

**SUMMER TRAINING PROJECT REPORT**  
**ON**  
**STUDY ON THE AWARENESS OF RICO**  
**PRODUCTS AND MATERIAL MANAGEMENT**

In partial fulfillment of the requirement for the award of the degree of  
**MASTERS OF BUSINESS ADMINISTRATION**  
(Session 2009-2011)

**A Project Done at**

**RICO AUTO INDUSTRIES LTD**

**UNDER THE SUPERVISION OF:**

**Mr. M.K.RAGHAV**

**Divisional Manager**

**(Finance & Taxation)**

**SUBMITTED By:**

**SUMIT DHINGRA**

**M.B.A SEC(B)**

**Roll No-12097146**



**INSTITUTE OF MANAGEMENT**  
**MAHARISHI MARKENDESHA UNIVERSITY**  
**MULLANA(AMBALA)**

## **PREFACE**

Classroom study is the foundation, which is essential, but getting down cat from a tree is different whenever it comes. To bridge the gap between the theory and practical, it is essential for the student to step out of the classroom and move around the corporate world. Classroom theory can pass on knowledge but attitude and skills can be enhanced from actual market exposure with them. RICO AUTO INDUSTRIES LTD. provided me an opportunity to experience an actual industry condition.

It is correctly said that market exposure is nearly a civilized form of warfare where most of the battles are won by civilized thinking and the attitude.

The present training report gives a detailed view of the industrial training undertaken at RICO AUTO INDUSTRY LIMITED from 7th June 2010 to 31<sup>th</sup> July 2010. The training helped me in having a view of implementing my theoretical knowledge to industrial environment. The training at RICO AUTO INDUSTRY LIMITED is definitely going to play an important role in developing an attitude for hard work and self confidence for my future.



## **ACKNOWLEDGEMENT**

On successful completion of my summer training report (material management in manufacturing industries), I am grateful to the management of the **RICO AUTO INDUSTRIES LTD**. For giving me this opportunity to undergo my summer training in there esteemed prestigious organization.

For making this project possible, I express my deep sense of the gratitude to **Mr M.K. Raghav as Divisional Manager (Finance & taxation)** for providing their valuable help, support & precious time in the successful completion of the project.

Also, I am thankful to the faculty of my college for their continued guidance and invaluable encouragement.

Finally I am thankful to all the respondents whose responses were of utmost important for the project. Last but not the least, I would like to place a word of appreciation on record for all those whose directly and indirectly have helped me for the successful completion of the project.

**SUMIT DHINGRA**

## **DECLARATION**

I hereby declare that the Project Report titled “ THE MATERIAL MANAGEMENT OF RICO AUTO INDUSTRIES LIMITED ” In the partial fulfillment of the requirement for the degree of “Masters in Finance & Controls” and submitted to the MAHARISHI MAKENDESHWER INSTITUTE OF MANAGEMENT. This is my original work and has not been submitted for any other stream, any other course, degree or fellowship.

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# **CHAPTER 1**

## **INTRODUCTION**

The training report is about the Different aspects of material management of RICO Auto Industries Ltd.

RICO AUTO is a dynamic world class engineering company supplying a broad range of high precision fully machined ferrous and aluminium components and assemblies to automotive OEM's globally.

Material and its management is not a new thing, it is there from the starting of the business ,unfortunaetly earlier nobody realise its importance but it has gained a lot of importance for the past few years because of the benefits offered by it.

It has emerged as the most critical component as corporations globalize their operations.

Material management is an interactive Materials requirement, planning and control system . The objective of the system is to make it easier to deal with complexities of operating a manufacturing company by taking into account various aspects of information flow of management. The material management helps:

- To control investment in materials at the optimum level by efficiently organizing the purchase and sales operations.
- To maintain a sufficient and large size inventory to meet the demand of finished goods and to meet the demand of raw materials by production department.
- To make the best utilization of the available space, by managing the material in such a way so that it can be easily available.
- To decide the right lead time.

- To make Right control by properly checking each and every aspect of material this led to uninterrupted supply of materials from external and internal sources, which led to increase in profit.
  
- In right Handling by taking measures to reduce wastage. The waste materials are continuously disposed of, which increase the working capital and increase the space for the incoming materials.

**CHAPTER-2**

**LITERATURE REVIEW**

- **Inventory Management, Jon Schreibfeder**

**[www.choicemagazine.com](http://www.choicemagazine.com)**

In this article, the author asks as to How the companies know whether they have too much, too little, or just the right amount of stock inventory? One way is to compare the value of your current inventory to an "ideal inventory investment." In this article we will discuss how to calculate the value of this "right" amount of inventory. As with many of our other inventory analysis tools, calculating the ideal inventory investment requires that we first separate those inventory items with recurring demand from those items with sporadic usage.

### **Recurring Usage Items**

Recurring usage products are sold or used on a regular basis. Typically these items:

- Have had usage in at least eight of the last twelve months.
- Have had usage in at least four continuous months in the last twelve months (this second condition identifies seasonal items that are only sold during certain times of the year).

Replenishment of these items is normally based on safety stock quantities, order points, line points, and standard order quantities:

- **Safety Stock Quantity:** The "insurance" inventory maintained in stock to protect you from stock outs resulting from unexpected customer demand or vendor shipment delays.
- **Order Point:** The Safety Stock Quantity plus predicted demand during the anticipated lead time.
- **Line Point:** The Order Point plus predicted demand during the supplier review or order cycle; the normal length of time between typical replenishment orders with the supplier.

- **A review of inventory management research in major logistics journals: Themes and future directions**

- **Author(s):**
- [Brent D. Williams](#), (Department of Marketing and Logistics, Sam M. Walton College of Business, University of Arkansas, Fayetteville, Arkansas, USA), [Travis Tokar](#), (The Ohio State University, Fisher College of Business, Marketing and Logistics, Columbus, Ohio, USA)

In 1992, some food manufacturers and grocers formed Efficient Consumer Response to shift their focus from controlling logistical costs to examining supply chains (King & Phumpiu, 1996). Customer service also became a key competitive differentiation point for companies focused on value creation for end consumers. In such an environment, firms hold inventory for two main reasons, to reduce costs and to improve customer service. The motivation for each differs as firms balance the problem of having too much inventory (which can lead to high costs) versus having too little inventory (which can lead to lost sales).

**Abstract:** *Purpose* – The purpose of this paper is to provide a review of inventory management articles published in major logistics outlets, identify themes from the literature and provide future direction for inventory management research to be published in logistics journals.

*Design/methodology/approach* – Articles published in major logistics articles, beginning in 1976, which contribute to the inventory management literature are reviewed and cataloged. The articles are segmented based on major themes extracted from the literature as well as key assumptions made by the particular inventory management model.

*Findings* – Two major themes are found to emerge from logistics research focused on inventory management. First, logistics researchers have focused considerable attention on integrating traditional logistics decisions, such as transportation and warehousing, with inventory management decisions, using traditional inventory control models. Second, logistics researchers have more recently focused on examining inventory management through collaborative models.

*Originality/value* – This paper catalogs the inventory management articles published in the major logistics journals, facilitates the awareness and appreciation of such work, and stands to guide future inventory management research by highlighting gaps and unexplored topics in the extant literature.

- **Themes and future directions A review of Production & Inventory Management Journal.**

➤ **Author: Duplaga, Edward A.; Pinto, Peter A.**

Manufacturing firms are facing increased competition and rapidly changing market conditions in today's global marketplace. Companies must provide products that satisfy changing consumer preferences while maintaining stringent cost and quality standards. It is important for manufacturing managers to adapt their production processes and systems to respond to changes in market requirements. That is, managers must be aware of the importance of correctly matching manufacturing capabilities with marketing requirements.

The following case study is a description of the evolutionary changes in market conditions and product and process technologies that occurred during a 15-year period for one company. The subsequent analysis discusses these changes by tracing the match or mismatch between market requirements and manufacturing capabilities that occurred over time. More specifically, this study focuses on the production of one product family, taillight assemblies for automobiles, at one production facility in the organization.

**CHAPTER-3**  
**METHODOLOGY**

An opinion survey was undertaken and enquiry was translated in understanding the various aspects of the organization. The data was collected through descriptive research methodology. Research includes field survey and interview of the officials of various departments of the company.

## **OBJECTIVE**

### **Primary Objective**

- To study the material management of RICO Auto Industries.

### **Secondary Objectives**

- To procure the inventory level
- To store the inventory
- To issue the inventory of the company
- To explore the status of inventory

## **RESEARCH DESIGN**

A personal interview with seniors and practical work in company was held while the visit in store department .

## **INSTRUMENTS**

- Verification of sub-component with quality guages.
- Material handling instruments( trolley, conveyors(movement of material), pipelines.etc.

## **TOOLS AND TECHNIQUES OF ANALYSIS**

- Use SAP software
- Pie charts
- Bar graphs

## **LIMITATIONS**

- Levels of materials( minimum level, maximum level, reorder level)
- Funds saving upto some extent only.
- Space utilization should be with in a fixed creteria of material.

## **DATA COLLECTION:**

### **SOURCES OF DATA**

**PRIMARY-** The data needed for this study has been derived mainly from primary source the primary sources of the data include the information provided to me by the head of accounts department, other seniors in the company at the time of interview. An unstructured interview was conducted.

**SECONDARY-** Secondary sources of data- this type of data have been collected from the several sources, such as:

- Various quarterly review of the company
- Application forms
- Brochures, journals, newspaper etc

**CHAPTER – 4**

**AUTOMOBILE INDUSTRY PROFILE**

### **3.1 History of the Automobile Industry**

In the year 1769, a French engineer by the name of Nicolas J. Cugnot invented the first automobile to run on roads. This automobile, in fact, was a self-powered, three-wheeled, military tractor that made the use of a steam engine. The range of the automobile, however, was very brief and at the most, it could only run at a stretch for fifteen minutes. In addition, these automobiles were not fit for the roads as the steam engines made them very heavy and large, and required ample starting time. Oliver Evans was the first to design a steam engine driven automobile in the U.S.

A Scotsman, Robert Anderson, was the first to invent an electric carriage between 1832 and 1839. However, Thomas Davenport of the U.S.A. and Scotsman Robert Davidson were amongst the first to invent more applicable automobiles, making use of non-rechargeable electric batteries in 1842. Development of roads made traveling comfortable and as a result, the short ranged, electric battery driven automobiles were no more the best option for traveling over longer distances.

The Automobile Industry finally came of age with Henry Ford in 1914 for the bulk production of cars. This leads to the development of the industry and it first begun in the assembly lines of the car factory. The several methods adopted by Ford, made the new invention (that is, the car) popular amongst the rich as well as the masses.

According the History of Automobile Industry US, dominated the automobile markets around the globe with no notable competitors. However, after the end of the Second World War in 1945, the Automobile Industry of other technologically advanced nations such as Japan and certain European nations gained momentum

and within a very short period, beginning in the early 1980s, the U.S Automobile Industry was flooded with foreign automobile companies, especially those of Japan and Germany.

### **3.2 Global Trends**

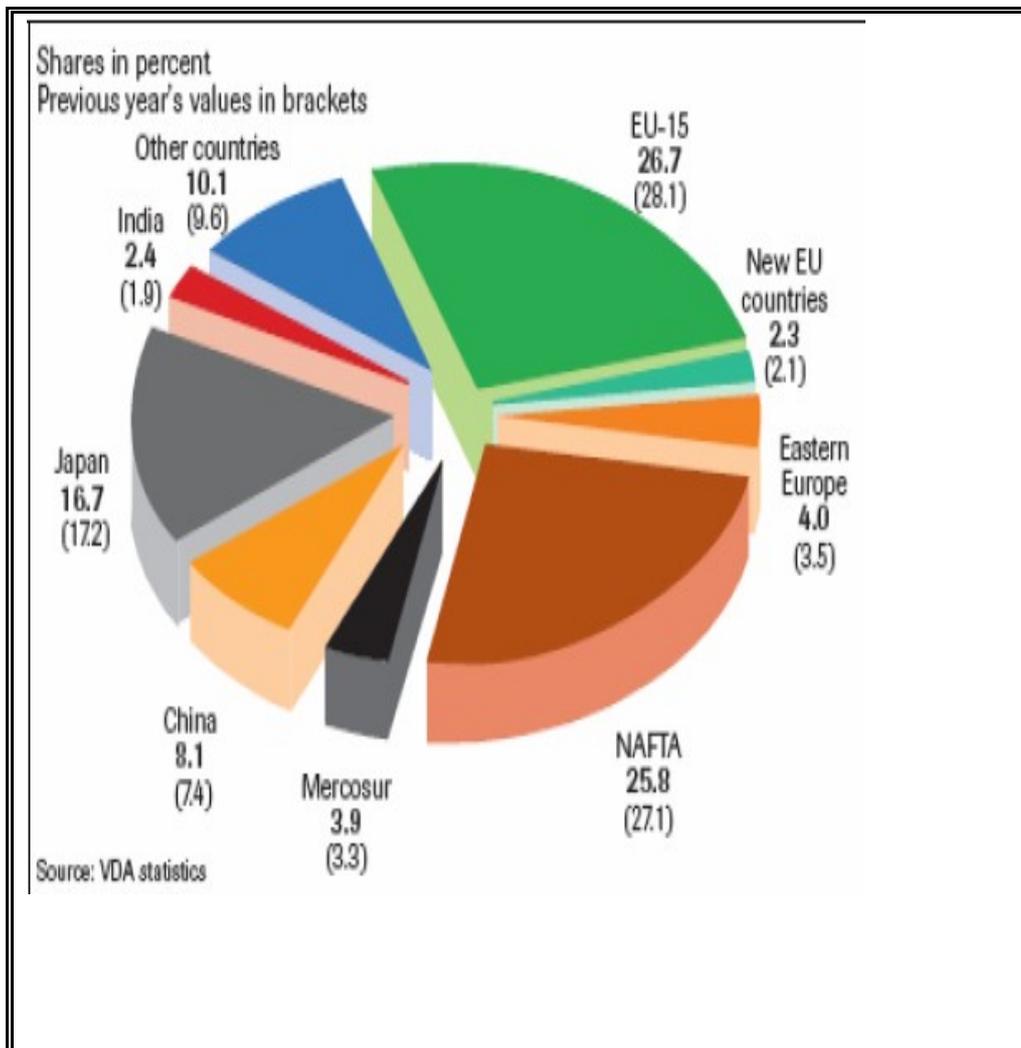
The current trends of the Global Automobile Industry reveal that in the developed countries the Automobile Industries are stagnating as a result of the drooping car markets, whereas the Automobile Industry in the developing nations, such as, India and Brazil, have been consistently registering higher growth rates every passing year for their flourishing domestic automobile markets.

In keeping with the Automobile Industry Trends, the leading automobile manufacturers are turning to the Asian markets that appear set to grow immensely over the next decade. The automobile markets in the U.S., Europe and the Japan have almost matured as a result of saturation and appear set to decline through the next decade. In contrast, the automobile markets spread over the entire Asian continent (with the exception of Japan), are constantly increasing in size and will be the destination for most of the globally leading automobile manufacturers.

The rapid growth of the national economy of the BRIC countries (including Brazil, Russia, India, and China) have enabled a growing section of the population of these countries to purchase automobiles. Global surveys conducted recently reveal that within the next ten years, these emerging automobile markets will account for nearly a whooping 90 percent of the global automobile sales growth. As a result of this, leading Automobile manufacturers of the world are setting up factories in the emerging markets, in order to serve the potential consumers better as well as reduce manufacturing and shipping costs. In addition, these arrangements are enabling the leading global automobile manufacturers to compete with the local automobile manufacturers, which were flourishing in the absence of quality competition.

The prosperity of the national economy is reflected in the rising per capita income of the developing nations. Therefore, increasing Gross Domestic Product and per capita income have raised the purchasing ability of the population that constitutes these emerging markets.

In 2007, a total of 71.9 million new automobiles were sold worldwide: 22.9 million in Europe, 21.4 million in Asia-Pacific, 19.4 million in North America, 4.4 million in Latin America, 2.4 million in the Middle East and 1.4 million in Africa. <sup>[2]</sup> The markets in North America and Japan were stagnant, while those in South America and Asia grew strongly. Of the major markets, Russia, Brazil and China saw the most rapid growth.



## **U.S. Automobile Industry**

The manufacturers of the **U.S. Automobile Industry** will have to look to the developing markets around the globe, if they are to regain their 'numero uno' position in the World Automobile Industry, that has been recently taken over by the Japanese automobile manufacturers.

The U.S. Automobile Industry, which is mainly based upon the combined business of the Detroit Three – General Motors Corporation, Ford Motors Corporation, and Chrysler LLC which is an unit of DaimlerChrysler AG, has been surrendering domestic market share to foreign companies in the automobile sector, especially those belonging to Japan.

The domestic markets in the U.S. being almost saturated, the manufacturers of the U.S. Automobile Industry need to move out of North America, to the emerging markets where automobile sales are growing by leaps and bounds.

In addition, the production costs in the U.S. are much higher in comparison to the rest of the world, and this is the main reason behind the U.S. Automobile Industry manufacturers closing factories, reducing the number of employees on their payroll in the U.S. itself.

## **Asian Market**

The Asian countries were also registering growth in the demand for new vehicles. Indonesia and India showed significant growth in the registration of new vehicles. According to the UNIDO which follows the international standard for industrial

classification that categorizes the automobile sector as manufacture of motor vehicles, bodies for motor vehicles and manufacturers of parts and accessories of motor vehicles and their engines, In the leading developing countries of Asia the list is topped by Korea ,Iran.

Brazil holds the fifth position followed by Indonesia, Turkey, Argentina , Thailand , Singapore , China , Malaysia , UAE and Colombia.

## **China Automobile Industry**

China automobile industry can be regarded as one of the largest growing automobile industries in the world. The market is continually flourishing and as a consequence, automakers are hastening to invest in China automobile industry.

A survey report also shows that in 2002, the car sales arose to 62% with a high profitability, that is why leading automakers like Honda attain highest unit margins in China.

The report also shows that between 2001 to 2005, the annual growth rate of China's car consumption was 54.42%. In the year 2005, motor vehicle production and sales in China increased by 27.32% and 25% respectively. In the year 2006, motorcycle production and sales in China crossed 21 Million Units mark.

### **China automobile market scenario**

The automobile production cost in China is higher than in Japan, Europe or U.S. The tariffs are also higher than other leading automobile manufacturing countries. The income levels in China seem to be climbing and consequently the potentiality of automobile market is also rising.

## **Japan Automobile Industry**

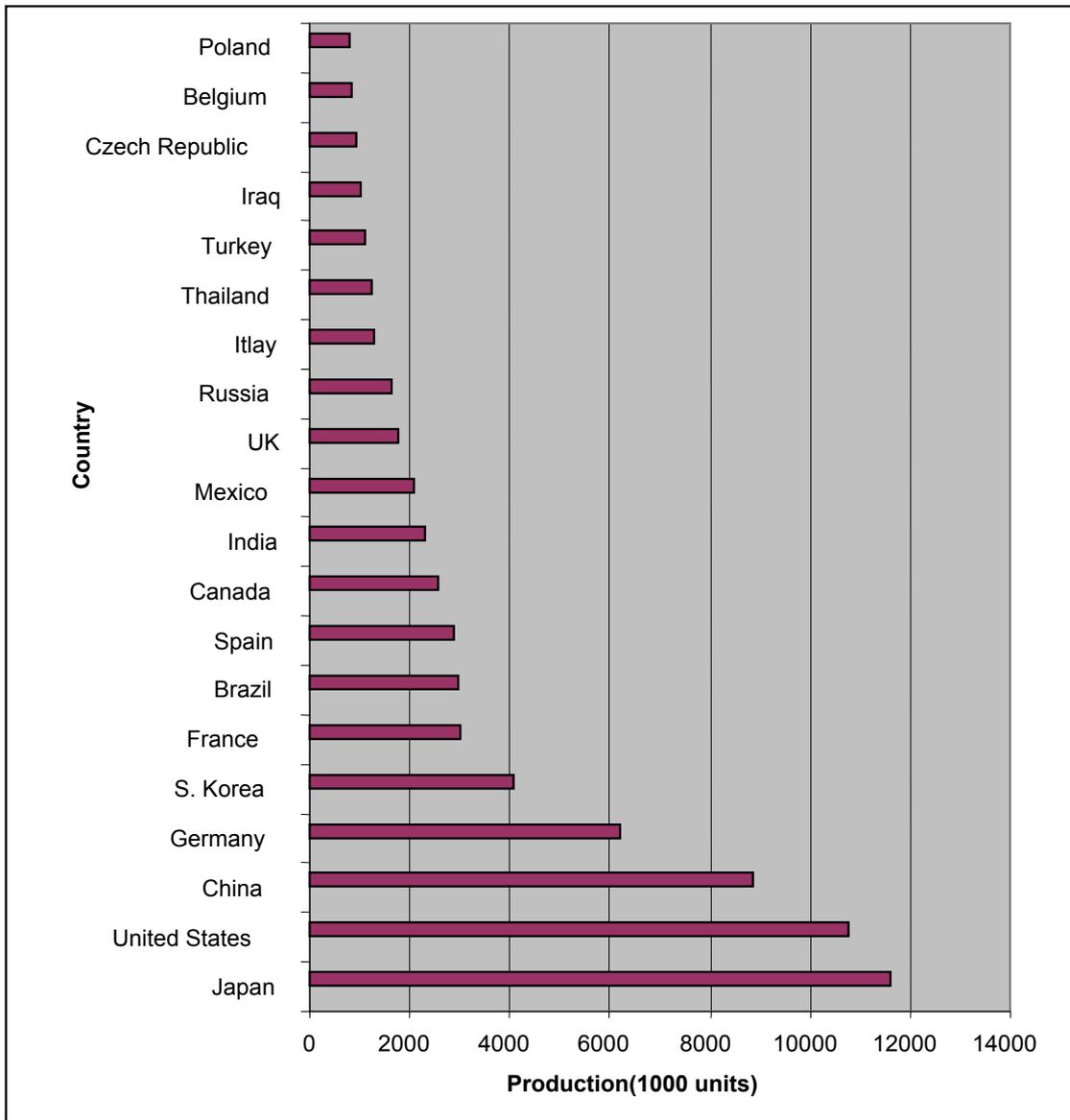
The **Japanese Automobile Industry** has grown constantly over a long time and has finally overtaken the U.S. Automobile Industry as the number one producer of automobiles in the world. The Major manufacturers of automobiles in Japan – Toyota, Honda, Nissan, Suzuki, and Mazda are also amongst the largest manufacturers of automobiles in the world.

Overcoming the ill effects of the defeat in the Second World War ,that had destroyed the national economy, was not an easy process on the part of the Japanese industries. The car manufacturers belonging to the Japanese Automobile Industry were commissioned to supply army trucks to South Korea by the Federal Government of the U.S. during the Korean War between 1950 and 1953. This was the main reason behind the upswing of the Japanese Automobile Industry that began in the 1960s.

The products of the **Japanese Automobile Industry**, that is, the Japanese automobiles, are of a superior grade and last for longer periods, in addition to being fuel efficient. The Japanese cars are primarily priced at affordable rates which are comparatively much lower than the automobiles produced by their foreign competitors especially those based in the U.S. and Western Europe.

Toyota has recently overtaken General Motors of the U.S. as the leading producer as well as seller of automobiles in the world. The Toyota Motor Corporation is therefore the best bet of the Japanese Automobile Industry. And Honda has overtaken Nissan to become the second largest producer of automobiles of the Japanese Automobile Industry.

**Top 20 motor vehicle producing countries in 2007**




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### 3.3. Challenges Faced by the Industry

The automotive industry today is in the middle of a dramatic and largely unprecedented transformation. The heart of this transformation is not about how the auto company does its work but rather how it defines itself.

The global automotive industry today is delivering unprecedented levels of customer value. Vehicles today are vastly superior to and more reliable than those produced just a decade ago in terms of economy, safety, comfort, functionality and performance. Fierce global competition for consumers is the prime mover behind this increase in customer value.

But the automotive industry structure that has endured for eighty years may be reaching the limit of its potential. For delivering the next significant increment of value, to automotive consumers, while remaining profitable will require dramatic increase in productivity across the value chain.

In 2008, with rapidly rising oil prices, industries such as the automotive industry, are experiencing a combination of pricing pressures from raw material costs and changes in consumer buying habits. The industry is also facing increasing external competition from the public transport sector, as consumers re-evaluate their private vehicle usage.

Some of the challenges are as follows:-

- Business transactions to sustain and grow core revenues .
- Cost reduction/performance improvement .
- Emerging markets .
- Excess labour, production capacity, inventory, and predatory pressures on margins .
- Improving supply chain efficiency .
- Managing retiree health care costs .
- Retail and distribution performance .
- New regulations (accounting standards, government regulations - e.g., block exemption reform, IFRS, ELV, CAFE, EU accession, CO2 regulations).

## **AUTOMOBILE INDUSTRY IN INDIA**



Automobiles were introduced to India in the late 1890's, the manufacturing industry only took off after independence in 1947. The [protectionist](#) economic policies of the government gave rise in the 1950's to the Hindustan Motors Ambassador, based on a 1950's Morris Oxford, and, is still ubiquitous in the roads and highways of India. Hindustan Motors and a few smaller manufacturers such as [Premier Automobiles](#), Tata Motors, Bajaj Auto, [Ashok](#) and [Standard Motors](#) held an oligopoly until India's initial economic opening in the 1980's. Tata Motors launches its first truck in collaboration with Mercedes-Benz. The great Indian politician Sanjay Gandhi championed the need for a "people's car"; the project was realized after his death with the launch of a state-owned firm [Maruti Udyog](#) which quickly gained over 50% market share. The Maruti 800 became popular because of its low price, high fuel efficiency, reliability and modern features relative to its competition at the time. [Tata Motors](#) exported buses and trucks to niche markets in the developing world.

The liberalization of 1991 opened the flood gates of competition and growth which have continued up to today. The high growth in the Indian economy has resulted in all major international car manufacturers entering the Indian market. General Motors, [Ford](#), Toyota, Honda, Hyundai and others set up manufacturing plants. [Rolls Royce](#), Bentley and Maybach are examples of the few high end automobile manufacturers which entered India in the recent years. The Tata Nano is at the lower end of the price range costing approx [US\\$ 2,500](#) and Bugatti Veyron at the other with a price tag of over [US\\$ 2 million](#).

India's love affair with the automobile is famously embodied in the 1920's Rolls Royce collections of the erstwhile [maharajas](#). The growing middle class aspires for the automobile for its convenience and as a status symbol. Upper middle class and wealthy car owners employ full-time chauffeurs to navigate the aggressive and seemingly lawless traffic patterns of most cities. The construction of expressways such as the [Mumbai-Pune expressway](#) have opened up new touring opportunities. The expected launch of a Formula One circuit in New Delhi is expected to spark public enthusiasm for a motor sporting industry.

## **Current Scenario**

Over a period of more than two decades the Indian Automobile industry has been driving its own growth through phases.

India is one of the largest automobile industries in Asia . The automobile industry in India is the tenth largest in the world with an annual production of approximately 2 million units. According to the UNIDO report , India has made it to the top 15 automakers of the world and occupies the fourth position in the leading developing countries category of motor vehicle manufacturers . It has become a huge attraction for car manufacturers around the world.<sup>[3]</sup>

Though several major foreign automakers, like Ford, Suzuki, GM, and Honda have their manufacturing bases in India, Indian automobile market is dominated by domestic companies. Maruti Suzuki is the largest passenger vehicle company, Tata Motors is the largest commercial vehicle company while Hero Honda is the largest motorcycle company in India. Other major Indian automobile manufacturers include Mahindra & Mahindra, Ashok Leyland and Bajaj Auto.

The entry of Suzuki Corporation in Indian passenger car manufacturing is often pointed as the first sign of India turning to a market economy. Since then the automobile sector witnessed rapid growth year after year. By late-90's the industry reached self reliance in engine and component manufacturing from the status of large scale importer.

With comparatively higher rate of economic growth rate index against that of great global powers, India has become a hub of domestic and exports business. The automobile sector has been contributing its share to the shining economic performance of India in the recent years.

With the Indian middle class earning higher per capita income, more people are ready to own private vehicles including cars and two-wheelers. Product movements and manned services have boosted in the sales of medium and sized commercial vehicles for passenger and goods transport. Side by side with fresh vehicle sales growth, the automotive components sector has witnessed big growth. The domestic auto components consumption has crossed rupees 9000 crores and an export of one half size of the figure.

## **TURNOVER**

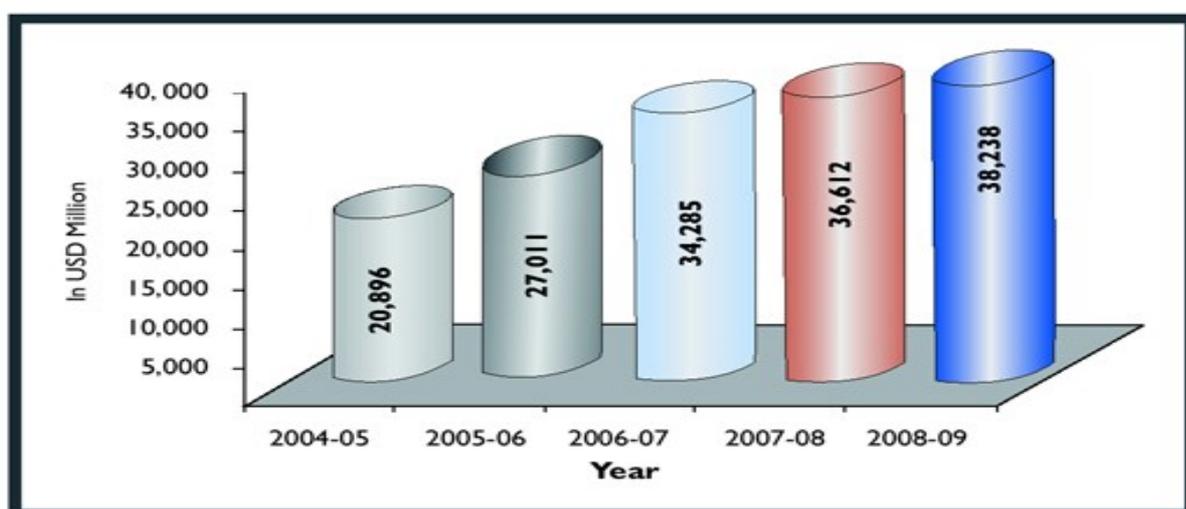
## Turnover of Automobile Industry

2004-05 to 2008-09

### Turnover of Automobile Manufacturers

Year	(Rs.In Million)
2004-05	20,896
2005-06	27,011
2006-07	34,285
2007-08	36,612
2008-09	38,238

GROSS TURNOVER OF THE AUTOMOBILE INDUSTRY IN INDIA  
2004-05 TO 2008-09



### Automobile Industry Performance during 2006- 2007

#### Domestic Sales

The cumulative growth of the Passenger Vehicles segment during April - March 2007 was 20.70 percent. Passenger Cars grew by 22.01 percent, Utility Vehicles by 13.21 percent and

Multi Purpose Vehicles by 25.20 percent in FY 2008-09.

The Commercial Vehicles segment grew by 33.28 percent. Growth of Medium & Heavy Commercial Vehicles was 32.84 percent and Light Commercial Vehicles recorded a growth of 33.93 percent.

Three Wheelers sales grew by 12.22 percent with sales of Goods Carriers increasing by 13.52 percent and Passenger Carriers by 11.33 percent during April- March 2007 compared to the corresponding period last year.

The Two Wheeler market grew by 11.42 percent during April- March 2007 over the same period last year. Motorcycles grew by 12.79 percent, Scooters grew by 3.48 percent and Mopeds registered a growth of 6.95 percent.

### **Exports**

Automobile Exports registered a growth of 25.43 percent during April- March 2007 over the same period last year.

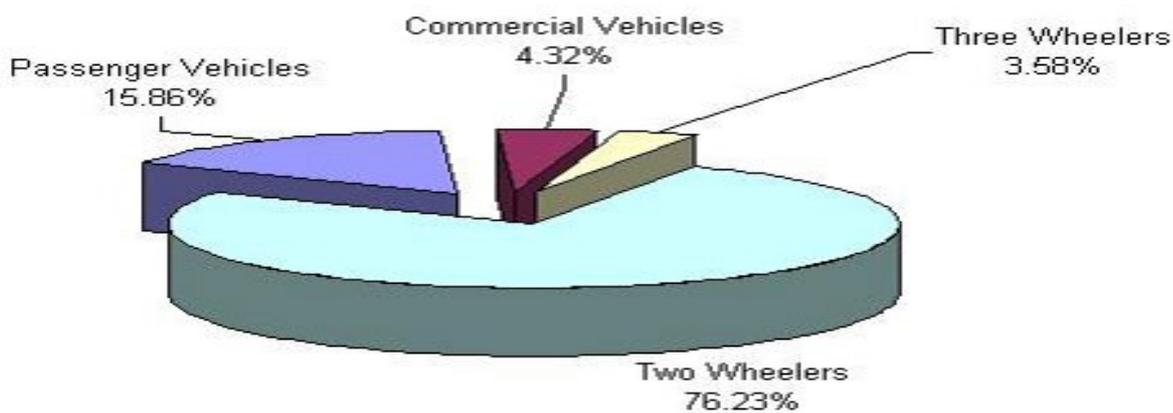
Passenger Vehicles Exports grew by 13.05 percent, Commercial Vehicles exports increased by 22.58 percent, Three Wheelers exports by 87.17 percent and Two Wheelers Exports grew by 0.65 percent

## **Market share Of Different vehicles**

### **Domestic Market Share for 2009-10**

<b>CVs</b>	<b>4.32%</b>
<b>Total Passenger Vehicles</b>	<b>15.86%</b>
<b>Total Two Wheelers</b>	<b>76.23%</b>
<b>Three Wheelers</b>	<b>3.58%</b>

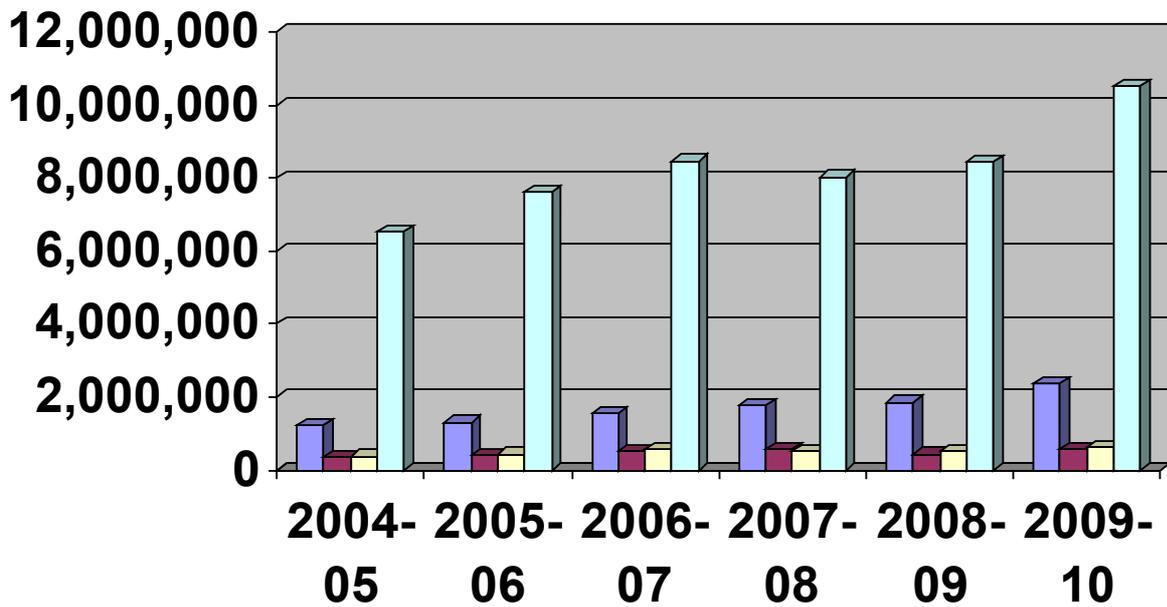
**Segment Wise Market Share in 2009-10**

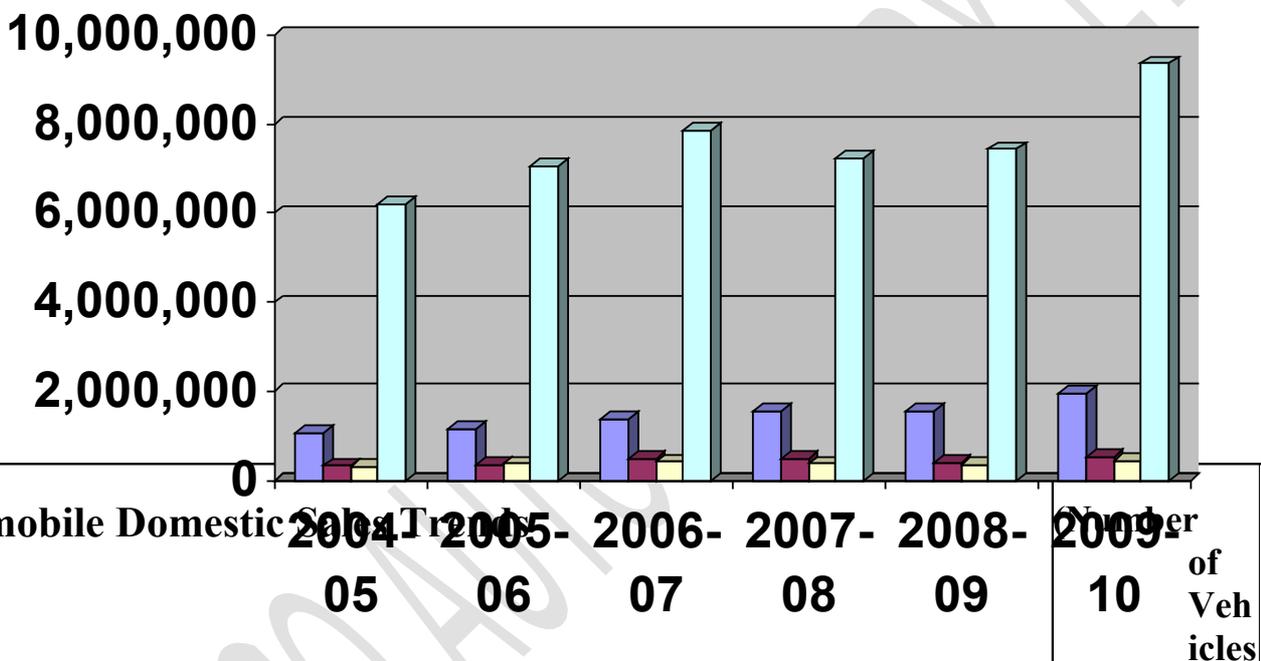


## TRENDS

<b>Automobile Production Trends</b>						<b>(Number of Vehicles)</b>
<b>Category</b>	<b>2004-05</b>	<b>2005-06</b>	<b>2006-07</b>	<b>2007-08</b>	<b>2008-09</b>	<b>2009-10</b>
<b>Passenger Vehicles</b>	1,209,876	1,309,300	1,545,223	1,777,583	1,838,593	2,351,240

<b>Commercial Vehicles</b>	3,53,703	3,91,083	5,19,982	5,49,006	4,16,870	5,66,608
<b>Three Wheelers</b>	3,74,445	4,34,423	5,56,126	5,00,660	4,97,020	6,19,093
<b>Two Wheelers</b>	6,529,829	7,608,697	8,466,666	8,026,681	8,419,792	10,512,889
<b>Grand Total</b>	8,467,853	9,749,503	11,087,997	10,853,930	11,172,275	14,049,830





Category	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
<b>Passenger Vehicles</b>	1061572	1143076	1379978	1549882	1552703	1949776
<b>Commercial Vehicles</b>	3,18,430	3,51,041	4,67,435	4,90,494	3,84,194	5,31,395
<b>Three Wheelers</b>	3,07,862	3,59,920	4,03,910	3,64,781	3,49,727	4,40,368

<b>Wheelers</b>						
<b>Two Wheelers</b>	6,209,765	7,052,391	7,872,334	7,249,278	7,437,619	9,371,231
<b>Grand Total</b>	7,897,629	8,906,428	10,123,988	9,654,435	9,724,243	12,292,770

### **THE KEY FACTORS BEHIND THE UPSWING:**

Sales incentives, introduction of new models as well as variants coupled with easy availability of low cost finance with comfortable repayment options continued to drive demand and sales of automobiles during the first two quarters of the current year. The risk of an increase in the interest rates, the impact of delayed monsoons on rural demand, and increase in the costs of inputs such as steel are the key concerns for the players in the industry.

As the players continue to introduce new models and variants, the competition may intensify further. The ability of the players to contain costs and focus on exports will be critical for the performance of their respective companies.

The auto component sector has also posted significant growth of 20 per cent in 2003-04, to achieve a sales turnover of Rs.30,640 crore (US\$ 6.7 billion). Further, there is a

potential for higher growth due to outsourcing activities by global automobiles giants. Today, this sector has emerged as another sunrise sector.

Indian Automobile Industry is growing. Also, the Automobile industry has strong backward and forward linkages and hence provides employment to a large section of the population. Thus the role of Automobile Industry cannot be overlooked in Indian Economy. All kinds of vehicles are produced by the Automobile Industry. India Automobile Industry includes the manufacture of trucks, buses, passenger cars, defense vehicles, two-wheelers, etc. The industry can be broadly divided into the Car manufacturing, two-wheeler manufacturing and heavy vehicle manufacturing units.

## **CHALLENGES**

Presently , the industry has to face a lot of pressure due to increasing inflation . The increasing inflation may affect the easily available finance for the purchase of vehicles which can decrease the purchasing power parity (PPP)of customers and hence the market.

The hiking inflation also increase the cost of inputs which in turn increase the cost the products . so, these are the challenges which the automobile market is currently facing.

## **Future Scenario**

The Indian automobile industry is going through a phase of rapid change and high growth. With new projects coming up on a regular basis, the industry is undergoing technological change. India is expected to overtake China as the world's fastest growing car market<sup>[1]</sup> in terms of the number of units sold and the automotive industry is one of the fastest growing manufacturing sectors in India.<sup>[2]</sup> Because of its large market (India has a population of 1.1 billion; the second largest in the world), a low base of car ownership and a surging economy.

At present the industry is enjoying a growth rate of 14-17% per annum, with domestic sales growth at 12.8%. The growth rate is predicted to double by 2015.

The total sales of passenger vehicles - cars, utility vehicles and multi-utility vehicles -

in the year 2005 reached the mark of 1.06 million. The current growth rate indicates that by 2012 India will overtake Germany and Japan in sales volumes.

In the beginning of the year 2008 the industry had faced a slow down , but the slowdown in the industrial was a short term phenomenon and the country is expected to record a 10% growth in industrial production during 2008-2009 as against of 8.3% in the previous fiscal ,Centre for Monitoring Indian Economy(CMIE).

#### **4.4 Major Manufacturers in Automobile Industry**

The major Car manufacturer are Hindustan Motors, Maruti Udyog, Fiat India Private Ltd., Ford India Ltd ., General Motors India Pvt. Ltd., Honda Siel Cars India Ltd., Hyundai Motors India Ltd., Skoda India Private Ltd., Toyota Kirloskar Motor Ltd., to name a few.

The two-wheeler manufacturing is dominated by companies like TVS, Honda Motorcycle & Scooter India (Pvt.) Ltd., Hero Honda, Yamaha, Bajaj, etc. The heavy motors like buses, trucks, defense vehicles, auto rickshaws and other multi-utility vehicles are manufactured by Tata-Telco, Ashok Leyland, Eicher Motors, Bajaj, Mahindra and Mahindra, etc.

## **CHAPTER 5**

### **COMPANY PROFILE**

**RICO AUTO INDUSTRIES LTD**

<b>R</b>	<b>Reliability</b>
<b>I</b>	<b>Innovation</b>
<b>C</b>	<b>Competitiveness to go Global</b>
<b>O</b>	<b>Optimization of</b>

# **Scarce Resources**

## **Vision & Goal**

### **Visions**

To be the preferred supplier to Original Equipment Manufactures across the globe.

### **Goal 1 / 11**

“To be a US \$ 1 billion Enterprise by 2011”

## **5.1 Company Profile and History**

RICO AUTO is a dynamic world class engineering company supplying a broad range of high precision fully machined ferrous and aluminium components and assemblies to automotive OEM's globally.

RICO Group is to be defined as a corporate in commercial, organizational, and technical terms, which is a self contained unit in the System with its own master data and processes.

### **THE EARLY YEARS**

**RICO Group** was founded in the year 1977 with a ferrous foundry and a machining shop at **Ludhiana** under the present company name RICO Castings Ltd. In 1984, RICO diversifies into Aluminum high pressure Die Casting by setting up its plant at **Dharuhera** under the company RICO AUTO INDUSTRIES LTD. In 1992, RICO AUTO started its plant at **Dharuhera**. By installing Automatic High Pressure Moulding Ferrous Foundry and Machining shop. Subsequently the Aluminum High Pressure Die casting and Machining facility at **Gurgaon**, Rico soft tech LTD **Gurgaon**, RICO AUTO INDUSTRIES Inc **USA**; RICO AUTO INDUSTRIES (**UK**) LTD, UK were added to its fold in the year 2001, 2001, 2001 & 2004 respectively.

### **RICO Group Companies**

Account Management, Logistics & Warehousing, Assembly Operations

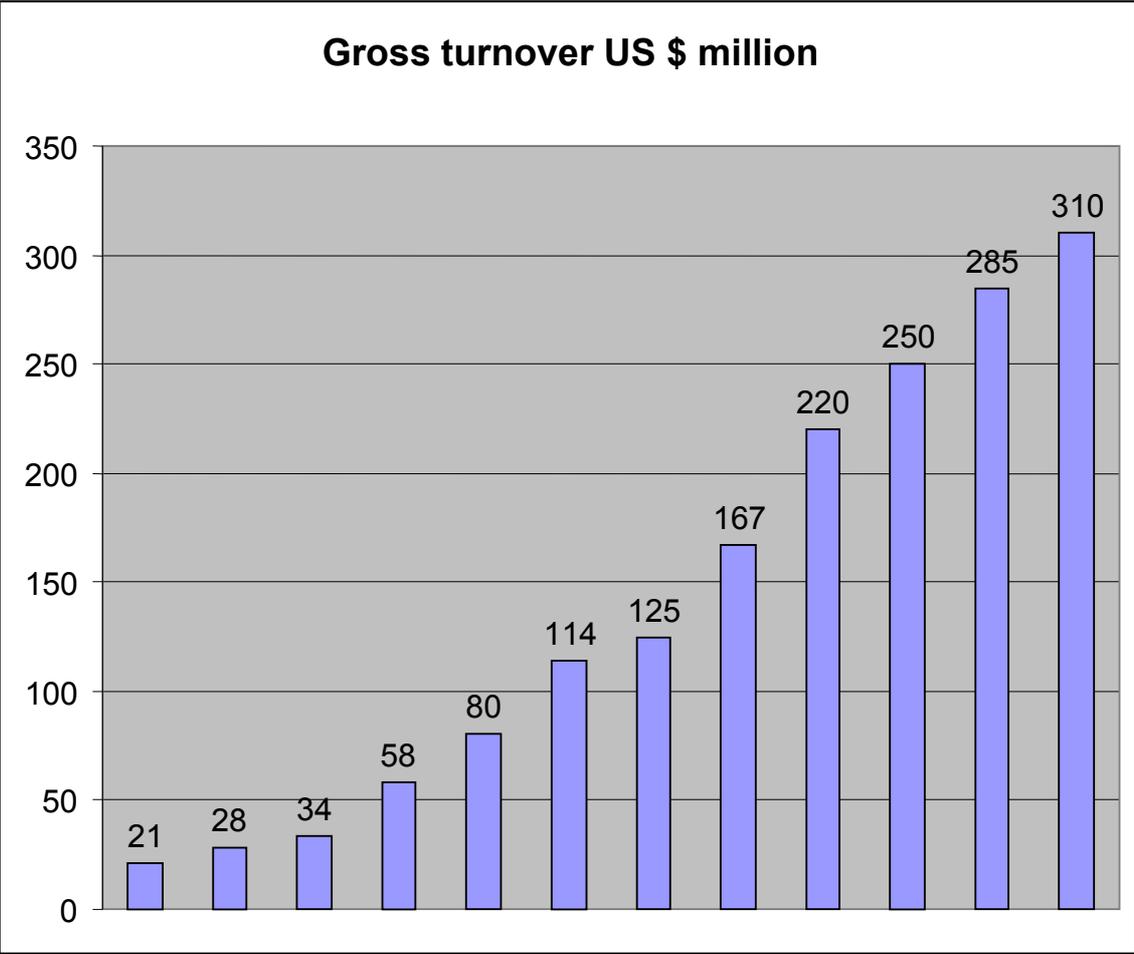
1. Michigan USA
2. London UK

### **Manufacturing Facilities in India**

1. RICO (Dharuhera) –Aluminium Die Casting & Machining
2. RICO (Gurgaon) –Aluminium + Ferrous + Dies & Moulds, R&D, Testing & Validation, CAD CAM CAE
3. Joint Venture –FCC RICO (Manesar) –Clutches
4. Group Company –RCL (Ludhiana) –Ferrous Casting & Machining (Low Volume)
5. Group Company –RCL (Manesar) –Aluminum Casting & Machining (Small to Medium Size Parts)
6. Joint Venture –FCC Rico (Chakan Pune) + Planning New Plant RICO (Pune)
7. New Plant RICO (West Bengal)
8. New Plant RICO (Chennai)

## **TURNOVER**

**RICO Group's Turnover  
10 Times Over Last 10 Years  
(From 1997 to 2008)**



**RICO Auto Industries –Joint Ventures & Subsidiaries**

<b><i>FCC RICO</i></b>	<i>50% FCC</i> <i>50% RICO</i>	<b>Clutch Assembly</b> <b>Two Wheelers &amp;</b>
------------------------	-----------------------------------	---

		<b>Four Wheelers</b>
<b>CONTINENTAL RICO</b>	<b>50% CONTINENTAL 50% RICO</b>	Hydraulic Brake Products & Services Vehicles of all Classes
<b>MAGNA Power train RICO</b>	<b>50% MAGNA Power train 50% RICO</b>	Oil Pump Water Pump (Automotive Engines) (India & Europe)
<b>RICO JINFEI</b>	<b>7.5% JINFEI 92.5% RICO</b>	Aluminum Alloy Wheels Two Wheelers
<b>RICO USA &amp; UK</b>	Wholly Owned Subsidiary 100% RICORICO	Assembly, Logistics Customer Support

### **Manufacturing & Engineering Capabilities**

In the Aluminium division, the RICO AUTO INDUSTRIES LTD. has continued to establish its leadership in the high pressure die casting (HPDC). Today it is one of the largest HPDC companies with 76 HPDC machines (from 135 tns to 1800 tns locking force). Its efforts for developing complex and intricate components like high-pressure die cast Cylinder Block, along with its technology provider Teksid Aluminium are on

track. During the year 2006-07 it started implementation of low pressure and gravity casting processes and commenced working on Cylinder Heads and Alloy Wheels.

In the Ferrous division it has 4 moulding lines. During the year 2006-07 it successfully launched Ferrous Cylinder Blocks for Maruti Suzuki. It also started supplies of complex turbine center housing for Honeywell and launched new metallurgies used for higher temperature applications. It has set up casting capacity in advance and is working towards bringing value creating business for the same.

## **PRODUCT RANGE**

Following are the major components, which are manufactured in RICO AUTO INDUSTRIES LTD.: -

### **For Motorcycle Parts**

- HUB Assembly
- HUB Front
- HUB Rear
- Clutch Assembly
- Flange Assembly
- Panel Assembly
- Rotor Oil Filter
- Gear Shift Drum

### **For Car Parts**

- Oil Pump Assembly
- Case Distributor
- Rocker Arm
- Break Drum

➤ Manifold

## CURRENT GLOBAL CUSTOMERS

### Two Wheelers

•



•



**VOLVO**

### Passenger Cars

•





•



•



•



•



•

## Commercial Vehicles

**CATERPILLAR®**

•



•

**TATA**

•



•

 **Perkins®**

•

**KOMATSU**

•

## System Suppliers

**Honeywell**

•

**QP Pump**  
Matsusaka  
Engineering

•

## **BUSINESS AND MARKETING STRATEGIES**

- To receive order from different automobile car/motorcycle companies.
- No retail / sale marketing by company and spare parts also supply to spare parts division of herohonda and maruti udhog etc.

## **GOVERNMENT POLICIES RELATED TO BUSINESS**

- Legal requirement as per law.
- Registration with all government departments for legal obligations like- excise, saletax, pollution, labour department etc.
- Benefit policy by the government like- saletax exemption by the government, tax incentive schmes, excise duty exemption etc.

## **TAX ASPECTS**

In case of manufacturer OEM (original equipment manufacturer) company concession rate of tax charged by the company against tax rebates used by the firms like- **C-FORM, D-FORM** in haryana.

### **5.2. Organisational Structure**

Every organization has a structure of its own according to its need and requirements. RICO also has its own organizational structure which has been described below:-

#### **Finance Department**

It is concerned with efficient planning and controlling of financial, affairs of enterprise. Finance section maintains all types of accounts, all payments and receipts are dealt in this section .In the RICO the finance department is divided into two parts Finance section and Excise section.

## **Purchase Department**

In RICO purchase department is playing major and key role.

Centralized purchase system has been adopted by its purchase department. Purchase department is concerned with the purchase Raw materials, machineries, and stationary and other bought parts required in the company.

## **Production Department**

The function of production department is to effectively plan and regulate the operations of that part of an organization which is responsible for the actual transformation of materials into finished products.

In Rico, the production activity is looked after by the Engineers which directly reports to the chief engineer.

The raw material used by the Rico is aluminium and other various bought parts. The production department is classified into various departments such as:

- Die casting
- Fettling
- Machining
- Assembling
- Production planning and control

## **Human Resource Development Department**

The principal component of an organization is its 'Human Resource '. Motivated workforce is the most valuable asset of an organization. Same is the philosophy at RICO. Endeavor to understand its people their jobs, their attitude towards the organizational problems and loyalties is the sheer concern of its personal policies.

## **Quality**

Quality is the department which is responsible for maintaining the quality of the product. This department thoroughly checks the quality of the material whether it is a raw material, bought out part, goods in process or the final product.

**SWOT ANALYSIS  
OF  
RICO *AUTO INDUSTRIES LTD.***

## **STRENGTHS**

- Innovation
- Optimum utilization of scarce resources
- Adaptability in relation to changing environment
- Specialization physical assets by providing training and development program
- Future visionary
- Perfection in work through cooperation and coordination within group or department as combined team.
- Growth and diversification and expansion of units through globalization
- Amicable relationship with the shareholder.
- Regular dealing with the customers creates a strong bonding.
- Effective and efficient working of top and middle management through incorporation of SAP Software.
- Certificate honored by Worldwide Organization for, World class quality-

ISO TS16949, ISO 14001, Total Productive Maintenance, Six Sigma.

- At Rico, its people have always been its most valuable resource. It supports its people with continuous training and education facilities. There are 4129 employees including 1515 contractual employees in the company as on 31<sup>st</sup> March 2009. RICO's IT Infrastructure has been keeping pace with the best in the industry. RICO has been successfully running SAP since the last two years.

## **WEAKNESSES**

- Computation in currency in relation to other economies of world.
- Determining the level of material (minimum and maximum levels). Due to minimum level of material which leads to hurdle in production. On other hand, due to maximum level of material the funds are being blocked.
- Same kind of material codes assigned to different material types (ROH and HALB) due to which valuation of material cost is being effect

## **OPPORTUNITES**

- The company sees opportunities both in the domestic markets and overseas markets with existing and new customers. To fully explore opportunities with all customers, the company has developed dedicated account teams to focus on each customer. The company has also taken steps to expand at various locations in India close to its new customers plants.
- The Company is implementing a strategic plan to build global scale and capabilities to meet the requirement of its existing as well as its new customers. In the year 2006-07 two Joint Ventures have been signed, one with continental AG of Germany for Hydraulic Brake Systems and other with Jinfei of China for Aluminum Alloy Wheels, which would contribute towards growth & profitability of the company in the coming years.

- On the export front the Company has taken initiatives to develop new export markets for its products and services.

## **THREATS**

- The rising rate of interest is a matter of concern as it impacts the automotive demand for vehicles (two wheelers and passenger cars) and also the cost structure of auto component manufacturers.
- Availability and cost of power is another area of concern for the industry .The company has been taking steps in this regard to improve both the availability and cost of power.
- Rising input costs and volatility in material is a challenge that impacts margins. The Company is pursuing appropriate indexation mechanisms with its customers, however there is always a lag effect.
- The Indian Rupee appreciation vis-à-vis the US \$ is an area of concern for exports. This impacts margin for export revenues
- China continues to be a challenge at a global level on account of its prices.
- The Company is exposed to strong competitive pressures both domestic and overseas.
- The Company is also exposed to financial risk from changes in interest rates, foreign exchange rates, and commodity price

## **CHAPTER-6**

# **MATERIAL MANAGEMENT**

## **6.1. Introduction**

Materials management is the branch of logistics that deals with the tangible components of a supply chain. Specifically, this covers the acquisition of spare parts and replacements, quality control of purchasing and ordering such parts, and the standards involved in ordering, shipping, and warehousing the said parts.

Material Management is the function responsible for the coordination of material planning , sourcing and purchasing , stocking and controlling Materials in an optimum manner so as to provide a pre decided service to the organization at a minimum cost .

Material Management and Quality control have not been given their due place earlier , but today these functions have acquired an important position in the organization .

Organizations now states “MATERIALS ARE EQUIVALENT TO MONEY”

Material management is recognised as one of the very important functions of the organisation and Quality assurance service for the satisfaction of the customer .

Many organization in India are switching on to the integrated Materials Management concept because of the many advantages offered by it . However this has also necessiated professional development of managers so that they can fulfill the requirements of integrated materials management function which demands an ability to bring together conflicting and yet interrelated functions. The economic pressure such as inflation and credit squeeze will place exacting demands on Material Management in future .

Material Management is ideal for industries seeking foolproof tracking of the flow of management of material information in their enterprises from purchase , inventory management to aspects of production and sales . It can also be a stepping stone for future ERP implementation

Each year, an entire week is dedicated to celebrating resource and materials management professionals for their outstanding contributions to healthcare and the overall success of the supply chain. National Healthcare Resource & Materials Management Week (MM

Week) provides an opportunity to recognize the integral role materials management professionals play in delivering high-quality patient care throughout the healthcare industry. In 2008 Material Management Week is October 8-12 October.

## **Material**

Materials are physical substances used as an input to production or manufacturing.

They are of different types :

### **(i) Raw material**

It includes the unprocessed good which is processed to make the final good or product .It includes goods like iron ore, aluminum etc.

### **(ii)Semi finished products**

These are the goods, which are under processing. They are also called as WIP (Work in process) goods.

### **(iii) Bought out parts.**

They are the parts, which are purchased & are directly used in the goods to make the final product. They are like spring, oil seal, break shoe etc..

## **Management**

Management in simple term means the act of getting people work together to accomplish desired goals. Management comprises planning, organizing, resourcing, leading or directing or controlling an organization, or efforts for the purpose of accomplishing a goal.

So, Management is an art of getting things done through others.

On the basis of **System**: “Material Management is the basic data view for maintaining material description, unit of measure, and configurability of material, design document and allocation structure.”

On the basis of **Finance**: “Material Management is the purchasing view for maintaining unit of measure/dimension, basic purchase data, material status, tax indicator, purchase order texts, foreign trade data, defining purchasing values and source destination.”

On the basis of **Physical working**: “Material Management is the storage view to maintain unit of measure/dimension data, hazardous material number, storage condition, shelf life, goods receipt/issue, cycle counting, general stores data, define, strategy for stock placement/stock removal and palletization data.”

Material management is defined as the integrated function of purchasing & allied activities, so as to achieve the maximum coordination and optimum expenditure in the area of materials.

In other words it can also be defined as:

“Function responsible for the coordination of planning, sourcing, purchasing, moving, storing and controlling materials in an optimum manner so as to provide a pre –decided service to the customer at a minimum cost.”

### **6.3.1 Material Planning**

Based on the sales forecast and production plans, the material requirement planning and control is done. This involves estimation of individual requirements of parts, preparing material budgets, forecasting level of inventories, scheduling orders and monitoring the performance in relation to production and sales.

### **6.3.2 Material Budgeting**

A budget is an instrument of defining departmental objectives and controlling performances.

A material budget is a coordinated estimate of the consumption and purchases in an organization relating to specified period. It ensures better and effective materials planning which in turns helps in attaining the objectives of the organization in an effective manner.

The **purpose** of material budget is:

- To plan the purchase.
- To control the purchase.
- To assess the finance as per the requirements.
- To make provision for finance as per the requirements.
- To control the consumption of the material.
- To plan the consumption of the materials in the concerned department.
- To take into account the production schedule while planning and controlling the consumption of materials.
- To watch the performance of the purchase and material control department.
- To detect the deviations , trace the defects and apply correctives.
- To suggest ways and means for improvement in the next budget.

### **Factors which govern drawing up a material budget**

a. The past rate of consumption and its ratio with production:

The rate of consumption plays a vital role in framing a material budget as it helps in estimating correctly the materials for ensuing period .

b. The production program of a future specified period for which the materials budget is intended .

c. The financial burden and investment pattern :

The means in every organization are limited and the uses are numerous . Tactful and intelligent utilization will lessen the financial burden and set out a well planned and effective investment pattern. So the main task of the framer of materials budget is to allocate available funds in a manner in which maximum value is extracted from them without disturbing the product program.

d. The materials cost :

This factor too affects the material budget in the sense that it directly influences the financial commitment of the organization . a study , therefore , of the cost trend of the material is required . future trend has also to be studied and incorporated while preparing a material budget.

e. The demand and Supply Curve :

The study of market conditions pertaining to the demand and supply trends is to be made before venturing to draw up a materials budget . The production schedule and financial commitments have to adjusted according to the trend in the market.

## **Material budgeting and accounting**

Accounting plays a very important role in material budgeting. The adequate help of cost and stores accounting by way of providing up-to –date, reliable and required data to the materials control department enables it to base its forecasts on the data supplied . the cost and stores accounting are both to supply the required information . Both of them are complementary to each other in this respect . To watch the performance and to suggest corrective measures , the help of accounting has to be taken. Hence accounting and materials budgeting go together for achieving the set objectives of the organization.

Material budgeting helps in controlling the cost and thus makes the org cost conscious. Cost conscious , in turn makes the organization productivity conscious . Every material requisition is considered according to its necessity , every man-hour is utilized to its fullest capacity and every hour spent is made to prove its worth . this is achieved through cost and result analysis which is possible only through accounting. Since materials budgeting aims at cost reduction, accounting again comes to the fore for making the budget result producing.

## **Techniques of drawing Material budget**

### **Budget summaries**

They are summaries of various individual budgets of the organization . They are placed in proper relation with another . They are viewed and analyzed and help is taken from them in arriving at a certain conclusion for the purpose of incorporation of figure in a budget estimate and for drawing up conclusion for the next budget.

### **Manufacturing and Trading Account**

This technique is comparatively result-oriented as it is based on the performance of the budget vis-à-vis results . this accounts reveals in detail various items relating to the opening stock, purchases , expenses on purchases , production , closing stock , work in progress etc. and finally the cost of production and profit made out of manufacturing or trading process.

### **Savings on investment in materials**

The overall performance of any organization can be judged by the profit it has made during a specified period and a budget is a means to setting the objective of “profit making “ in the right perspectives through its estimates based on return on investment . The material budget consumes the major portion of funds available in the organization ; it is appropriate to measure the performance of a material budget by finding out the savings on the investment made in the past and possible expected savings in the future . The amount of savings achieved by any material budget effectively is a measure of its success and this can be better judged by the ratio of savings in investment in materials.

### **6.3.3 Purchasing**

Purchasing is the acquisition of needed goods and services at minimum cost from competent and reliable source .

It includes :

- Selection of sources supply
- Finalization of terms of purchasing .
- Placement of purchase order follow-up .
- Maintenance of smooth relations with suppliers
- Approval of payment to suppliers
- Evaluation and rating of suppliers.

So, the objective of purchasing is ensuring continuity of supply of raw materials , sub-contracted items and spare parts and at the same time reduce the ultimate cost of the finished goods.

#### **6.3.4 Receiving**

Another function of the material management is to receive the goods sent by the vendors and properly inspect their quality and quantity and give proper space to it in the stores.

#### **6.3.5 Storing**

In the stores materials are properly stored until drawn by the various departments. Materials are equivalent to Money and great attention must be paid to the proper storage so that they are free from damage and possibility of pilferage.

The right type of equipment is used for storage and handling so that material handling expenses are kept to the minimum.

The function of stores is to receive , store and issue materials.

The stores are divided into:

- Receiving stores .
- Tools stores.
- General stores.
- Raw Material stores.
- Finished parts stores.

Receiving stores receives all incoming materials , checks the correctness of quantity received, arranging for inspection , then sends to respective stores along with a note called material receipt note.

Stores are responsible for :-

- Physical handling and control of materials.
- Preservation of stores.
- Minimization of obsolescence and damage, through timely disposal and efficient handling.

verification of stocks and reconciling for the book figures

### **6.3.6 Inventory Control**

Inventory is the stock of items or resources required in an organization for running production smoothly.

Inventory is necessary because of the following reasons:

- To meet the customer's requirements .
- Smooth functioning of production process
- Uncertainty due to irregular demand and supply .
- Economies of scale.
- Best utilization of equipment and resources.

Major inventory related costs can be classified into four categories:

#### **➤ Inventory carrying cost**

Carrying inventory costs money . This is the cost a company has to incur for maintaining stocks to run the works smoothly .It involves the following costs :

- (i) Blocking working capital such as interest on capital and depreciation etc.
- (ii) Occupying space thereby incurring warehouse rent and cost of facilities like bins, racks , etc.

- (iii) increasing risks of spoilage , obsolescence , theft , leakage etc.
- (iv) Salary of store staff, etc.
- (v) Insurance premium.

➤ **Ordering costs**

Every time an order is placed for replenishment , certain costs are involved which are: Paper work expenses, follow up cost, cost of transporting the material and its receipt and inspection .

➤ **Under stocking costs**

It is the cost incurred when an item is out of stock. It includes the cost of lost production during the period of stock out and the extra cost per unit which might have to be paid for an emergency purchase .

➤ **Over stocking cost**

The major problem faced by inventory management is to determine:

- Type of control required for each type of inventory.
- Level of inventory at which new purchase should be placed.
- Quantity of material which should be purchased by each purchase order.

Various types of inventory management are adopted to find the answers of these problems. The main techniques are:

➤ **ABC Analysis**

It is one of the well known method of classifying items.

This method is based on annual consumption value which is obtained by the multiplication of unit price by the quantity consumed annually . For example , on the ad hoc basis , the items accounting for an annual consumption of more than Rs one lakh may be classified as A category , the items below may be C category and the in-between items then be the category .

The high consumption value A category items should be more strictly controlled .the policy for A items should be to maintain very low inventory combined with frequent ordering , norms of consumption should made tight .Medium control will be exercised for the moderate consumption value B items and very little control on the low consumption value C items.

➤ **Economic order quantity(EOQ)**

Economic order quantity is that quantity of material for which each order is placed. Whenever the inventory level comes down to the re-order point, a fresh order is placed for procuring the inventory equal to the EOQ.

$EOQ = \min(\text{ordering cost} + \text{carrying cost})$
---

Ordering Cost =  $\frac{\text{Ordering cost}}{\text{Order}}$  x (no. of order placed during year)

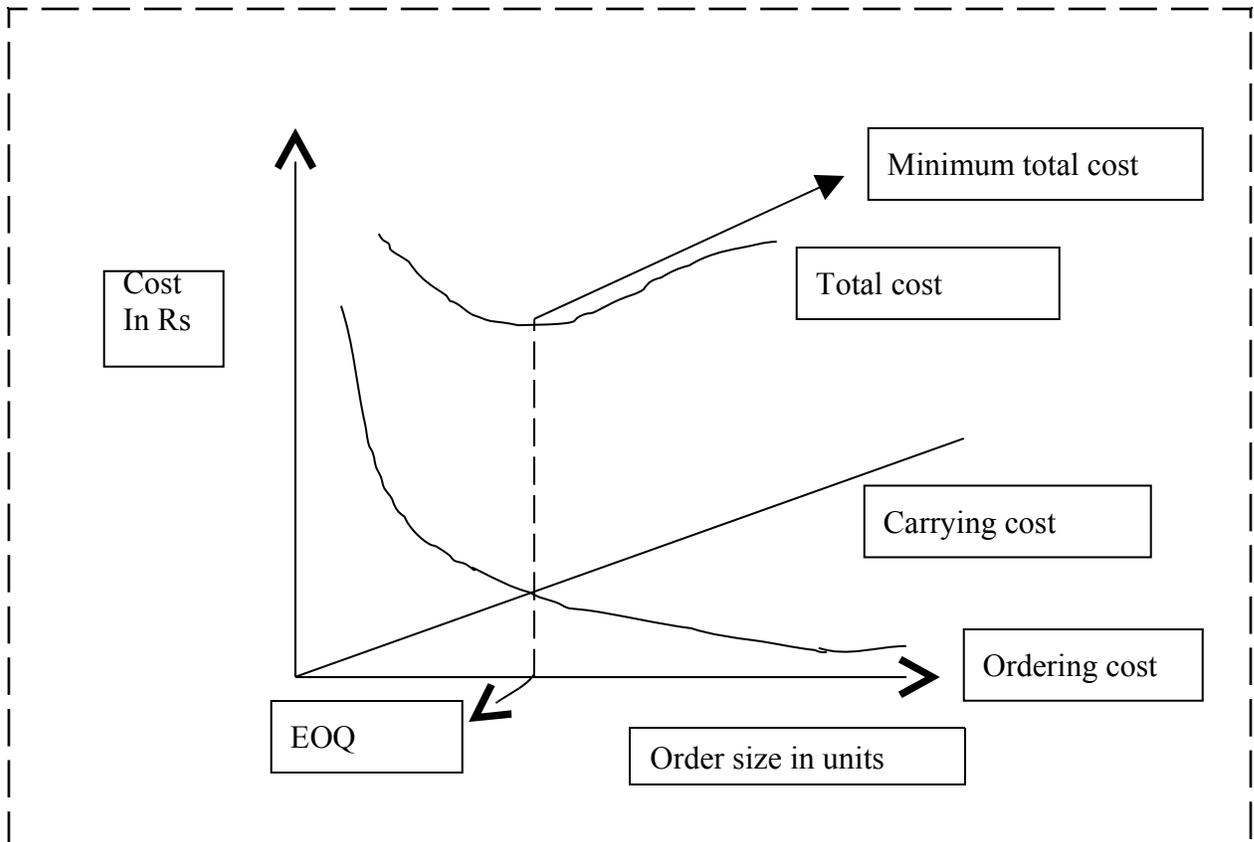
Ordering Cost includes-

Cost of placing orders

Cost of receiving delivery like transportation expenses, receiving expenses, inspection expenses and recording expenses.

Carrying costs includes-

Cost of maintaining inventory, insurance expenses against fire and theft, obsolescence of inventory , clerical and accounting cost of handling inventory , opportunity cost of funds locked up in the inventory.



Mathematically EOQ can be determined by the formula:

$$EOQ = \sqrt{\frac{2 \times R \times O}{C}}$$

Where:

R = Annual Purchase Requirement

O = Ordering cost per order

C = Carrying cost per order

## **Work Order Control**

A work order control is an internal factory organization to build a specified quantity of a sub assembly by a specified date . All work orders require the issue of on hand inventory for their completion . Prior reservation of on hand inventory is the best method of preventing shortages at the time of issue . The actual issuing of parts and work orders and the actual receipt of finished product is accomplished using the material issues and receipts module.

## **Waste Management**

It includes :

- disposal of surplus
- obsolete items
- scrap
- salvage

There are certain material that are to be disposed of from time to time induces a greater vigilance on the part of the material department otherwise they block the space and money. It is handled by the material department because it has the better knowledge of the market conditions and of the dealers and users who purchase such items. It puts pressure on the original suppliers to accept the return of surplus stocks.

## **Surplus material**

Surplus material is the state of an item when the stock is to last longer than a reasonable period or when it is no longer required for the job.

Reasons of surplus stock :

- When the purchase is made in larger quantities than the actual production requirements
- When buying of bulk quantity is unavoidable , e.g. if one require alloy steels 1 ton only , whereas company like SAIL sells only 5 ton minimum amount.
- When operations are suddenly curtailed.
- When there is change in the specifications or size. Then the original material becomes surplus.
- When project is completed.

### **Obsolete items**

Obsolete items are those material which are neither damaged nor otherwise spoiled and which have economic worth but these ones are no longer useful for the company's operation owing to many reasons such as changes in product line, process, materials and so on.

### **Scrap**

Scrap is saleable. All scrap materials are collected, properly segregated and stored in one place as far as possible.

Disposal of scrap \*

- 1 .                      Inviting offers of scrap from time to time.

The list of scrap with approx. quantity are circulated among the interested parties or advertised in the newspapers .

2.                      Annual contract

In the annual contract system , the contract is given to the single majority party or two to three small parties . The benefit is that scrap generated goes off from the usable at the earliest and hence valuable space in the factory is saved.

3.                      Public Auction

The following are some of the categories of materials which come under the scrap are:

◆ **Wastage**

Pieces cut out of raw materials during manufacturing process are called wastage .Like while die casting the die produced consist of extra material then the actual die which is required.

◆ **Spoilage**

The items which are spoiled during the course of manufacture or storage are called spoilage . the spoilage in manufacture involves loss of machine hours as well as man hours . Special care should also be taken to avoid spoilage during storage.

◆ **Turnings , borings etc :**

When operations such as turnings borings and , drillings etc. are carried out on metal bars , sheets ,etc a certain portion of material is removed by such operation . Such arising are stored separately and sold as scrap.

◆ **Irreparable parts of equipment**

Certain parts of equipments become irreparable after some years e.g. are crank shaft, connecting rods, bearings etc. of an engine

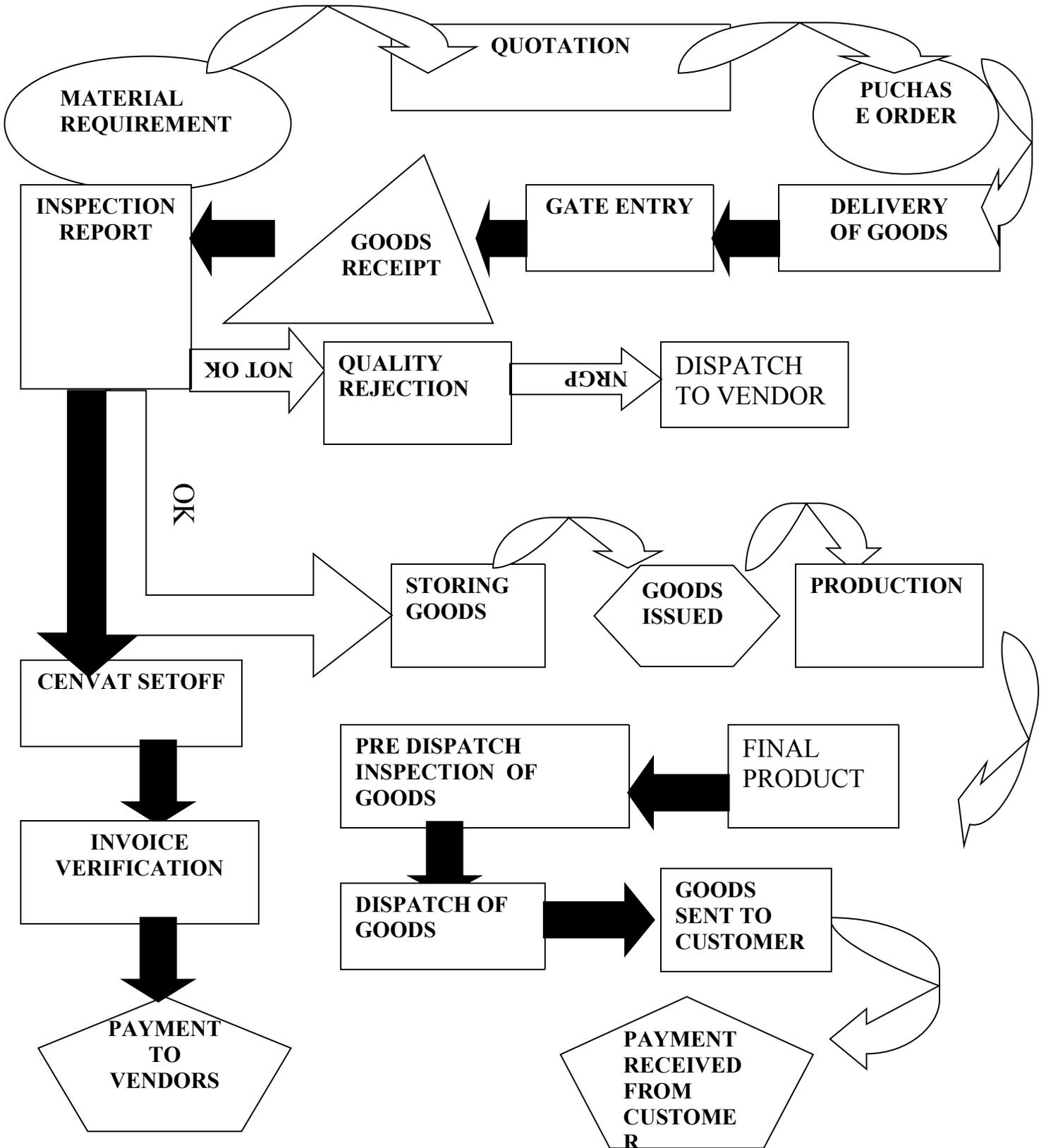
◆ **Empties :**

Empty drums , bags , packaging cases , etc. which are non – returnable to suppliers are treated as scrap and sold .

**Salvage**

Salvageable materials are those which cannot be used for the original purpose but out of which certain parts can be removed and used , probably after rework. Eg , an aircraft which has met with a serious accident and which is beyond repairs is a typical example . It can no longer be used for original purpose of flying but it may be possible to take out certain parts which can be used as spare parts.

**DOCUMENTATION**  
**OF**  
**MATERIAL MANAGEMENT**



## **MATERIAL REQUIREMENT**

Material requirements are identified either in the user departments or via materials planning and control. MRP stimulates the complex flow of material required to manufacture products and generates a material plan .MRP planning starts with up to date information about current inventory levels and the planned production requirement

In the RICO there is requirement of goods like Raw material, tools, bought out parts, oil and lubricant from external sources and goods in process are required from one machine shop to another and to assembly line. Both the requirements whether from internal or external source are controlled by the Material Management Department.

## **QUOTATIONS**

A **quotation** is an offer by a vendor to a purchasing organization regarding the supply of materials or performance of services subject to specified conditions.

A **quotation** consists of items in which the total quantity and the delivery date of an offered material or service are specified.

An item of a quotation may contain a delivery schedule made up of a number of schedule lines in which the total quantity is broken down into smaller quantities to be delivered on the specified dates over a certain period.

## **Request for quotation**

A request for quotation (RFQ) is an invitation extended to a vendor by a purchasing organization to submit a quotation (bid) for the supply of materials or performance of services

Request for quotations from vendors is done manually either through ordinary letter, mail, FAX or verbally through phone in RICO AUTO INDUSTRIES LTD.

## **Vendor Evaluation**

When the quotations are received from the vendors they are then evaluated to select the best option for the organization .Presently Vendor Rating is done in RICO AUTO INDUSTRIES LTD. manually.

## **Advantages of the quotation**

1. With the help of the quotation we can predict the price is suitable for our business .
2. Easy to identifying the quantity and quality .
3. Easy to analyzing and summarizing .
4. Unable us to find the vendor who is providing the better quality of material at the cheapest rate.
5. JIT – just in time supply of material .

## **Disadvantages of the quotation**

1. Time waste to finding the list of the vendor .
2. Because of availability of the list of vendors, don't try to have access to the vendor who supplies good quality of the material at the cheaper rate.

## **PURCHASE ORDER**

A **purchase order** is a formal request or instruction from a purchasing organization to a vendor or a plant to supply or provide a certain quantity of goods or services at or by a certain point in time.

The Purchasing system adopts information from the quotation to help to create a purchase order.

Order can be created directly or indirectly

**“Directly”** means that the request for the goods is directly sent to the vendors by the organization.

**“Indirectly”** means that the purchase requisition is initiated via some medium like giving advertisement in the newspaper etc.

In the RICO the request for the purchase is sent to the vendor directly by entering the requirement need in the system analysis program.

There are two types of purchase order:

**Simple order:**

It is the order in which both rate and quantity are specified.

**Open order**

It is the type of order in which quantity is not mentioned only the rate is specified. In this ending date is not mentioned and per day scheduling is done . This type of ordering is applied in RICO.

**DELIVERY OF GOODS**

As per the order of the organization the vendor send the goods or delivered the goods in the organization using any mode of transport .

**GATE ENTRY**

When the goods sent by the chosen vendor reaches at the gate of the organization an entry is done on the gate of the organization which is called as gate entry. It is a record to keep an account that something is entering in the premises of the organization.

**GOODS RECEIPT**

It is an entry which shows that some goods are received by the organization ,which are sent by the vendor.

A goods receipt leads to an increase in the warehouse stock. In **RICO AUTO INDUSTRIES LTD.** first gate entry is done against the Purchase Order, Challan No., etc and details of excise invoice, commercial invoice, etc are entered. Bills of Entry details are entered in case of Imported Materials. After entering these details, goods are allowed to move in to store premises. . In store MRR is prepared with reference to the Gate Entry No.

## **INSPECTION REPORT**

Generally involves the checking of the goods received from the vendor as per the purchase order placed. It includes a receipt, which contains the description of good (quality, quantity, rate, prescribing the date of delivery schedule) on the basis of that the goods are inspected. Quality Inspection is carried out , the material which satisfies the standards are accepted and the other one is rejected .

Accepted material quantity is entered in the system and stock updating is done.

Rejected materials can be re-offered for quality inspection depending upon the requirement and urgency .Otherwise non-returnable gate pass(NRGP) is prepared and the rejected material is sent back to the vendor along with the NRGP and outgoing excise invoice .

If one want to return the delivered goods to the vendor for some reason (For ex. Due to poor quality or because they are damaged), so this function of return of the goods can be used, even if one has already posted the good receipt.

## **CENVAT SET OFF**

Whenever a manufacturer has procured inputs or capital goods for manufacturing of final products, the excise duty has to be paid.

A manufacturer or producers of final product or provider of taxable service shall be allowed to take credit of duty of excise as well as of service tax paid on any input or capital goods received in the factory or any input service received by manufacturer of final product. The duty of inputs includes:

### **I. Basic Excise Duty**

- II. Special Excise duty
- III. Additional Duty of Excise (Textiles & textile articles)
- IV. Additional Duty of Excise (Goods of special importance)
- V. National Calamity Contingent Duty
- VI. Education Cess
- VII. Additional duty of customs equivalent to duties mentioned above, and
- VIII. Additional duty of Excise (Levi able under sec.157 of the Finance Act, 2003)

## **INVOICE VERIFICATION**

Logistics Invoice verification is a part of Material Management (MM). It is situated at the end of the logistic supply chain. The Incoming Invoices are verified in terms of their content, prices and arithmetic. When the invoice is posted, the invoice data is saved in the system. The system updates the data saved in the invoice documents in Material Management and Financial Accounting.

JOURNAL ENTRY:-

Goods Receipt A/C Dr.

To Vendor A/C

(Being goods received from the vendor)

An invoice contains various data, such as:

- Who issued the invoice?
- Which transaction does the invoice refer to?
- How much tax one has to pay?

## **PAYMENT TO VENDORS**

After the verification of Invoice, in the RICO the invoice is entered in the SAP through MIRO Invoice, which helps in overall calculation of the amount to be paid to the vendors. The payment is made as per the agreement between the company and the vendor. The payment is made through cheque.

Following entry is passed:-

Vendor A/C Dr.

To Bank A/C

(Being payment made to the vendors)

## **Storing Goods**

After the inspection ,the O.K. or accepted goods are sent to the stores .The stores than:

- Classify and codify all items.
- Carry out ABC analysis.
- Fix minimum and maximum level for various items.
- Decide about the replenishment about the various items at right time.
- Post orders on stock control cards immediately .
- Post Goods inwards Notes (GIN's) and requisition daily .

- Prepare shortage reports.
- Prepare lists of obsolete and surplus items time to time.

### Storage Location

This is the smallest organizational unit in material management where stocks are visible and are managed on quantity basis. Separate Blocks are made for different type of goods whose entry and exit are maintained by the store keeper.

There are different types of storage location .

S.No.	Name of Store	Materials that are Stored
1	Main Store	All the items Including RM, BOP, Project, Consumable etc. are stored
2	Finish Goods Store	Finished material are kept in the same
3	Rejection Store	All types of rejections are kept in the same
4	Under Inspection Store	Material stored which are under Inspection
5	Scrap Store	Stores for handling waste materials

Different types of storage location in RICO DHARUHERA PLANT

SN	Storage Location	Name of Storage Location	Material that are Stored
	DPOY	Open Yard Location –Dharuhera	Oil & Lubricants, fuel etc.

1		DPDC	
2	DPMS	Main Store-Dharuhera DPDC	All others except defined in the chart
3	DPDO	DOL items Store-Dharuhera DPDC	Items which does not required Quality Inspection i.e. Bearings, Sprockets, seals etc.
4	DPRS	Rejection Store -Dharuhera DPDC	All types of rejections are to be kept in the same
5	DPFG	Finished Goods Store -Dharuhera DPDC	Finished material to be kept in the same
6	DPNM	Non Moving & Obsolete item Store – Dharuhera DPDC	Non Moving & Obsolete (Other than Spares)
7	DPQS	Quality (Rework & Segregation) Store - Dharuhera DPDC	Under Rework Material to kept in the same
8	DPPC	Project & Capital item Store – Dharuhera DPDC	Item which is related to work order/Project/Capital are to be kept in the same
9	DPSY	Scrap Yard – Dharuhera DPDC	Material which is to be scrapped
10	DPMM	Maintenance item Store – Dharuhera DPDC	Maint.Spares to be stored (responsibility Maintenance Deptt.)
11	DPEM	Maintenance item Store – Dharuhera DPDC	Maint.Spares to be stored (responsibility Maintenance Deptt.)

## ISSUE OF RAW MATERIAL

Procedure for issuing material vary to some extent like raw materials and finished components are issued on requisition.

To get the material issued:

User will prepare the issue slip (reservation).

Inform it to stores, where it is verified, for stock quantity and for other parameters.

Material is issued to the user and GI is posted against the cost center which issue is required.

After getting the material issued from main stores user keeps the material in their sub store (storage location) there after whenever needed material is consumed in the plant directly from sub stores.

There are two ways in which goods are issued , they are

FIFO System

LIFO System

### **FIFO / Weighted Average Method**

The FIFO formula assumes that the items of inventory which we purchased or produced first are consumed or sold first, and consequently the item remaining in inventory at the end of the period are those most recently produced or purchased.

FIFO method probably gives the closest approximation to the actual cost flows, since it is assumed that when stocks are sold or used in a production process, the oldest are sold/used first, and therefore, the balance of the stock on hand at any point represents the most recent purchases or production. This would generally be the case in business which deals with perishable goods or which have a moderate to rapid turnover of goods. By allocating the earliest costs incurred against revenue, actual cost flows match the physical flow of goods.

FIFO may be more appropriate method, which will result in proper matching of costs and revenue and is followed in RICO.

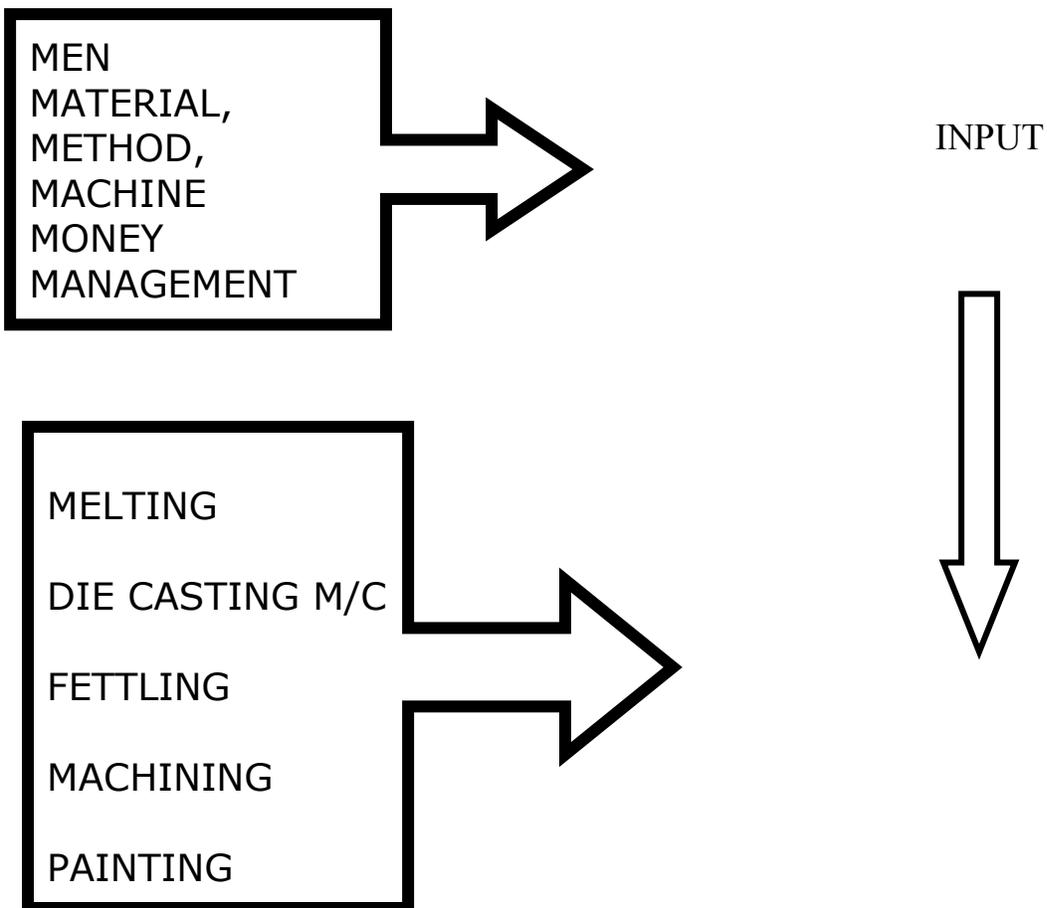
### **LIFO Method**

A method of inventory valuation based on the assumption that the last good purchased are the first good used or sold , this allows matching current cost with current revenue flow ever unless cost remain relatively unchanged , the LIFO method will usually misstate the ending inventory balance for accounting purposes, due to the fact that inventory typically involves caused from earlier periods.

It also causes lot of material wastage .So it is not a suitable method .

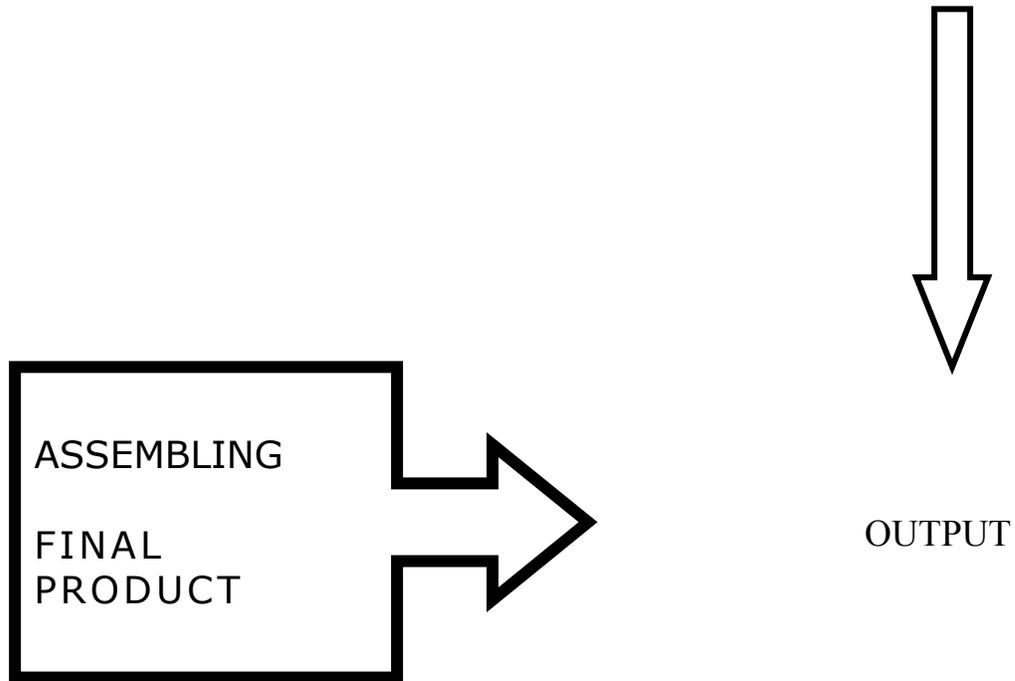
## PRODUCTION

Production may be defined as the conversion of inputs –men, machine, materials, money, methods and management into output through transformation process.. Output may be a goods or service rendered.



# PROCESSING

PROCESSING



In RICO AUTO INDUSTRIES LTD. The spares parts are produced by processing the various inputs by the process-

## **Melting of aluminum**

Melting is the major factor which controls the quality of the castings. Metals may be melted in various types of furnaces such as open hearth furnace , electric arc furnace , rotary furnace ,cupola furnace etc. .The choice of metal depends on the kind of metal , quality of metal to be melted etc. Furnace are constructed so that raw material and fuel and air if needed may enter and product may leave . there should be some means for maintaining temperature and chemistry control of metal.

The aluminum ore is melted at the temperature of about 900- 1000cc, which is then transferred to the casting machine.

## **Casting**

Metal casting process consist of making moulds , preparing and melting the metal , pouring liquid metal into the moulds and then allowing it to solidify. When solidified the metal will take the shape of cavity. It is then taken out from the mould. The solidified object is called casting.

## **Fettling**

After breaking the mould when casting is removed from mould ; sand , unwanted projections, risers etc. are adhering at its surface. Fettling is the process of cleaning and finishing casting.

## **Machining**

In the machining the finishing touch is given to the castings so as to make it proper for use like making holes for the screws etc.

## **Painting**

After machining the castings are ready .They are then painted in the paint shop.

## **Assembling**

The assembly of component is done after the components are painted and the final product is ready .

## **Pre Dispatch Inspection**

Before dispatching the material or final product to the vendor they are first inspected to check the quality of the final product produced then only it is DISPATCHED to the customer . Pre dispatch inspection is very essential as it checks the quality which is the foremost demand of each and every customer in this competitive era and also it helps in making the goodwill of the organization.

## **Payment received from the customer**

Finally the final products are sent to the customer and payment is received from the customer. The payment can be received through cheque or through Bank to bank transactions.

## **CHAPTER-7**

## **EVALUATION**

## **7.1 Findings And Analysis**

- The goal and objective of the organizations ,can be different like the one organization is working for Sales Maximization other for wealth Maximization and the another one for revenue maximization etc . , but the foremost objective of any organization is to make profit i.e. to earn money for the organization. The overall performance of any organization is judged by the profit it has made during a specified period. To check the performance of the organization different types of accounts and budgets are prepared and the material budget consumes the major portion of funds available in the organization.

**About 2/3 of the total working capital of the organization always blocked in the material for the purpose of production** and logistics in the form of raw materials , goods in process and finished goods.

For ex: -

If the cost of Raw material = Rs.22,00,000  
Cost of Bought out material = Rs. 40,000  
Cost of Oil and Lubricant = Rs. 50,000  
Total cost on materials = Rs.22,90,000

Expenditure on Employee salary = Rs.12,00,000  
Total Expenditure = Rs.34,90,000

Thus, total cost on material = 22,90,000  
Total Expenditure 34,90,000  
= 65.6%=66%  
= 2/3

**The Expenditure on Materials is about 2/3 of the total Expenditure of the company** because of which it is recognized as one of the important function of the organization.

The turnover of Rico groups in 2008 is us 310 \$ million as compare to last 10 years .the production trend of automobile industry in various category such as passenger vechile, commercial vechile, three wheelers,two whellers. In 2009-10 the production of passenger vechile is more than as compare to 2008-09 is 23,51,240 .on the other side the production trend of commercial, two, three wheeler in 2009-10 is more than as compare to 2008-09.

The domestic sales trend of automobile industry in 2009-10 is more than than as compare to 2008-09. The sales trend of passenger vechile is 19,49,776. same way sale trends of commercial,three, two wheelers is more as compare to last year 2008-09.

The automobile industries has various export procedure. The export trend of automobile industry in 2009-10 is also greater than as compare to last year 2008-09 is 4,46,146 . the export trend of commercial vechile in 2009-10 is 45,007 which is more than from 2008-09.

The turnover of automobile industry in 2008-09 is greater than from last five year. In 2008-09 the turnover of automobile industry is 38,238 million. The turnover of automobile industry shows upward trend.

The domestic market share in 2009 -10 is in commercial vechile is 4.32% , total passenger vechile is 15.865, total two wheeler is 76.23%, three wheeler is 3.585% is greater than last years.

The cumulative growth of the Passenger Vehicles segment during April - March 2007 was 20.70 percent. Passenger Cars grew by 22.01 percent, Utility Vehicles by 13.21 percent and Multi Purpose Vehicles by 25.20 percent in FY 2008-09.

The Commercial Vehicles segment grew by 33.28 percent. Growth of Medium & Heavy Commercial Vehicles was 32.84 percent and Light Commercial Vehicles recorded a growth of 33.93 percent. N 2008

#### **Inventory Turnover Ratio for last year (in crores)**

$$\text{Formula} = \frac{\text{cost of good sold}}{\text{Avg. stock}}$$

$$\text{Sale} = \underline{\underline{114.92}}$$

$$\text{Average stock} = \frac{71.58+77.18}{2} = 74.38$$

$$\text{INVENTORY TURNOVER RATIO} = \frac{\text{COST OF GOODS SOLD}}{\text{AVG. STOCK}}$$

$$= \frac{114.92}{74.38} = 1.54$$

## Chapter-8

## CONCLUSION

Material management is an important management tool which will be very useful in getting the right quality and right quantity of supplies at right time, having good inventory control and adopting sound methods of condemnation and disposal will improve the efficiency of the organization and also make the working atmosphere healthy any type of organization , wheather it is private, government, small organization, big organization and household.

Even a common man must know the basis of material management so that he can get the best of the available resources and make it a habbit to adopt the principles of material management in all our daily activities.

## **Chapter-9**

### **BIBLIOGRAPHY**

## **Journals**

Brent D. Williams, Travis Tokar, (2008) "A review of inventory management research in major logistics journals: Themes and future directions", International Journal of Logistics Management, The, Vol. 19 Iss: 2, pp.212 - 232



### **Books:**

- Khanna O.P Material management Sahitya Publication 2003
- Gilbert.G Material management Kalyani publication 2001

### **❖ Newspapers and Magazines:**

- The Times of India
- Business Today
- India Today



**Websites Used:**

- [www.acma.com](http://www.acma.com)
- [www.autoindia.com](http://www.autoindia.com)
- [www.automobiles.indiabizclub.com](http://www.automobiles.indiabizclub.com)
- [www.cmie.com](http://www.cmie.com)
- [www.economywatch.com](http://www.economywatch.com)
- [www.financialexpress.com](http://www.financialexpress.com)

**❖ Articles**

**[Brent D. Williams](#)**

**[www.highbeam.com](http://www.highbeam.com)**

**[Jon Schreibfeder](#)**

**[www.choicemagazine.com](http://www.choicemagazine.com)**

**[Duplaga, Edward A.; Pinto, Peter A.](#)**