CHAPTER-V

HAL

A

Bird’s Eye view

Everything is more important in time than anything else, of course, which is exactly what happens when people don’t exhibit the right amount of fortitude in planning on a broad basis.

-DAVID E. LILIENTHAL
Hindustan Aeronautics Limited (HAL) came into existence on 1st October 1964. The Company was formed by the merger of Hindustan Aircraft Limited with Aeronautics India Limited and Aircraft Manufacturing Depot, Kanpur.

The Company traces its roots to the pioneering efforts of an industrialist with extraordinary vision, the late Seth Walchand Hirachand, who set up Hindustan Aircraft Limited at Bangalore in association with the erstwhile princely State of Mysore in December 1940. The Government of India became a shareholder in March 1941 and took over the Management in 1942.

Today, HAL has 16 Production Units and 9 Research and Design Centres in 7 locations in India. The Company has an impressive product track record - 12 types of aircraft manufactured with in-house R & D and 14 types produced under license. HAL has manufactured 3550 aircraft (which includes 11 types designed indigenously), 3600 engines and overhauled over 8150 aircraft and 27300 engines.

HAL has been successful in numerous R & D programs developed for both Defence and Civil Aviation sectors. HAL has made substantial progress in its current projects:

- Dhruv, which is Advanced Light Helicopter (ALH)
- Tejas - Light Combat Aircraft (LCA)
- Intermediate Jet Trainer (IJT)
- Various military and civil upgrades.

Dhruv was delivered to the Indian Army, Navy, Air Force and the Coast Guard in March 2002, in the very first year of its production, a unique achievement.

HAL has played a significant role for India's space programs by participating in the manufacture of structures for Satellite Launch Vehicles like
• PSLV (Polar Satellite Launch Vehicle)
• GSLV (Geo Stationary Launch Vehicle)
• IRS (Indian Remote Satellite)
• INSAT (Indian National Satellite)

There are three joint venture companies with HAL:

• BAeHAL Software Limited
• Indo-Russian Aviation Limited (IRAL)
• Snecma HAL Aerospace Pvt Ltd

Apart from these three, other major diversification projects are Industrial Marine Gas Turbine and Airport Services. Several Co-production and Joint Ventures with international participation are under consideration.

HAL's supplies / services are mainly to Indian Defence Services, Coast Guards and Border Security Forces. Transport Aircraft and Helicopters have also been supplied to Airlines as well as State Governments of India. The Company has also achieved a foothold in export in more than 30 countries, having demonstrated its quality and price competitiveness.

HAL has won several International & National Awards for achievements in R&D, Technology, Managerial Performance, Exports, Energy Conservation, Quality and Fulfillment of Social Responsibilities.

• HAL was awarded the "INTERNATIONAL GOLD MEDAL AWARD" for Corporate Achievement in Quality and Efficiency at the International Summit (Global Rating Leaders 2003), London, UK by M/s Global Rating, UK in conjunction with the International Information and Marketing Centre (IIMC).

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- HAL was presented the International - "ARCH OF EUROPE" Award in Gold Category in recognition for its commitment to Quality, Leadership, Technology and Innovation.
- At the National level, HAL won the "GOLD TROPHY" for excellence in Public Sector Management, instituted by the Standing Conference of Public Enterprises (SCOPE).

The Company scaled new heights in the financial year 2004-2005 with a turnover of Rs. 4534 Crores and export over Rs. 150.05 Crores.
ORGANISATIONAL GROWTH OF HAL

Establishment of
SUKHOI ENGINE DIVISION
at Koraput

Establishment of
AIRPORT SERVICE CENTRE
For Co-ordinating the operations at HAL Airport -Bangalore

Establishment of
INDUSTRIAL & MARINE GAS TURBINE DIVISION
For aeroderivative gas turbines /industrial engines.

Establishment of
AERO SPACE DIVISION
For Structures of Aerospace Launch Vehicles

Establishment of
KORWA DIVISION
For Advanced Avionics

Establishment of
FOUNDRY & FORGE DIVISION
At Bangalore

Establishment of
HELICOPTER DIVISION
At Bangalore

Establishment of
LUCKNOW DIVISION
For Accessories & Instruments

Formation of
HINDUSTAN AERONAUTICS LIMITED
By Mergers of 3 Companies

Establishment of
AERONAUTICS INDIA LTD
At Nasik, Koraput & Hyderabad for MIG Airframe, Engines & Avionics

Establishment of
AIRCRAFT MANUFACTURING DEPOT
At Kanpur for HS - 748

Establishment of
ENGINE DIVISION
At Bangalore

HINDUSTAN AIRCRAFT LIMITED
At Bangalore
MARKETS OF PRODUCTS PRODUCED BY "HAL"

<table>
<thead>
<tr>
<th>International Customers</th>
<th>Domestic Customers</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Airbus Industrie, France</td>
<td>• Air India</td>
</tr>
<tr>
<td>• APPH Bolton, UK</td>
<td>• Air Sahara</td>
</tr>
<tr>
<td>• BAE Systems, UK</td>
<td>• Airports Authority of India</td>
</tr>
<tr>
<td>• Chelton, UK</td>
<td>• Bharat Electronics</td>
</tr>
<tr>
<td>• Coast Guard, Mauritius</td>
<td>• Border Security Force</td>
</tr>
<tr>
<td>• Corporate Air, Philippines</td>
<td>• Coal India</td>
</tr>
<tr>
<td>• Cosmic Air, Nepal</td>
<td>• Defence Research &amp; Development Organisation</td>
</tr>
<tr>
<td>• Dassault Aviation, France</td>
<td>• Govt. of Andhra Pradesh</td>
</tr>
<tr>
<td>• Dowty Aerospace Hydraulics, UK</td>
<td>• Govt. of Jammu &amp; Kashmir</td>
</tr>
<tr>
<td>• EADS, France</td>
<td>• Govt. of Karnataka</td>
</tr>
<tr>
<td>• ELTA, Israel</td>
<td>• Govt. of Maharashtra</td>
</tr>
<tr>
<td>• Gorkha Airlines, Nepal</td>
<td>• Govt. of Rajasthan</td>
</tr>
<tr>
<td>• Hampson, UK</td>
<td>• Govt. of Uttar Pradesh</td>
</tr>
<tr>
<td>• Honeywell International, USA</td>
<td>• Govt. of West Bengal</td>
</tr>
<tr>
<td>• Island Aviation Services, Maldives</td>
<td>• Indian Airforce</td>
</tr>
<tr>
<td>• Israel Aircraft Industries, Israel</td>
<td>• Indian Airlines</td>
</tr>
<tr>
<td>• Messier Dowty Ltd., UK</td>
<td>• Indian Army</td>
</tr>
<tr>
<td>• Mitsubishi Heavy Industries, Japan</td>
<td>• Indian Coast Guard</td>
</tr>
<tr>
<td>• MOOG, USA</td>
<td>• Indian Navy</td>
</tr>
<tr>
<td>• Namibian Air Force, Namibia</td>
<td>• Indian Space Research Organisation</td>
</tr>
<tr>
<td>• Peruvian Air Force, Peru</td>
<td>• Jet Airways</td>
</tr>
<tr>
<td>• Rolls Royce Plc, UK</td>
<td>• Kudremukh Iron ore Company ltd.</td>
</tr>
<tr>
<td>• Royal Air Force, Oman</td>
<td>• NALCO</td>
</tr>
<tr>
<td>• Royal Malaysian Air Force, Malaysia</td>
<td>• Oil &amp; Natural Gas Corporation Ltd.</td>
</tr>
<tr>
<td>• Royal Nepal Army, Nepal</td>
<td>• Ordnance Factories</td>
</tr>
<tr>
<td>• Royal Thai Air Force, Thailand</td>
<td>• Reliance Industries</td>
</tr>
<tr>
<td>• Smiths Industries, UK</td>
<td>• United Breweries</td>
</tr>
<tr>
<td>• Snecma, France</td>
<td>• Strongfield Technologies, UK</td>
</tr>
<tr>
<td>• Transworld Aviation, UAE</td>
<td>• The Boeing Aircraft Company, USA</td>
</tr>
<tr>
<td>• Vietnam Air Force, Vietnam</td>
<td>• United Breweries</td>
</tr>
</tbody>
</table>

SOURCE SALES DEPARTMENT HAL KORAPUT.
HISTORY AND GROWTH:

HAL, HINDUSTAN AERONAUTICS LIMITED (HAL); the backbone of the Indian Air Force.

Early years the history of this organization date back to the early 1940's when the Hindustan Aircraft Helicopter was set up in December, 1940 by a farsighted industrialist, the Late Seth Walchand Hirchand, in association with the then princely state of My sore. The company was registered on 23rd Dec-1940 as a Private Limited Company, with an authorized capital of Rs. 4 cores.

The business of the company was managed by M/s. Walchand and Hirachand Ltd., but the management was then taken over by the Govt. of India in June 1942.

The Company commenced its operations with the aim of manufacturing the HARLOW trainer, CURTISS HAWK FIGHTER and the VULTURE bomber, in collaboration with the inter continental Aircraft company of U.S.A. the first Flight was handed over to the Govt. of India in August 1941.

Due to the emergencies of the second world war, the management was handed over to USAF in September 1942, HAL served as the principal overhaul base for the South East Asia command of the allied fortress, liberator and Mitchell bombers, Dakota and commands transport aircraft ailed PHY Catalina amphibious aircraft and the piston engines fitted on there aircrafts. About a hundred aircrafts were repaired and overhauled during the next three years.

After the Second World War, the management was reverted back to the Govt. of India in Dec-1945 and was placed under the administrative control of the Ministry of industry and supply. Soon after Independence, the Govt. of India revived the policy for manufacture of aircrafts.

A Licence agreement was entered into in 1947 for the manufacture of the perciveal prentice trainer aircraft. Shortly thereafter in October 1948 a
The project was sanctioned for design of the HT-2 elementary piston engined trainer aircraft. The first prentice aircraft was flown on 30th April 1949.

The Fifty's

The period 1950-1960 saw rapid development in the activities of the Hindustan Aircraft Ltd., HAL was placed under the administration of the Ministry of Defence in January, 1951 and the first HT-2 prototype was flown on 5th August in the same year. The HT-2, designed by Dr. V.M. Ghatege, was awarded type certification in Jan 1953. In March 1950 the Govt. of India entered into a licence agreement with De Havilland of U.K. for the manufacture of Vampire jet fighter Aircraft.

In August 1956, a major design and development program was launched for HF-24 (Marut) Transonic Jet Fighter with the British Orpheus engine Dr. Kurt Tand, a renowned German designer, was appointed as the Director of Engineering, leading a composite team of German and Indian Engineers. In September 1956 the Govt. of India entered into licence agreements with Follands and Bristol Aero Engine Company of U.K. to undertake manufacture of Gnat aircraft and Krishna Aircrafts in 1958 and 1959 respectively. Other major design and development project sanctioned in Dec. 1959 was the HJT-16 (Kiran) aircraft. The chief designer for Kiran, Pushpak and Krishna was Dr. V.M. Ghatage.

The Sixties:

After the Indo-China War of 1962, the Govt. of India paid more emphasis on strengthening the defence power of India. As a result, the Aeronautics India Ltd., came into being on 16th Aug. 1963 as an autonomous body for manufacturing the MIG-21FL Aircraft. A License agreement had already been signed with the Govt. of USSR in August 1962. for this purpose, the factories at Nasik, Koraput and Hyderabad were set for the manufacture of MIG airframes engines and avionics respectively.
The first MIG-21FL aircraft was produced in July 1966. The aircraft manufacturing depot was established at Kanpur in January 1960 for the manufacture of Hawker Siddley HS-748 twin turbo prop transport aircraft fitted with Rolls Royce dart engines.

On promulgation by the Govt. of India, the Hindustan Aircraft Ltd., was dissolved and its assets merged with those of Aeronautics India Ltd., on 1st Oct. 1969 to form Hindustan Aeronautics Ltd.,

**The Seventies:**

On recommendations from the Aeronautics Committee (1969) a separate division for the manufacture of Alhoutee III (Chetak) and Lama (Chetak) Helicopters was set up at Bangalore in July 1970 and another at Lunknow for the manufacture of aircraft instruments and accessories. The Avionics Design Bureau was formed in 1971 by merging of the Special Project Team (SPT), established earlier at Bharat Electronics Ltd., and the R & D department of Hyderabad division.

A design bureau was set up at Lucknow in 1973 for design and development of accessories. In 1979, projects were sanctioned for designing and developing the HPT-32, Kiran and Ajit Aircrafts. A licence agreement was entered into with BAE for the manufacture of the Jaguar aircraft and with Rolls Royce for the manufacture of the Adour engines fitted to the Jaguar aircraft.

**The Eighties: (Recent Years)**

The year 1980-81 was a bad year for the company as there was an unprecedented prolonged strike for 77 days on the issue of wages parity with BHEL.

In March 1982, an agreement was signed with USSR authorities for license production of the Swing Wing MIG 27 M. Aircraft as a follower project for the MIG 21 BIS. In August 1982, the Govt. approved the proposal for
setting up an Advanced System Division at Korwa for the manufacture of internal Navigation system (INS), Head Up Display, and Weapon Aiming Computer (HUDWAC) and combined Map and Electronic Display (COMED).

A major milestone in 1983 was the formulation of a Design Perspective plan which envisages design and development of a portfolio of projects including the basic. Turbo Prop Trainer, Advanced Jet Trainer, Hindustan Pressurized Light Transport (30-35 seat) and Light Combat Aircraft (LCA).

LATEST ACHIEVEMENTS:

The latest achievements of HAL have added more glory to the name and integrity that the management has carried forward through these past years.

The annual sales turnover for the year 2000-01 was Rs.2460 crs (provisional) with a profit of Rs. 273 crs (provisional). The export figure of the company was marked at Rs. 67 crs.

The company has been awarded with the Prime Ministers MoU for sustained excellent performance in 1997-98, the Gold Trophy of the "SCOPE AWARD" for excellence and outstanding contribution to Public Sector Management in 1999-2000 and the technology Absorption Award from DRDO in the 1999-2000.

The major achievement came in the form of the 1st prototype (TD-1) of the LCA project being successfully flown on 4th Jan 2001.

PAST PROJECTS:

1968- R11F25 Series Engines manufactured
1979- R11F25 manufactured.
R25 manufactured.
R11F overhaul.

1984- R11F25 overhaul (MIG 21 M)
R25 overhaul
R25 manufactured (MIG BIS A/c)
R29-B manufactured (MIG 27A/c)

1996- R11FS overhaul (MIG 21M A/c)
R25 overhaul (MIG BIS A/c)
RD33 overhaul (MIG 29 A/c)
RD 25 manufactured.
Spared to 4 BRD for R 29 B overhaul.
Kaveri Engine components, Exports and diversification.

NEW PROJECTS:

ALH civil variant, Air Ambulance, Lancer, IJT, sams and Upgrades aircrafts are progressing as scheduled. An agreement to license manufacture SU-30 aircraft has been signed. Production for these purposes will start from 2004.

CORPORATE OBJECTIVE:

The objectives for which the company is established is set out in the Memorandum of Association of HAL. There are 40 clauses which provide for design, development, manufacture, repair and overhaul of aircraft engines components and equipments.

In April, 1971, the Board of Director of HAL appointed a Committee known as Review Committee to HAL to review the total functioning of the company. The Committee formulated a statement of basis objectives. They are as follows:
• To serve as an instrument of National Policy to achieve self-reliance in the design, development & production of Aircraft & equipment.

• To conduct its business economically & efficiently so that it can contribute to its share in the national effort for achieving a self-reliant and self-generated economy.

• To develop and maintain an organization which will readily respond to & adopt the changing matrix of socio-techno economic relationship & where in a climate of growing productional competence, deep commitment and sense of belonging will foster & each employee will be encouraged to grow in-accordance with this potential for the furtherance of the organization goals.

QUALITY OBJECTIVE:

To achieve and sustain quality to the satisfaction of the customer in all products and services of the Division.

QUALITY POLICY:

  o Manufacture & overhaul of products totally meet customers quality & reliability requirement including functional, maintainability and life characteristics with due attention to economy in production and delivery schedule.

  o Adherence to approved specification during receipt, manufacture, assembly test and delivery with stress and prevention of defects.

  o Selection, development, evaluation and monitoring of suppliers and sub-contractors using scientific methods and extending adequate technological support to them.

  o Planned and systematic execution of the programme for familiarizing customers adequately on proper usage of HAL's products.

  o Periodic review for continuous improvement based on the feedback of field performance from the customer and HAL's own experience.
Development of human resources by imparting knowledge and skill through TQM concept to all personnel in the Company.

DIVISIONS

HAL has spread all over in India.

The establishments are situated at the following places:

1. BANGALORE DIVISION (KARNATAKA)
   (a) BARAKPUR DIVISION (WEST BENGAL)

   It is a branch of the Bangalore Division.

2. NASIK DIVISION (MAHARASTRA)

3. KORAPUT DIVISION (ORISSA)

4. HYDERABAD DIVISION (ANDHRA PRADESH)

5. LUCKNOW DIVISION (UTTAR PRADESH)

6. KANPUR DIVISION (UTTAR PRADESH)

7. KORWA DIVISION (UTTAR PRADESH)

HAL has four main complexes in India.

These are as follows:

1. BANGALORE COMPLEX

2. MIG COMPLEX

3. ACCESSORIES COMPLEX

4. DESIGN COMPLEX

1. BANGLORE COMPLEX:

   (a) Aircraft Division-Manufacturing JAGUAR aircraft.

   (b) Engine Division-Manufacturing JAGUAR engines.

   (c) Helicopter Division-Manufacturing helicopters.
(d) Forge and foundry Division-Manufacturing high precision castings and Forgings.
(e) Overhaul Division-Overhaul of JAGUAR and other engines.
(f) Space Division-Manufacturing of launching pads and common satellites.
(g) Servicing Division-For common service to all divisions.

2. ACCESSORIES COMPLEX:

(a) Hyderabad Division-Manufacturing of electronics and navigational equipment.
(b) Kanpur Division-Manufacturing of passenger aircraft and gliders.
(c) Lucknow Division-Manufacturing of hydraulic pumps, fuel pumps and starter generators.
(d) Korwa Division-Manufacturing of advanced navigational equipment.

3. NASIK DIVISION:

(a) Nasik Division-Manufacturing and overhaul of Airframes.
(b) Koraput Division-Manufacturing and overhaul of MIG engines.

4. DESIGN COMPLEX:

Bangalore Division-Modification of any component or unit of an engine.

The Head Office of HAL is located at Bangalore and another at New Delhi under the Ministry of Defense.
**INDIGENOUS NAMES OF HAL PRODUCTS:**

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Aircraft's Engine</th>
<th>Indigenous Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>MIG-21FL/R11-F2</td>
<td>BADAL</td>
</tr>
<tr>
<td>2.</td>
<td>MIG-21M/MF/R-11-F2S/F2SK</td>
<td>TRISHUL</td>
</tr>
<tr>
<td>3.</td>
<td>MIG-21BIS/R-25</td>
<td>VIKRAM</td>
</tr>
<tr>
<td>4.</td>
<td>MIG-23MF/R-29</td>
<td>RAKSHAK</td>
</tr>
<tr>
<td>5.</td>
<td>MIG-23BN/R-29B</td>
<td>VIJAY</td>
</tr>
<tr>
<td>6.</td>
<td>MIG-25/R-29B</td>
<td>GARUD</td>
</tr>
<tr>
<td>7.</td>
<td>MIG-27M/R-29B</td>
<td>BAI-ADUR</td>
</tr>
<tr>
<td>8.</td>
<td>MIG-29/VRAJ</td>
<td>VAJ</td>
</tr>
<tr>
<td>9.</td>
<td>GNAT/OPHEUS-701</td>
<td>AJEET</td>
</tr>
<tr>
<td>10.</td>
<td>HF-24/OPHEUS-703</td>
<td>MARUT</td>
</tr>
<tr>
<td>11.</td>
<td>HJT-24/VIPER-11</td>
<td>KIRAN</td>
</tr>
<tr>
<td>12.</td>
<td>JAGUAR/ADOUR MK-803</td>
<td>SHAMSHOR</td>
</tr>
<tr>
<td>13.</td>
<td>HS-748 (AVRO)/DART-531</td>
<td>CHITRA</td>
</tr>
<tr>
<td>14.</td>
<td>MIRAGE-2000/M-53</td>
<td>VAJRA</td>
</tr>
<tr>
<td>15.</td>
<td>ALLOUTTE/ARTOUSTE-IIIB</td>
<td>1. CHETAK</td>
</tr>
<tr>
<td></td>
<td>(Helicopter)</td>
<td>2. CHEETAH</td>
</tr>
<tr>
<td>16.</td>
<td>AN-32/OPHEUS-701</td>
<td>SUTLUJ</td>
</tr>
<tr>
<td>17.</td>
<td>MT-8/OPHEUS-703</td>
<td>PRATAP</td>
</tr>
<tr>
<td>18.</td>
<td>MI/OPHEUS-703</td>
<td>AKBAR</td>
</tr>
<tr>
<td>19.</td>
<td>HPT-32/PISTON ENGINE</td>
<td>1. CHETAK</td>
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</tbody>
</table>

Source: Data collected from HAL, Sunabeda.

The following are the products that are designed and developed by HAL:

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Name of the aircraft</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>HT</td>
<td>TRAINER</td>
</tr>
<tr>
<td>2.</td>
<td>PUSPAK</td>
<td>TRAINER</td>
</tr>
<tr>
<td>3.</td>
<td>KRISHAK</td>
<td>AIR OBSERVATION POST</td>
</tr>
<tr>
<td>4.</td>
<td>MARUT(HF-24)</td>
<td>GROUND ATTACK</td>
</tr>
<tr>
<td>5.</td>
<td>MARUT(TRAINER)</td>
<td>ADVANCED JET TRAINER</td>
</tr>
<tr>
<td>6.</td>
<td>KIRAN MAKE-II &amp; IA</td>
<td>JET TRAINER</td>
</tr>
<tr>
<td>7.</td>
<td>BASANT</td>
<td>AGRICULTURAL</td>
</tr>
<tr>
<td>8.</td>
<td>AJEET</td>
<td>GROUND ATTACK</td>
</tr>
<tr>
<td>9.</td>
<td>HPT-32</td>
<td>AB TRAINER</td>
</tr>
<tr>
<td>10.</td>
<td>AJEET TRAINER</td>
<td>TRANSONIC JET TRAINER</td>
</tr>
</tbody>
</table>

Source: Data collected from HAL, Sunabeda.
The following are the products manufactured under license from other companies:

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Name of the aircraft</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>PERCIVAL PRENTICE</td>
<td>TRAINER</td>
</tr>
<tr>
<td>2.</td>
<td>VAMPIRE</td>
<td>FIGHTER</td>
</tr>
<tr>
<td>3.</td>
<td>GNAT</td>
<td>INTERCEPTOR</td>
</tr>
<tr>
<td>4.</td>
<td>MIG-21</td>
<td>INTERCEPTOR</td>
</tr>
<tr>
<td>5.</td>
<td>MIG-21 BIS</td>
<td>GROUND ATTACK</td>
</tr>
<tr>
<td>6.</td>
<td>JAGUAR</td>
<td>STRIKE</td>
</tr>
<tr>
<td>7.</td>
<td>JAGUAR</td>
<td>TRAINER</td>
</tr>
<tr>
<td>8.</td>
<td>MIG-27</td>
<td>GROUND ATTACK</td>
</tr>
<tr>
<td>9.</td>
<td>AVRO(HS-748)</td>
<td>TRANSPORT</td>
</tr>
<tr>
<td>10.</td>
<td>DORNIER-288</td>
<td>LIGHT TRANSPORT</td>
</tr>
<tr>
<td>11.</td>
<td>CHEETAH</td>
<td>MULTIROLE HELICOPTER</td>
</tr>
<tr>
<td>12.</td>
<td>CHETAK</td>
<td>MULTIROLE HELICOPTER</td>
</tr>
</tbody>
</table>

Source: Data collected from HAL, Sunabeda.

PROFILE OF ORGANISATION

HAL Koraput division is not only a mere government of India enterprise but also an embodiment of our hopes and aspiration of our leaders of in the post independence period for making the nation self reliant in its defence preparedness. It is situated at Sunabeda on the predominant tribal areas of Koraput district in Orissa.

Truly speaking HAL Koraput division is the backbone of India’s Air defense. An agreement was signed in August 1962 with former Soviet Union for manufacturer of MiG-21 Air craft under license.

The aero engine factory at Koraput has been setup to meet this requirement under the name of Aeronautics India Ltd, which was formed on 1 April 1964. The company was merged with Hindustan Aircraft Limited on 1st October 1964 and a new company was formed under the name of HAL.
LOCATION

The organization located at Sunabeda in Koraput District is about 139 kms from Vizianagaram in A.P and 39 kms from south to Jeypore in Orissa.

ESTABLISHMENT

HAL Koraput division was established in the year 1964. Management is a private sector undertaking under the Ministry of Defense, Government of India. As this organization is the registered one, the Registration No. is KT-62 (SL.no-00169).

LOCATIONAL ADVANTAGE

While installing an industry an entrepreneur has to choose the location properly, considering the prerequisites like availability of land, labour, power, raw material, communication facilities etc. If these factors are taken as units of measuring rod, the company HAL Koraput division is located in a very advantageous position. This company is situated at Sunabeda in Koraput district of Orissa which is about 139 km from Vizianagaram and 39 km south from Jeypore. The river Kerandi which acts as a perennial source of supplying water is flowing in the North eastern side to HAL, Koraput Division, Sunabeda. Moreover this factory is adjacent to the national highway 42 linking Vishakhapatnam and Raipur. The nearest railway link is Koraput station (15 km. from Sunabeda), which comes under South Eastern Railway and nearest port is Vishakhapatnam, which is approximately 210 km from Sunabeda. An air field is located at Jeypore which is 39 km from Sunabeda. There is a HAL helipad facility at Sunabeda Township and the construction of the proposed air field is going on. This being an organization under the ministry of defense its location in a remote area helps in maintaining the required camouflage. For such an organization water supply is available around the year. Excellent power facility is provided by the Orissa State Electricity Board (now SESCO),
which is having a separate grid for HAL Koraput division. The labour force is also available at a cheaper rate. Above all the atmosphere of Sunabeda is cool and is less pollution free which is an important advantage for locating an aeronautic factory here. The factory and the township of HAL, Koraput division, covers an area of about 7400 acres of land.

OBJECTIVES

The objectives of the company are as follows:

- To conduct its business economically and effectively that it can contribute its due share to the national effort for achieving a self-reliant and self-generating company.

- Serve as an instrument of the National policy to achieve self-reliance in the design and production of aircraft and aeronautical equipment to meet the country’s changing and growing needs with special emphasis on military requirement.

- To develop and maintain an organization which readily respond to and adopt the changing motive of socio-techno economic relationship and were is a climate of growing professional competency, self discipline, mutual understanding, deep commitment and a sense of belongingness will be fast yened and each employee will be encourage to grow in accordance with this potentials for the furtherance of the organizational goal.

RAW MATERIALS

The work of HAL, Koraput Division is mostly concerned with mechanical metrological engineering activities. The main raw material used for this purpose are steel, aluminum, manganese etc, which are produced within
the country however, some materials like alloys are imported from Russia as well.

PRODUCTS OF HALKORAPUT DIVISION

The final products manufactured in HAL, Koraput division are MIG Engines. Some components of MIG engine are being originally manufactured; whereas some other parts are usually imported from other countries. Besides new production old and damaged MIG engines are repaired in this division. HAL, Koraput division itself is sophisticated aero engine industry.

<table>
<thead>
<tr>
<th>SL NO</th>
<th>NAME OF THE AIRCRAFT</th>
<th>ENGINE SPECIFICATION</th>
<th>INDEIGENIOUS NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>MIG- 21 FL</td>
<td>RII F2</td>
<td>BADAL</td>
</tr>
<tr>
<td>2</td>
<td>MIG- 21 M/ME</td>
<td>RII-F25/F25K</td>
<td>TRISHUL</td>
</tr>
<tr>
<td>3</td>
<td>MIG- 21 B/S</td>
<td>R- 25</td>
<td>VIKRAM</td>
</tr>
<tr>
<td>4</td>
<td>MIG- 23 MF</td>
<td>R-29B</td>
<td>RAKSHAK</td>
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<td>5</td>
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<td>R-29</td>
<td>VIJAY</td>
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<td>6</td>
<td>MIG- 25</td>
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<td>GARUD</td>
</tr>
<tr>
<td>7</td>
<td>MIG- 29</td>
<td>RD- 33</td>
<td>VAZRA</td>
</tr>
</tbody>
</table>

Source: Data collected from HAL, Sunabeda.

For the last two years the divisions has started overhauling RD-33 engines required for MiG-29 under the license with USSR. The division at present is geared up to go in producing of MKI SUKHOLI-30 Hypersonic fighter plane engines.

TECHNOLOGY USED

The technology used for preparation of the MIG engines has been borrowed from erstwhile USSR. The division engines are manufactured in collaboration with Russia.
CUSTOMERS

The Indian air force is the monopoly customer of HAL, Koraput division since the beginning. After introduction of economic liberalization and globalization of industry in India HAL, Koraput division has switched over to export. In recent years after disintegration of the soviet Russia few countries of the third world that were possessing MIG overhaul in HAL, Koraput division through work under. These countries are Vietnam, Serbia, and Yugoslavia. However IAF continues to be its prime customer.

FINANCIAL STATUS

HAL, Koraput division (all the units) achieved the provisional turn over of Rs.2460 crores and posted a profit of Rs.273 crores against a target turnover and profit of Rs.2440 crores and Rs.213 crores respectively. During the financial year 2001-2002 HAL, Koraput division expected goods and services to the tune of Rs.67 crore against the target of 47 crores. HAL, Koraput division was selected as one of the top ten public sector companies.

HMA-(HAL Management Academy)

HAL Management Academy (HMA) was established by the corporate management of HAL, way back in August 1969, under the then name of HAL Staff College. It was re-named HAL Management Academy in June 2001 to reflect its focus on management development, consultancy and research. HMA has now competed 35 years of fruitful contribution to the cause of management education.

Responding to the need amongst practicing managers to constantly refresh and update their managerial skills, HMA offers a variety of programs in an open and short duration format. These programs form a part of a larger focus on Executive education. HMA's programs prepare practicing
managers to meet the challenges of today's dynamic business milieu.

These programs provide exposure to the latest development in managerial practice at a global as well as local level.

HMA's programs break fresh ground in management thinking as well as practice. Participants gain insight into both theory as well as application of the latest in management. Participants are encouraged to apply learning in their organizational contexts, with a view to formulate strategies for post-program implementations.

Programs at HMA provide not just individual learning, but also the opportunity to network with other practising managers in the area, providing for active sharing of experience as well as building useful contacts.

The programs offered are conducted by HMA Faculty, who provide a unique blend of academic, research as well as consulting skills. In addition, all participants have access to the vast infrastructure as well as resources of the institute.

Management Development Training Programme

At the end of each management training programme conducted in the Division, the trainees are assessed by a written test, prepared on objective type, test module. Also the usefulness of the programme to suit the participant is also evaluated through a feedback report obtained from the participants at the end of each programme, which is critically examined by the training department. However for their performance on the job, a feedback report from their concerned department heads are received by training department to evaluate the usefulness of the training imparted. Trainings imparted to technicians are evaluated as per their performance in achieving increased output or better production. For other categories of trainees the effectiveness of the concerned trainee in attending the training
is judged on the basis of his handling the day to day shop floor problems about production, human problems arising out of grievances, etc and general capability in maintaining discipline among the subordinates. The impact of training is also appreciated in the tangible improvement in absenteeism, labour turn over, reduction in accidents and increased productivity.

OTHER HIGHLIGHTS

TOOLS FOR TRAINING:

Diagnostics, experience-sharing, action-planning and learning diary help in enhancing the effectiveness of learning. Diagnostics exercise enables participants to identify difficulties faced in their work-place, helps them in analysing the situation and arriving at remedial solutions. The Learning Diary helps participants identify key learning points. Individual and group action plans are the means for transferring earning from the classroom to the work-place.

AMBIENCE:

A sprawling building amidst thick foliage, lush lawns, pathways and flower beds provide a serene retreat from the distractions of the bustling metropolis. This ambience has a soothing effect on the minds of the participants and takes them away from the hectic business scenes to an idyllic location where they can review their contribution from more creative perspectives.

INFRASTRUCTURE

Training Halls

HMA has five air-conditioned and acoustically-treated training halls with seating capacity varying from 15 to 50, with flexible seating arrangements. Each classroom is equipped with an Overhead projector, writing board,
Public Address System, Digital Light Processing Projector (DLP), computer with the necessary state-of-the-art software to make presentations.

Library

A good library with over 12000 books mainly on management topics, a number of professional journals and an impressive collection of audio-visual aids supplement classroom learning and assignments.

SUMMARY

After the world war -II, India government permitted to start an aircraft industry. The present HAL is the brainchild of the then industrialist Hirachand and Walachand. Today HAL is a giant public sector undertaking having twelve divisions to its structure. HAL (Koraput Division, Sunabeda) is under the MIG complex. It is assigned with the task of manufacturing the various types of engines that are required for the defence purpose of the Indian Airforce. There are nearly 4000 employees including the managers, are working in this complex. The general manager is the chief executive of the Koraput Division. A large number of technically trained personnel's are required to operate this division. So training and development programmes are highly essential for the employees of this division. To meet the training need a separate training department is in the division giving a training manager as its head. The training department imparts training to the new entrants and prepares a second line competent officers for the future promotion. Facilities available for providing training are quite satisfactory in the training department of the koraput Division. To conduct various management development programme, HAL gas a week equipped TTS, library, laboratory and auditorium of its own. HAL has adapted the lecture method, case study, games and exercises, role-playing and the lesson plan and demonstration method to impart training to the executives. In order to meet the specific organizational requirement HAL, Koraput Division, Sunabeda conducts four different types of (i) training programmes
such as apprentices training, (ii) in house training development programmes, (iii) training and development programmes outside the organization and (iv) training programmes in HAL Staff College, Bangalore. To see the tangible benefits of the training programmes conducted by HAL, evaluation of the training programmes are done by the division also. A questionnaire is served by the training department to the trainees after the completion of each and every programme to evaluate the values training programmes conducted by the division. The evaluation process for the management training and development programme is different than that of the apprentices training. Half yearly and annual examinations on theory and practice are conducted to evaluate the skill and knowledge of the apprentices training.

References:
Data Collected from Personnel Deptt. & HAL Staff College, Sunabeda