<td>1996-97</td>
<td>1308.26</td>
<td>151.26</td>
<td>506.45</td>
<td>119.50</td>
<td>386.95</td>
<td>270.76</td>
</tr>
<tr>
<td>1997-98</td>
<td>1670.72</td>
<td>197.46</td>
<td>579.30</td>
<td>87.00</td>
<td>492.30</td>
<td>284.46</td>
</tr>
<tr>
<td>1998-99</td>
<td>2013.08</td>
<td>246.09</td>
<td>708.95</td>
<td>147.00</td>
<td>561.95</td>
<td>393.09</td>
</tr>
<tr>
<td>Average</td>
<td>1157.78</td>
<td>183.18</td>
<td>362.43</td>
<td>99.76</td>
<td>262.68</td>
<td>285.54</td>
</tr>
<tr>
<td>Growth %</td>
<td>331.06</td>
<td>172.49</td>
<td>761.41</td>
<td>512.20</td>
<td>872.46</td>
<td>229.38</td>
</tr>
</tbody>
</table>

Source: - Annual Reports of the company for respective years
2.2 INDIAN ALUMINIUM COMPANY LIMITED (INDAL)

2.2.i BACKGROUND:-

Indian Aluminium Company Limited (INDAL) has the distinction of being the first company in India to manufacture aluminium. It was established in 1938 with technical and financial collaboration from Alcan, who holds 51% of the equity. Commercial operation began in 1941, with sheer rolling mill at bluer, in Orrisa. In 1943 a smelter was set up at Alupuram, in Kerala. The company has captive mines and facilities for producing aluminium, which is almost entirely consumed in house for production of value added semi fabricated products. It also purchases aluminium (more than 50% of it requirement) from other primary producers, for conversion into semis. It has established itself as a market leader in sheets and foils with share of 47% and 36% respectively. INDAL has to rely on State Electricity Boards (SEBs) for supply of power, which results in comparatively higher cost of production. The Belgium smelter also has to be shut down for a few years due to operations becoming unviable following increase in power tariffs. In financial year 1995 Hirakud Power Company Limited was amalgamated with INDAL.

2.2.ii PLANT LOCATIONS:

INDAL has mines at Changed, near Pune in Maharashtra and Lohardaga in West Bengal. Smelting capacities are at Belgium and Hirakud (near each of the mines) and also at Alupuram in Kerala. INDAL has sheet manufacturing plant at Taloja, near Mumbai and Belur Calcutta. Extrusion Plants are located at Balasore and Alupuram. It also has a foil plant at Kalwa (Mumbai, Hyderabad and lamitube plant at Goa.
2.2.iii PRODUCT:

a) Sheet: INDAL'S sheet production contributes over 50% of overall sales. Production in 1989-90 was 59565 tones, which increased to 63,020 tones in 1998-99. INDIAL’S sheet business offers the widest range of products from ordinary sheet coil to technology-lithographic sheets, aluminium circles, closure stock and lamp cap stock.

b) Chemicals: The major products are standard grades of calcined alumina and the business contributes 16% in terms of turn over. Production of standard alumina in 1989-90 was 2,03,170 tones, which increased to 3,79,500 in 1998-99.

c) Foil: Foil contributed 13.8% to financial year 1998 sales. The twin headed extruder and electronic engraver at foils plant has stepped up different multi-layer laminates and multicolored printing jobs. INDAL has a capacity of 6,000 TPA and financial year 1998 production was 6,300 tones, 105% capacity utilization.

d) Extrusions: Extrusions contributed around 4.3% to financial year 1998 sales. Production during financial year 1998 was 3,915 tones on a capacity of 8,000 tones, a fall of 39.4% year over year due to change in outmoded work practices essential to secure long term viability. A higher sales volume of 4,085 tones was achieved by outsourcing. Its new joint venture with Hydro INDAL Hydro Extrusions has already established a foothold in the south Indian market and is expanding in to the western market.

e) Metal And Carbon: The primary aluminium production was 66459 tones in the year 1989-90 which declined to 42,193 as Orrisa smelter operated at 96% on captive power but Alupram, Kerala smelter suffered losses due to prolonged power cuts. Most of the metal produced is used captivity of production of semis.
f) **Electronics:** INDAL is a leading producer of professional grade printed circuit boards, operating in a highly competitive global market. INDAL has achieved preferred supplier status with companies such a Digital, HP, IBM and Motorola.

**2.2.iv POWER:**

INDAL has its 67.5 MW power plant at Hirakud (Orissa) The said plant achieved over 90% Power Load Factor (PLF) with in a time of 12 months of commissioning. It is also the first power plant in India to use clean coal combustion technology. Based on this power pant, the Hirakud smelter increased capacity by 25% taking to 30,000 TPA in 1996. During the year 1998-99 generation of power at the captive plant at Hirakud was a record. Improved efficiency in production and purchase of power led to much saving in power costs.

Electricity consumption per unit production showed some improvement. In alumina production, power consumption was 191 KWH in 1998-99 against 194 KWH in 1997-98. It was better in respect of aluminium metal production. The consumption was 16,566 KWH per tone against 17,125 KWH per tone in the year 1997-98 in respect of production of continuous cast coils the company was able to achieve a substantial reduction in electricity consumption from 282 to 73 KWH per tone.

**2.2.v EXPORT:**

Part of the company’s strategy is to increase the production of its sales in the form of export. The thrust is on developing export of value added, high quality semi fabricated products, special chemicals and printed circuit boards. INDAL exports to over 25 countries in Europe, North America, West Asia, Southeast Asia, South Africa and Oceania. During the year 1990-91 the tune of Rs. 505 million which increased to Rs. 2,265 million in the year 1997-98. The export declined to Rs. 1,825 in the year due to recession every trend in the international market.
2.2.vi RESEARCH AND DEVELOPMENT:

INDAL is having its Research and Development center at Belgium. INDAL is acutely conscious of quality. It received ISO certification of its Foil Packaging, Extrusion, Casting and Electronics Business at the Belgium Research and Development center.

2.2.vii MANAGEMENT:

INDAL was the first company to manufacture aluminium in India. Growth has been from value added semi-fabricated products like sheets, foils and extrusions, where it has established itself well. However, the management’s inability to promptly provide for captive power facilities since 1992, has led to its to disadvantage as compared to significant gains made by the rest in the sector. Management team has considerable depth in the business and has been strengthened with induction of Mr. M.S. Data (Erstwhile chairman) of Hindustan Lever Ltd.

2.2.viii EXPANSION PLANS:

INDAL plant to expand alumina capacity to 5,10,000 TPA at Belgium, Karnataka and 1,00,000 TPA at Muri, Bihar. It also plants to double the Orrisa smelter capacity from 30,000 TPA to 60,000 TPA with technical input from Kaiser Aluminium, USA. INDAL has signed an MOU with Electric Companies to increased the captive power capacity from 67.5 MW to 144.5 MW. For Belgium smelter, INDAL has signed and MOU with Indal Tractable Company to purchase 60 MW of power.

2.2.ix INDAL HINDALCO ACQUISITION:

The down stream major, Indal’s 54.62 percent stake of Alcan, the Canadian aluminium major has been acquired by Hindalco for Rs. 1152 crores in March 2000 at the rate of Rs. 190 a share. Subsequently the Hindalco has enhanced it’s stake in Indal 74.62 percent through an open offer for another 20 percent stake from the public.

(36)
The deal brings closer two manor players in the domestic aluminium industry, one is India’s largest integrated aluminium company while the other is a market leader in down stream segment.

Indal has a strong presence in value added aluminium products especially sheet and foils. It has equity stake in tow value added product companies Annapurna Foils Ltd, and Orrisa Extrusions Ltd, besides its own capacities. It also has over 2,30,000 tones of surplus metals grade alumina after meeting its own captive requirement and 50,000 TPA of specially alumina capacity metal grade alumina is exported. Specialty alumina realization is generally much higher and more stable than that of metal grade alumina.

Indal’s strength in alumina and down stream products ideally fit together with Hindalco’s strong presence in mental. The acquisition creates significant value creation prospectus through synergies achieved as a result of integrating logistics, product realization and marketing strategies, and enhance customer reach. Indal derives a major portion of its sales from value added products like rolled products and foils. This acquisition will also lead to cost saving and better product rationalization as most of Indal’s plants are situated close to its end markets.

Hindalco’s single location low cost production facilities and Indal’s value added production facilities strategically located near the main market and categering to high end demand complement each other well. Indal carters to the high end demand in sheets as well as foils, which is reflected in its high price realization relative to Hindalco and other players. Indal has large unutilized capacities in most value added products rather than foils. Hindalco may not be required to make additional investment in creating new capacities instead can utilize Indal’s unutilized capacities. This will also insure that there are no new addition to the already existing large over capacities in value added products in India.

2.2 HELP TO INDAL:

The acquisition would help Indal overcome some of is major handicaps with support from Hindalco. Indal’s major worry steam from the fact that it
does not produce low-cost primary aluminium (metal) to meet its captive requirements. It has, so far, depended on expensive sources such as aluminium recycling, toiling duty free aluminium imports (against) export and even some domestic aluminium purchase to meet its metal needs. Its other worry apart from this, is that the capacity of two of its operating smelters Hirakud (30,000 TPA) and Alupuram (13,000TPA) is no where near economic size. And only the Hirakud smelter has captive power to produce aluminium which is key to keeping production cost low in India. All these have had a bearing on the bottom lines of the company.

As a result its profit margin compare quite unfavorably with that of Hindalco and Nalco Both. Hindalco and Nalco have been better off, in comparison to Indal, because of their complete integrations with access to captive power and primary metal. Where as Indal has been outsourcing up to 40 percent of its requirements of primary metal, there by incurring higher costs, despite having a much superior sales-mix. Getting over this handicap has remained a difficult job for the company due to resource constraints. As long as this handicap remains earning even the cost of capital even on a consistent basis could be a difficult task for Indal. It could have been one significant reason, which caused Alcan to give up its interest in Indal.

But, now as a result of the acquisition deal the synergy between the two companies would help Indal overcome these problem it has been facing for a long. Hindalco by virtue of being one of the world’s low-cost aluminium producers is well poised to remedy Indal’s handicap of inadequate low cost metal supplies. With primary aluminium (ingots) accounting for almost 50 percent of the sales-mix and value-added products, the balance it would thus be in a position to supply low cost metal to Indal for processing into value added products.

The deal would also help Indal bring down its power cost a major component of production cost, as Hindalco’s power cost is one of the lowest in the industry. Hindalco’s cost of power at 55 paise per KWh for it captive power is among the lowest while Indal was sourcing power from the grid at Rs. 4.56 per KWh against 75 paise per KWh for captive power.
2.2.1 FUTURE OUTLOOK:

Elaborating on the prospects for the company, Chris Bark Jones, Chairman and Chief Officer, said, "We have a number of attractive brown field expansion possibilities, which will enable the company to raise its profitability in the medium term.

Major initiatives made by INDAL to face the challenges are:

Full business potential programs (FBP), which would maximize value from the company assets whether they are machines, people, technology, geographic location and proprietary or market knowledge. FBP would examine whether each business unit measures up to the best practices and efficiencies of its class, identify the gap and would draw up a clear action plan to achieve the objective with a clearly defined financial return.

Evaluation of projects using Economic Value Added (EVA) norms in which returns must exceed the weighted average cost of capital (debt and equity). Effective use of Enterprise Resource Planning (ERP) for achieving set business goals.

### TABLE No. 2.3

**INDIAN ALUMINIUM COMPANY LIMITED.**

**EQUITY SHARE HOLDINGS**

*(AS ON 27-07-1999)*

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>NO. OF SHARES HELD</th>
<th>% TO TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>I Foreign Holdings</td>
<td>44,305,630</td>
<td>62.30</td>
</tr>
<tr>
<td>II Govt. Govt. sponsored Financial Institution</td>
<td>13,868,977</td>
<td>19.50</td>
</tr>
<tr>
<td>III Bodies corporate (Not covered under I&amp;II)</td>
<td>3,280,570</td>
<td>4.61</td>
</tr>
<tr>
<td>IV Director and their Relatives</td>
<td>428</td>
<td>0.01</td>
</tr>
<tr>
<td>V Top 50 shareholders (Not Covered under I,II,III &amp; IV)</td>
<td>609,966</td>
<td>0.86</td>
</tr>
<tr>
<td>VI Other</td>
<td>9,046,411</td>
<td>12.72</td>
</tr>
<tr>
<td></td>
<td>71,111,982</td>
<td>100.00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>YEAR</th>
<th>SALES</th>
<th>EXCISE DUTY</th>
<th>PROFIT BEFORE TAX</th>
<th>INCOME TAX PROVISION</th>
<th>PROFIT AFTER TAX</th>
<th>CONTRIBUTION TO EXCHEQUER (INC.TAX)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1989-90</td>
<td>543.67</td>
<td>106.52</td>
<td>86.12</td>
<td>27.63</td>
<td>58.49</td>
<td>134.15</td>
</tr>
<tr>
<td>1990-91</td>
<td>567.90</td>
<td>116.70</td>
<td>76.44</td>
<td>24.71</td>
<td>51.73</td>
<td>141.41</td>
</tr>
<tr>
<td>1991-92</td>
<td>520.44</td>
<td>141.77</td>
<td>47.08</td>
<td>12.82</td>
<td>34.26</td>
<td>154.59</td>
</tr>
<tr>
<td>1992-93</td>
<td>763.37</td>
<td>155.76</td>
<td>44.70</td>
<td>1.80</td>
<td>42.90</td>
<td>157.50</td>
</tr>
<tr>
<td>1993-94</td>
<td>816.88</td>
<td>125.93</td>
<td>52.28</td>
<td>1.20</td>
<td>51.08</td>
<td>127.13</td>
</tr>
<tr>
<td>1994-95</td>
<td>1043.97</td>
<td>144.79</td>
<td>89.79</td>
<td>1.50</td>
<td>88.29</td>
<td>146.29</td>
</tr>
<tr>
<td>1995-96</td>
<td>1178.90</td>
<td>131.18</td>
<td>146.73</td>
<td>35.00</td>
<td>111.73</td>
<td>166.18</td>
</tr>
<tr>
<td>1996-97</td>
<td>1151.41</td>
<td>129.85</td>
<td>66.45</td>
<td>8.68</td>
<td>57.77</td>
<td>138.53</td>
</tr>
<tr>
<td>1997-98</td>
<td>1156.80</td>
<td>124.50</td>
<td>75.33</td>
<td>6.80</td>
<td>68.53</td>
<td>131.30</td>
</tr>
<tr>
<td>1998-99</td>
<td>1134.96</td>
<td>130.41</td>
<td>86.87</td>
<td>13.50</td>
<td>73.37</td>
<td>143.91</td>
</tr>
<tr>
<td>Average</td>
<td>887.83</td>
<td>130.74</td>
<td>77.18</td>
<td>13.36</td>
<td>63.82</td>
<td>144.10</td>
</tr>
<tr>
<td>Growth%</td>
<td>208.76</td>
<td>122.43</td>
<td>100.87</td>
<td>48.86</td>
<td>125.44</td>
<td>107.28</td>
</tr>
</tbody>
</table>

Source: Annual Reports of company for respective year.
2.3 NATIONAL ALUMINIUM COMPANY LIMITED (NALCO)

2.3.i BACKGROUND:

National Aluminium Company Limited (NALCO), the largest aluminium producer in Asia, was incorporated 7th Jan. 1981, as a wholly owned, government of India enterprise, to manufacture alumina and aluminium metal. After two rounds of disinvestments in 1992-93 and 1993-94, the Government of India holding is reduced to 87.2% NALCO, has bauxite mines and a refinery at Panch Pat Mall Hills in Orrisa and smelting capacity at Anagul also in Orrisa. The state of the art plant was set up in technical collaboration with Aluminium penchinery of France. There was considerable delay in implementation of the project and also cost overruns. Commercial production started in April 1987. However the bauxite mines became operational earlier in November 1985 and next came the captive power plant, NALCO has six power plants of 120MW and sells surplus power to the state grid.

2.3.ii PLANT LOCATIONS:

NALCO’S bauxite mines are located at Panch Mali Hills in Orrisa. It also has a refining capacity close to the mines. Smelting plant and captive power plant are located at Angule in Orrisa.

2.3.iii ORIGIN:

NALCO was conceived as a high-tech capital intensive project soon after the discovery of large scale deposits of bauxite in the Kovaput district of Orrisa in the 1970s. Indications of a deposit has been noted by a British geologist on horseback more than forty years ago but prospecting was not pursued for a long time.
In the early Eighties the Government of India then headed by Mrs. Indira Gandhi decided to start a new aluminium complex with a sort of financing which was novel to India. The government decided that the cost of the project would be financed by Euro-Dollar loan. After the feasibility study by France aluminium Penchinery NALCO was setup on 7th January 1981. Work started in 1981 with state of the art technology from aluminium penchinery of France. The project launched followed the singeing of an inter government protocol between President Mitterand and the then Indian Prime Minister Mrs. Indira Gandhi.

2.3.iv TURNING POINT :

Nalco’s start-up provide to be turning point from the India’s aluminium users who were annually importing over 50,000 tones worth around RS.100 crores in three year of operation as Nalco raised annual production to 1,35,000 tones, India turned from a net importer to a self sufficient producer. Although about 20,000 to 30,000 tonnes were estimated to have been imported in 1988,89 it was offset of over 275000 tones worth Rs. 80 crores.

First three years start-up performance of Nalco has been shown in table No.2.3.1 and Table No.2.3.2.

**TABLE No. 2.5**

**NATIONAL ALUMINIUM COMPANY LIMITED (NALCO)**

**NALCO’S STARTUP THREE YEARS PRODUCTION PERFORMANCE, (TONNES)**

<table>
<thead>
<tr>
<th>YEARS</th>
<th>Bauxite</th>
<th>Alumina</th>
<th>Aluminium Ingot</th>
<th>Aluminium Wire Rods</th>
<th>Total Aluminiun</th>
</tr>
</thead>
<tbody>
<tr>
<td>Installed Capacity</td>
<td>24,00,000</td>
<td>8,00,000</td>
<td>1,18,000</td>
<td>1,00,000</td>
<td>2,18,000</td>
</tr>
<tr>
<td>1987-88</td>
<td>6,75,020</td>
<td>1,60,520</td>
<td>25,287</td>
<td>93</td>
<td>25,380</td>
</tr>
<tr>
<td>1988-89</td>
<td>17,48,450</td>
<td>5,62,100</td>
<td>58,452</td>
<td>20,301</td>
<td>78,753</td>
</tr>
<tr>
<td>1989-90</td>
<td>22,30,030</td>
<td>7,39,000</td>
<td>84,038</td>
<td>50,980</td>
<td>1,35,018</td>
</tr>
<tr>
<td>Total</td>
<td>46,53,500</td>
<td>14,61,620</td>
<td>1,67,777</td>
<td>71,374</td>
<td>2,39,151</td>
</tr>
</tbody>
</table>

TABLE No. 2.6
NATIONAL ALUMINIUM COMPANY LIMITED (NALCO)
NALCO’S STARTUP THREE YEARS
EXPORT PERFORMANCE

<table>
<thead>
<tr>
<th>YEARS</th>
<th>ALUMINA</th>
<th></th>
<th>ALUMINIUM</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Qty</td>
<td>Value</td>
<td>Average</td>
<td>Qty</td>
</tr>
<tr>
<td></td>
<td>(Tonnes)</td>
<td>(Rs. Crores)</td>
<td>(Rs./Tonnes)</td>
<td>(Tonnes)</td>
</tr>
<tr>
<td>1987-88</td>
<td>76,840</td>
<td>15.99</td>
<td>2,080</td>
<td>--</td>
</tr>
<tr>
<td>1988-89</td>
<td>3,84,161</td>
<td>181.23</td>
<td>4,727</td>
<td>14,875</td>
</tr>
<tr>
<td>1989-90</td>
<td>4,48,554</td>
<td>324.00</td>
<td>7,200</td>
<td>27,391</td>
</tr>
<tr>
<td>Total</td>
<td>9,09,555</td>
<td>521.22</td>
<td>--</td>
<td>42,266</td>
</tr>
</tbody>
</table>


2.3. PRODUCTION:

NALCO is fully integrated aluminium producer, having captive bauxite mines. It produces alumina and hydrates, aluminium ingots and semi fabricate products. It also earns revenue by selling surplus power from captive power plants to the state gird.

a) Aluminium Metal (78%):

Aluminium metal in the form of ingots, billets and wires rods, contributes the bulk of revenues. A large portion of aluminium ingots is exported. Wire rods are mainly sold in the domestic market. Superior quality of NALCO’S aluminium is evident from the fact that it fetches premium pricing on the LME. NALCO recently increased smelting capacity from 2,18,000 TPA. The smelter has two pot lines of 240 pots each, of which only 400 pots are normally operational. Capacity utilization was 92% in financial year 1998, yielding a production of 2,00,162 tones9.
b) Alumina And Hydrates 18%:

Alumina and hydrates are generated as intermediate products during the manufacture of aluminium. Alumina is extracted from bauxite obtained from captive mines, through a chemical process. Calcimined alumina and aluminium hydrates are captivity consumed for manufacture of metal (74% in financial year 1998). Alumina produced in financial year 1998 was 8,83,300 tones on an installed capacity of 8,00,000 tones. In financial year 1998, 4,79,801 tones alumina was exported, while captive consumption was 4,03,499 tones.

c) Power (4%):

NALCO has six captive power plants of 120 MW each. Surplus power is sold to the Orissa state at around Re. 0.90 per unit. Out of total production of 3,902 M uniting financial year 1998 it sold 658 M units. Average cost of producing power increased from Rs. 0.2082 per kwh in financial year 1989-90 to Rs. 0.9324 per kwh in financial year 1998-99.

2.3.vi MANAGEMENT:

NALCO is the largest amongst the domestic primary producers. Cheap captive power and a modern plant, has enable it to have lowest variable cost of production in the world. The company is wholly owned by government of India and is being managed by a team of professionals. It is a well-conceived project and releasing low variable cost advantage. It rightly emphasized accelerated repayment of forex loan being declining rupee value and become zero debt company. The management’s focus has been on the core business and diversification plans. However, being a government company, the associated bureaucratic has sales, constrains rapid capacity expansions and productive use of huge cash flows.
2.3.vii EXPANSION PLANS

Liberalisation has opened up avenues for boosting exports of alumina and aluminium, along with the benefits of accessing global technology, joint ventures and collaborative opportunities in the next century, NALCO is entering the 21st century on an exuberant mood. As and when its ambitious Rs. 4000 crores expansion plan will go on stream in all its respects, the company will achieve a turn over of about Rs. 3000 crores and a net profit of Rs. 1000 crores. In the words of S.N. Johri, Chairman and Managing Director, who laid down his office on 31st 1999, NALCO is destined to be a winner and a major global player.

The real strength for its future performance lies in expansion plans. The expansion of its Mines and Refinery Complex at Damanjodi, as a total cost of Rs. 1,664.6 crores, is under implementation. The of site grading, piling, water and power installations are ready, about 70% of detailed engineering work is also competed. Order for most of the major items have already been placed.

Once the expansion is through the existing capacities of bauxite mine will go up from 24,30,000 tones per annum to 48,00,000 tones and alumina refinery capacity from 8,00,000 tones to 15,75,000 tones.

The expansion of aluminium the smelter plant and captive power plant is expected to release a capacity from 2,30,000 tones to 3,45,000 tones resulting in an expenditure of Rs. 1,642 crores on the smelter and Rs. 420 crores on the captive power plant 6 x 120 MW to 7 x 120 MW. The projects are expected to be completed to be completed in about 51 months.

In order to broaden the product range, the company is going ahead with the implementation of strip casting facility at its smelter plant at Angul. The details of the project are as under:

<table>
<thead>
<tr>
<th>Capacity</th>
<th>26,000 TPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product</td>
<td>Aluminium alloy strips in coil form.</td>
</tr>
<tr>
<td>Width</td>
<td>1660 mm.</td>
</tr>
<tr>
<td>Thickness</td>
<td>6.35 mm to 10 mm.</td>
</tr>
<tr>
<td>Coil weight</td>
<td>10 tones</td>
</tr>
<tr>
<td>Project cost</td>
<td>Rs. 76.43 crore.</td>
</tr>
</tbody>
</table>

- (45) -
The facility has since been commissioned and trial are on. The work on the alloy wheel plant with a capacity of 4,50,000 wheels per year is under way. The finalization of technology supplier is at an advanced stage. The project is estimated to cost Rs. 92.56 crores. It is also setting up 10,000 tone per year ingot line at its smelter in Angul.

The company, as part of its growth and diversification plans, has now launched a series of special hydrate and alumina products, which have a verity of modern applications. Wide ranges of products are manufactured with controlled crystal size, purity and alpha content for meeting the requirements of refectory, ceramic and other chemical industries.

A 600 TPA pilot plant has already been commissioned at a cost of Rs. 3.29 crores for the production of special alumina. Over 240 tonnes of special hydrate products has already been sold. With the encouraging response from the international customers, the company plans to market over 20 varieties of special hydrate products. Further, a 26,400 tonne plant is being set up at a cost of Rs. 56.78 crores produce a variety of CGA products based on the technology obtained from USA.

2.3.viii FUTURE OUTLOOK

In recent years, there is wide acceptance and interest in the eco friendly builder material zeolite-A, for detergent industries. The 10,000 tone detergent zeolite-a plant at Damanjodi built at cost of Rs. 24.10 crores is being commissioning. The 950 kg. per annum gallium extracting plant being set up also at Damanjodi will be commissioning shortly.

The expansion plans, especially of alumina capacity, will help it to evolve in to a more aggressive player in the export market. It has been exporting about 4,50,000 tones of alumina. The price realization in 1998-99 was around $ 140/150 per tone. With the firming up of the Price $ 200 per tone in the year 1999-2000, there will be a quantum jump in export earning on 5,00,000 tones. The demand is increasing at about 2.5% in the developed world and by about 6% in India. With no additions to capacity in the near future and no new smelters coming up, the market is set to rebound.
NALCO is one of the low cost producer of aluminium. The cost of production was $ 1000 per tone a couple of years ago. In alumina NALCO is the lowest cost producer in the world at $ 81 per tone\textsuperscript{11}. As already mentioned, the alumina price is going up the international market and with the additional capacity of 8,00,00 atones NALCO will have a million tones of alumina available for exports. Even after taking into consideration its Alumina requirements for its own use it will have more than enough for expanding its world market share. The company’s ability to achieve its export target is strengthened further by good infrastructure it has, which other lack. Its own berth at Vizag port in A.P. and has arrangements with railways to transport material from the refineries to the port. Jif all the additional capacity for alumina is exported, one can imagine the heights to which NALCO will reach in the coming years. A spectacular growth in the coming years awaits NALCO, the giant.

\textbf{TABLE No. 2.7}

\textbf{NATIONALALUMINIUM COMPANY LIMITED (NALCO)
EQUITY HOLDINGS
AS ON 30-09-1999.}

\begin{tabular}{|c|c|c|}
\hline
SR. NO. & CATEGORY & NO OF SHARES HELD & \% TO TOTAL \\
\hline
I & Foreign Holding & 11,05,312 & 1.72 \\
II & Govt./Govt. sponsored Financial institutions & 608,545,410 & 94.45 \\
III & Bodies corporate (Not covered under I & II) & 12,241,371 & 1.90 \\
IV & Directors & their relative & 0 & 0.00 \\
V & Top 50 share holders (Not covered I.II.III & IV) & 1,107,185 & 0.17 \\
VI & Others & 11,356,350 & 1.76 \\
\hline
Total & & 644,309,628 & 100.00 \\
\hline
\end{tabular}

<table>
<thead>
<tr>
<th>YEARS</th>
<th>SALES</th>
<th>EXCISE DUTY</th>
<th>PROFIT BEFORE TAX</th>
<th>INCOME TAX PROV.</th>
<th>PROFIT AFTER TAX</th>
<th>CONTRIBUTION TO EXCHEQUR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1989-90</td>
<td>885.13</td>
<td>89.60</td>
<td>156.87</td>
<td>Nil</td>
<td>156.87</td>
<td>89.60</td>
</tr>
<tr>
<td>1990-91</td>
<td>905.50</td>
<td>131.07</td>
<td>71.93</td>
<td>Nil</td>
<td>71.93</td>
<td>131.07</td>
</tr>
<tr>
<td>1991-92</td>
<td>981.95</td>
<td>124.74</td>
<td>59.14</td>
<td>Nil</td>
<td>59.14</td>
<td>124.74</td>
</tr>
<tr>
<td>1992-93</td>
<td>1169.49</td>
<td>131.81</td>
<td>134.88</td>
<td>Nil</td>
<td>134.88</td>
<td>131.81</td>
</tr>
<tr>
<td>1993-94</td>
<td>1197.04</td>
<td>145.11</td>
<td>156.72</td>
<td>Nil</td>
<td>156.72</td>
<td>145.11</td>
</tr>
<tr>
<td>1994-95</td>
<td>1475.84</td>
<td>146.87</td>
<td>300.17</td>
<td>Nil</td>
<td>300.17</td>
<td>146.87</td>
</tr>
<tr>
<td>1995-96</td>
<td>1746.77</td>
<td>141.73</td>
<td>614.55</td>
<td>Nil</td>
<td>614.55</td>
<td>141.73</td>
</tr>
<tr>
<td>1996-97</td>
<td>1771.36</td>
<td>140.20</td>
<td>545.60</td>
<td>64.15</td>
<td>481.45</td>
<td>204.35</td>
</tr>
<tr>
<td>1997-98</td>
<td>1855.64</td>
<td>148.11</td>
<td>612.54</td>
<td>78.45</td>
<td>534.09</td>
<td>226.56</td>
</tr>
<tr>
<td>1998-99</td>
<td>1506.65</td>
<td>109.04</td>
<td>344.16</td>
<td>100.13</td>
<td>244.03</td>
<td>209.17</td>
</tr>
<tr>
<td>Average</td>
<td>1349.49</td>
<td>130.83</td>
<td>299.66</td>
<td>24.27</td>
<td>275.38</td>
<td>155.10</td>
</tr>
<tr>
<td>Growth%</td>
<td>170.22</td>
<td>121.70</td>
<td>219.39</td>
<td>100.13</td>
<td>155.56</td>
<td>233.45</td>
</tr>
</tbody>
</table>

2.4 BHARAT ALUMINIUM COMPANY LIMITED
(BALCO)

2.4.i BACKGROUND

Bharat Aluminium Company Limited (BALCO) holds the coveted position of being the first Public Sector Undertaking in Aluminium production. Incorporated in 1965, BALCO has been closely associated with the growth of the Indian aluminium industry and has played a pivotal role in making Aluminium a leading metal with myriad uses ranging from household industrial to strategic and aerospace application. BALCO has contributed significantly as a primary aluminium producer, providing sustenance to vital industries and has proved its by developing and supplying special aluminium alloys to the nation's intermediate range ballistic Agni and surface missile Prithvi.

2.4.ii PLANT LOCATION

BALCO has two working units—an integrated Aluminium complex situated at Korba in Madhya Pradesh and the second in West Bengal at Bidhanbad equipped to produce only on downstream facilities. BALCO is vertically integrated from sourcing of bauxite from its captive mines, refining and smelting to produce aluminium and variety of semi finished products.

2.4.iii ORIGIN:

With a view to establish large aluminium complex in public sector BALCO was incorporated on November 27, 1965 in collaboration with M/s Chemokom complex of Hungary for technical know how and m/s Tsvetment promexport of U.S.S.R. for smelter and fabrication plants. The company is having its corporate office at Delhi since its incorporation.

-:(49):-
The company commenced its activities towards an integrated Aluminium project at korba in Madhya Pradesh by setting up an office at korba on January 11, 1967. The plant at korba is about 50 Kms. away by road from Champa Railway Junction on Howrah Bombay main line (Via Nagpur ). The korba Aluminium complex, spread over an area of about 1,500 acres of land, consists of three main facilities namely Aluminium plant, Smelter and Semi Fabrication units. The Aluminium plant commissioned on April 21, 1973.

2.4.iv PRODUCTS:

a) Rolled Product:

The rolled products are produced in sheets, plated and coil form by not rolling and by cold rolling process. The Hot and Cold Rolling Mil at Korba with capacity to produce 40,000 tones finished rolled products and conventional rolling mills at Bidhanbag with capacity to produce 3,600 tones cater to the needs of building and architecture, rail roads. Slug manufacturers. The main rolled products is:

- Hot Rolled Coils
- Hot Rolled Plates
- Cold Rolled Coils and Strips
- Cold Rolled Sheets
- Circles
- Five bar pattern chequered Sheets
- Foils
- Rolled products for exports.

b) Extruded Products:

The company has three oil hydraulic extrusion presses of 800 tones, 2500 atones and 3150 tones capacity at Korba and one 1250 tones press at Bidhanbad with complete accessories to cater to the needs of building and
architecture, rail, road, aviation and marine transport, electrical and communication, industrial, defense, automobile and general engineering sectors. BALCO has about 1500 standard profiles for various applications for which dies are available. Profiles as per customers specific design are also supplied.

c) Seamless Rolled And Drawn tubes:

The seamless Rolled and Drawn Tubes are manufactured only by BALCO in India and have wide ranging application in the strategic defense and aerospace industries and power transmission industry.

d) Redraw Wire Rods:

There are three properzi mills having capacity to produce 40,000 tones redraw wire rods annually of 9.5 mm to cater to the needs of conductors and cable manufactures. Wire rods of 7.6 mm die can also be produced in these mills.

e) Ingots:

The pig casting machines manufacture normal and alloy pigs. Facilities are also available for the manufacture of slabs and billets semi continuous direct chill casting technique. An induction furnace is also set up to manufacture quality master alloys.

f) ACSR And AAC Conductors:

BALCO also manufactures All aluminium Conductors (AAC), Aluminium Conductors Steel Reinforced All aluminium Alloy conductors (ACSR)
2.4.v PRODUCTION FACILITIES:

a) Korba Plant:
* 2,00,000 per annum capacity Alumina plant.
* 1,00,000 per annum capacity Alumina smelter.
* Three Properzi Mills for manufacture of Aluminium redraw wire rods,
* Three Extrusion Presses (3150 tonnes, 2500 tones and 800 tones capacity)
* Hot and Could Rolling Mills (40,000 tonnes capacity)
* A Captive Power Plant of 270 MW.

b) Bidhanbagh Plant:
* Hot and Cold Rolling Mills (3600 tones capacity )
* One Extrusion Press (1250 tones capacity )
* Foil Plant (600 tones capacity)
* Conductor Plant

2.4.vi POWER:

At present (BALCO) has captive power generation capacity of 270 MW at Korba but still it faces a shortfall of around 40 MW. With the addition of new plants, the company will be fully self sufficient in power requirements.

The major problems seems to be in smelters which are based on Soderberg technology from Russia which has very high energy consumption rate of 17,500 units per tone of metal against the 14,000 units in the prebacked technology used be BALCO’s competitors. With the completion of the modernization, the company hopes to reduce energy consumption to 15,000 units per tone.

BALCO, therefore, plans to expand the power generation capacity at its captive power plant be providing more generation units to ensure uninterrupted power supply to the Korba Plant and also to reduce dependence on state grid. For preparing an techno-economic feasibility report for the proposed power unit expansion, MECON has been appointed as the consultant. The company also plans modernize its steam generation plant. Non-availability of B-grade
coal has forced BALCO to seek new technology in the field of low-grade 
utilization by installing technologically improved boilers. Besides, to create the 
degassing facilities at cast house and rolling mills the company has planned to 
install its own nitrogen plant at Korba

2.4.vii MANAGEMENT

BALCO’S ill stem largely from messy handling of its problems by the 
Madhya Pradesh State Electricity Board and the center as delayed decisions 
and implementation of key segments of the project have taken a heavy toll. The 
frequent changes in top management deprived the company of the “continuity 
factor”. The decision on the Bidhanbag unit take over the rolling mill of 
erstwhile private sector unit, Aluminium Corporation of India (ALUCOIN) at 
Jaykaynagar in West Bengal proved to be a costly adventure. This was 
apparently a political decision and BALCO had to pay a heavy price since this 
unit was not economically viable because of outmoded technology and low 
productivity.

The performance of BALCO and NALCO in the public sector offers 
interesting contrasts. While the later has demonstrated tat public sector 
enterprise can deliver the goods and emerge as a dominant market player if it 
had the right type of management and political support. The formers plight 
shows how scarce resources are fettered away by wrong decisions and how 
poor management can turn a vital core sector project sick.

2.4.viii RESEARCH AND DEVELOPMENT:

BALCO has a very strong research and development and quality control 
unit. Continues development of strategic alloys with required qualities and 
strength has given BALCO the unique distinction of being the sole supplier of 
Aluminium metal for AGNI, PRITHVI and AKASH Missiles.
BALCO metal has been used in space research and exploration. BALCO has also developed and produced for the first time in the country 6' inch dia seamless aluminium tubes for irrigation.

BALCO quality control department strictly monitors the quality of all raw materials received and all finished materials dispatched.

2.4.ix DISINVESTMENT:

BALCO was referred for disinvestment to the disinvestment commission by the then government in 1996. Of the 58 units which the commission submitted its recommendation about 38 units were profit making once and BALCO was one of these.

The commission told government in April 1997 immediately disinvest. It holding in the company by offering a share of 40% of the equity. Subsequently in June 1998. The chairman of the disinvestment commission G.V. Ramakrishna proposed to the government to consider transfer of 51% of equity to an strategic partner and also transfer the management control to the partner.

Sale of this magnitude and transfer of management control, the chairman advised “Will enable a smooth transition with the participation of move bidders offering a better price for the shares. Following this the government decided to act in March 1999. The process of disinvestment in BALCO has been going on for almost four years.

Meanwhile the company dissatisfied with the mode of disinvestments Recommended by the disinvestments commission has requested the ministry of steel and mines to consider restructuring of the capital base prior the disinvestments. The company has suggested to the government conversion of part of the equity into 4% redeemable performance shares and the balance into loans at 7.5% interest with five years moratorium. The company had even proposed to pay Rs. 100 crores up front to the government as part of downsizing exercise.
The company has how ever questioned the need for strategic partner to provided technological support. It is technically not feasible to replace the current soderberg technology with is used in its aluminium smelter in the Brownfield manner and has to be carried out through Greenfield project which requires huge capital investment. Modernization is the only way out which BALCO has already on without government support.

In spite of the companies resistance not to go for disinvestments and media report that BALCO a profitable one could have been run in present set up; and there was no need to give away such a unit to private investor, but the government continued its efforts for disinvestment and appointed valuation team.

After a detailed valuation exercise running over several month the advisors placed the valuation for 51% equity shares through the discounted cash flow method at Rs. 332-507 crores, where as the comparable valuation method placed the price at Rs. 299-484 crores. The balance sheet method arrived at the figures of Rs. 305-348 crores.

The evaluation committee after considering these figures decided to add 25% premium against the norm of 10 to 15% to arrive at the reserve price which was fixed at Rs. 514.40 crores. The evaluation committee recommended the acceptance of Starlight bid as it was the highest and double that of the other bidder at Rs. 275 crores. It was also higher then the asset based valuation of 500,46 crores for 51% and accordingly government has taken decision to disinvestments 51% equity in BALCO to starlight for Rs. 551.50 crores in March 2001.

The deal evoked considerable protests from certain quarters. Threats over made that the state government. “Chattisgarh” would not permit the sale. Mining lease to the company will be cancelled and the Chattisgarh government would buy the state taken by starlight by paying the Rs. 552 crores.

Workers have gone on strike immediately after the sale was approved by the parliament. The matter is in the Supreme Court of India’s now.
TABLE No. 2.9
BHARAT ALUMINIUM COMPANY LIMITED (BALCO)
WORKING PERFORMANCE DURING THE YEARS
1989-90 to 1998-99
(Rs. In crores)

<table>
<thead>
<tr>
<th>YEARS</th>
<th>SALES</th>
<th>EXCISE</th>
<th>PROFIT BEFORE TAX</th>
<th>INCOME TAX PROVISION</th>
<th>PROFIT AFTER TAX</th>
<th>CONTRIBUTION TO EXCHEQUER</th>
</tr>
</thead>
<tbody>
<tr>
<td>1989-90</td>
<td>N.A.</td>
<td>N.A.</td>
<td>N.A.</td>
<td>N.A.</td>
<td>N.A.</td>
<td>N.A.</td>
</tr>
<tr>
<td>1990-91</td>
<td>N.A.</td>
<td>N.A.</td>
<td>N.A.</td>
<td>N.A.</td>
<td>N.A.</td>
<td>N.A.</td>
</tr>
<tr>
<td>1991-92</td>
<td>518.60</td>
<td>126.16</td>
<td>1.38</td>
<td>Nil</td>
<td>1.38</td>
<td>127.54</td>
</tr>
<tr>
<td>1992-93</td>
<td>513.18</td>
<td>123.84</td>
<td>2.59</td>
<td>Nil</td>
<td>2.59</td>
<td>126.43</td>
</tr>
<tr>
<td>1993-94</td>
<td>627.99</td>
<td>122.05</td>
<td>16.83</td>
<td>Nil</td>
<td>16.83</td>
<td>138.88</td>
</tr>
<tr>
<td>1994-95</td>
<td>716.53</td>
<td>118.69</td>
<td>93.13</td>
<td>Nil</td>
<td>93.13</td>
<td>211.82</td>
</tr>
<tr>
<td>1995-96</td>
<td>691.19</td>
<td>90.79</td>
<td>166.50</td>
<td>Nil</td>
<td>166.50</td>
<td>257.29</td>
</tr>
<tr>
<td>1996-97</td>
<td>761.83</td>
<td>95.69</td>
<td>127.17</td>
<td>64.52</td>
<td>62.65</td>
<td>222.86</td>
</tr>
<tr>
<td>1997-98</td>
<td>848.97</td>
<td>110.31</td>
<td>134.78</td>
<td>55.02</td>
<td>79.75</td>
<td>245.09</td>
</tr>
<tr>
<td>1998-99</td>
<td>871.85</td>
<td>116.57</td>
<td>134.76</td>
<td>58.03</td>
<td>76.73</td>
<td>251.33</td>
</tr>
<tr>
<td>Average</td>
<td>693.77</td>
<td>113.01</td>
<td>84.64</td>
<td>22.20</td>
<td>62.44</td>
<td>197.66</td>
</tr>
<tr>
<td>Growth%</td>
<td>168.12</td>
<td>92.40</td>
<td>9765.22</td>
<td>5803.00</td>
<td>5574.6</td>
<td>197.06</td>
</tr>
</tbody>
</table>

Source :- Annual Report of the company.

2.5 MADRAS ALUMINIUM COMPANY LIMITED
(MALCO)

2.5.i BACKGROUND :

Madras aluminium company limited (MALCO), A private sector undertaking was commissioned in the year 1965 with a capacity of 10,000 tone per annum MALCO has collaboration with Montecatini Edition of Italy and all of its operation from bauxite mining to aluminium fabrication is located in Tamil Nadu. The company manufactures and sells aluminium in primary form as ingot and rolled products. Its operation are vertically integrated from the bauxite mining to the semi fabrication stage.
2.5.ii **PLANT LOCATION:**
MALCO has all its plant location at Mettur in the Salem district of Tamil Nadu.

2.5.iii **PRODUCTION IN CAPACITY**
MALCO has production capacities of 50,000 tones per annum for alumina 25,000 tones per annum for primary metal, 10,000 tones per annum of culled Rolled products and 10,000 tones per annum for rolled products.

2.5.iv **ORIGIN**
The Madras Aluminium Company Limited (MALCO) promoted by Pr. Was Ramakrishnan was incorporated of Madras with technical cum financial participation of M/s montecatini of Italy.

The factory was inaugurated on 2nd July 1965. Production of alumina commenced from may 1965 and of aluminium Ingots by June 1965. The rated capacity was reacted only in July 1965 when all the electrolytic pots were commissioned. The properzi plant was erected in November 1966 and production of E.C. grade wire rods was started from January 1967.

Malco was incurring losses throughout the 1980’s and as result the equity was completely wiped off. Consequently the company was refereed to the BIFR in 1985.

2.5.v **PERFORMANCE:**
MALCO, since being taken over by the strelite group of industries, has turned the corner and wiped out all the accumulated losses of Rs. 19.64 crores. The company had recorded a turnover of Rs. 116.37 crores for the year ended March 1996 and recorded a gross profit of Rs. 25.48 crores, After providing for depreciation of Rs. crores the net profit amounted to Rs. 25.22 crores which help it to wiped out all previous losses.¹³
During 1996-97, MALCO has succeeded in improving its production of primary metal substantially to 24,250 tones compared with only 16,524 tones in the year 1995-96. In the years 1997-98 and 1998-99, the company produced aluminium 25,437 tones and 24,804 tones respectively.

MALCO is a very viable and profitable unit with a net profit of Rs. 50.4 crores for the financial year 1998. The installation of the power plant will ensure uninterrupted low-cost power, which will improve margins. Moreover MALCO will be a direct beneficiary of the increase in international aluminium prices, Capacity augmentation will also improve company long term viability, MALCO is not a standalone aluminium smelting unit but is integrated with bauxite mining and own alumina production. This itself is an essential strength.

2.5.vi MARKETING

MALCO, which began with ingots and wire rods has already started manufacturing sheets and alloy wire road. These are value-added products, MALCO’S metal capacity has been increased to 29,000 tones from 25000 tones and will increased it to 33,500 tones by financial year 2001 when working at over 100% capacity. This will enables MALCO to increase its market share.

One of the main challenges before MALCO is cost reduction especially power costs. The assumes critical importance as the company is no longer entitled to confessional power. The management has foreseen this and has already set up a captive plant of 75 mw. This will ensure uninterrupted cost-effective power supply.

2.5.vii EXPANSION PLAS

MALCO is now taking steps to double the capacity to 50,000 tones by installing captive power plant of about 75 mw for the power the estimated cost is Rs. 250 crores and is being set up at Mature to process imported coal. Tenders have been invited and being scrutinized. The company wants to
complete the power project in about 18 months time from the date of selection of the contractor. The company would use only 65 mw for its purpose and sell the balance to the state grid. In order to strengthen its position in primary metal, MALCO is also striving to raise alumina production to 55,000 tones a year from the present 45,000.

2.5.viii FUTURE OUTLOOK

The strelite group of industries, which own MALCO, have some ambitious plans for the company in its future program for aluminium production. It appears MALCO will be entrusted with the responsibility of seeing through the group’s mega aluminium complex project in Orrisa for which a Memorandum Of Understanding (MOU) has already been reached with the state government on 3rd April 1997. MALCO has issued a tender in June 1997 inviting applications from turnkey contracts for pre qualification to undertake detailed engineering manufacturing installation and commissioning of large aluminium smelter together with associated plants and material banding and storage systems.

The Starlight’s Orrisa project is estimated to cost of Rs. 8,5000 crores at current prices and will be an integrated one comprising a 10,00,000 tone capacity alumina refinery near bauxite deposits in Kalahandi district, a 2,50,000tonne capacity smelter at Jharsugada and 720 mw power, plant also at Jharsuguda.
### TABLE No. 2.10
MADRAS ALUMINIUM CO. LTD.
EQUITY SHARE HOLDINGS
As on 19-12-1998.

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>CATEGORY</th>
<th>NO. OF SHARES</th>
<th>% TO TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Foreign Holding</td>
<td>1,242,650</td>
<td>5.52</td>
</tr>
<tr>
<td>II</td>
<td>Govt./Govt Sponsored Financial institutions</td>
<td>815,500</td>
<td>3.62</td>
</tr>
<tr>
<td>III</td>
<td>Bodies Corporate (Not covered under I &amp; II)</td>
<td>19,366,710</td>
<td>86.07</td>
</tr>
<tr>
<td>IV</td>
<td>Directors &amp; their relatives</td>
<td>50</td>
<td>0.00</td>
</tr>
<tr>
<td>V</td>
<td>Top 50 Share holders (Not-Covered under I,II,III &amp; IV)</td>
<td>238,500</td>
<td>1.06</td>
</tr>
<tr>
<td>VI</td>
<td>Others</td>
<td>837,590</td>
<td>3.72</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>22,500,000</strong></td>
<td><strong>100.00</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>YEARS</th>
<th>SALES</th>
<th>EXCISE DUTY</th>
<th>PROFIT BEFORE TAX</th>
<th>INCOME TAX PROV.</th>
<th>PROFIT AFTER TAX</th>
<th>CONTRIBUTION TO EXCHEQUER</th>
</tr>
</thead>
<tbody>
<tr>
<td>1989-90</td>
<td>36.89</td>
<td>4.59</td>
<td>1.38</td>
<td>Nil</td>
<td>1.38</td>
<td>4.59</td>
</tr>
<tr>
<td>1990-91</td>
<td>28.77</td>
<td>2.54</td>
<td>-1.62</td>
<td>Nil</td>
<td>-1.62</td>
<td>2.54</td>
</tr>
<tr>
<td>1991-92</td>
<td>Closed</td>
<td>Closed</td>
<td>Closed</td>
<td>Closed</td>
<td>Closed</td>
<td>Closed</td>
</tr>
<tr>
<td>1992-93</td>
<td>Closed</td>
<td>Closed</td>
<td>Closed</td>
<td>Closed</td>
<td>Closed</td>
<td>Closed</td>
</tr>
<tr>
<td>1993-94</td>
<td>Closed</td>
<td>Closed</td>
<td>Closed</td>
<td>Closed</td>
<td>Closed</td>
<td>Closed</td>
</tr>
<tr>
<td>1994-95</td>
<td>Closed</td>
<td>Closed</td>
<td>Closed</td>
<td>Closed</td>
<td>Closed</td>
<td>Closed</td>
</tr>
<tr>
<td>1996-97</td>
<td>214.04</td>
<td>28.57</td>
<td>6.65</td>
<td>Nil</td>
<td>6.65</td>
<td>28.57</td>
</tr>
<tr>
<td>1997-98</td>
<td>220.78</td>
<td>28.55</td>
<td>50.41</td>
<td>Nil</td>
<td>50.41</td>
<td>28.55</td>
</tr>
<tr>
<td>1998-99</td>
<td>178.42</td>
<td>24.63</td>
<td>32.83</td>
<td>Nil</td>
<td>32.82</td>
<td>24.63</td>
</tr>
<tr>
<td>Average</td>
<td>132.55</td>
<td>17.11</td>
<td>17.11</td>
<td>Nil</td>
<td>18.86</td>
<td>102.68</td>
</tr>
<tr>
<td>Growth %</td>
<td>483.65</td>
<td>536.60</td>
<td>536.11</td>
<td>Nil</td>
<td>237.99</td>
<td>536.60</td>
</tr>
</tbody>
</table>

REFERENCES


5. Ibid

6. Ibid

7. Ibid


10. Ibid

11. Ibid

12. India 2002 a reference annual of Govt. of India page No. 532.


-:( 62 ):.-