

# History of Automotive design in India

DESIGN RESEARCH SEMINAR REPORT

MVDSPL - 28

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2016

## Acknowledgement

In acknowledgement, I would like to thank Prof Ravi Poovaiah for guiding me in the project. I am very thankful for his support, patience and valuable inputs during this project.

I would also like to thank my family, my teachers and all my friends from IDC, for being a constant source of support and inspiration.

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## Introduction

### INDIAN AUTOMOBILE INDUSTRY

India is one of the biggest automobile market in the world, and it is the world's fastest growing one also. It comes in as no surprise as India has the second largest population in the world, and a low base of car ownership (25 / 1,000 people) and a growing economy, India has become a huge attraction for car manufacturers around the world.

While automobiles were introduced in India as long ago as 1890's, the manufacturing started only after 1970. The first mass produced car to be available in Indian roads is Hindustan Ambassador, which is based on 1950 Morris Oxford. Until 1980's, as Premier Automobiles, Tata Motors, Bajaj Auto, Ashok and Standard Motors were the only manufacturers in India. The revolution in the automobile industry started with the introduction of a people's car from Maruti Udyog, a state owned company. The result was Maruti 800. It became popular because of its low price, high fuel efficiency, reliability and modern features compared to its competition at the time. Tata Motors exported buses and trucks. The liberalization of 1991 opened up India for the global automotive giants like General Motors, Ford, Toyota, Honda, Hyundai and others set up manufacturing plants. The economic growth resulted in high end automobile manufacturers to come to India like Rolls Royce, Bentley and Maybach.

### AUTOMOTIVE DESIGN IN INDIA

Automotive design is the stream which deals with the appearance and design of automobiles, both exterior and

interior. It's an integral part of the industry. Automobile designers take into account comfort, appearance, as well as efficiency. An automobile designer should work with the technical team, so that the technical and design aspects of the vehicle will go in harmony.

As Indian automotive industry developed, many strong design facilities also grew up with it. This research goes through the history of automotive design in India.

## Important automobile models

The Indian automobile industry has seen some milestones in terms of design over the years. This section will be going through those automobiles which were designed or modified for Indian market in chronological order.

### HM AMBASSADOR



(1)

The Hindustan Ambassador is basically a redesigned Morris Oxford of 1950's. It was made in India by Hindustan. It was in production from 1958 to 2014. It is one of the most iconic cars in India. The car became synonymous with Indian taxi. It was the first car to be made in India and was once a status. It has a simple,

Functional and timeless design. The comfortable rear seat made it the first choice for Indian Politicians and families alike.

### PREMIER PADMINI



(21)

Premier Padmini was basically a rebranded version of Fiat 1100 Delight. It was manufactured in India by Premier Automobiles Limited (PAL) from 1964 to 2000. It is a smaller, lighter and nimbler car compared to its competition like HM Ambassador, Standard Herald etc. Its simplicity and ease of driving made it popular amongst youngsters and celebrities alike. Its popularity peaked in 1970 – 80's.

## STANDARD HERALD/GAZEL



The Standard is an Indian brand, which brought Triumph UK's cars to India. The factory was setup in Madras. The Gazel is a redesigned Herald In 1971, by Nasser Hussain. It was the first automobile design took place in Indian industry.

## SIPANI DOLPHIN



(22)

Sipani Automobile limited was a company which used to make fiberglass bodied cars. Based in Bangalore, Sipani prepared mould for their cars from UK based Reliant motors. The Dolphin is their most successful model. It had parts from Maruti 800 which made it look like a copy of 800. Being built out of fiberglass, Dolphin is pretty lightweight and was used in rally racing. The company went defunct because of high maintenance cost of fiberglass panels.

## MARUTI 800



(3)

Maruti 800 was the first people's car in India. It was manufactured by Maruti Suzuki in India from 1983 to 2013. It is regarded as the most influential car in India. It enabled countless Indian families to fulfil their dreams. This small, compact car became an Indian household name thanks to its reliability, low cost and low maintenance.

## MARUTI SUZUKI GYPSY



(23)

Maruti Gypsy is a 4WD vehicle based on Suzuki Jimny. For Indian market, it was elongated and provided 4 bucket seats or 2 bucket seats and a rear bench. Launched in Indian in 1985, It was primarily used for offroad purposes. The model became popular with law enforcement due to its tough build, ruggedness and simplicity. It instantly became a favourite as a rally car amongst Indian enthusiasts.

## TATA SIERRA



(4)

The Tata Sierra was the first automobile to be designed and produced in India, in 1991. Sierra was the first diesel vehicle to be accepted as a personal car in India. It was a 3 door SUV. The distinctive boxy styling of the car made it instantly recognizable and a design icon. It has a huge fan following. It brought feature such as adjustable steering, power windows, power assisted steering and a tachometer. Production ended in 2000.

## TATA INDICA



(5)

The Tata Indica is a very important automobile in the Indian industry. It was the brainchild of Ratan Tata. His idea of the car was a family car for India, as spacious as an Ambassador, as big as a Zen and as costly as Maruti 800. It was launched in 1998. it is considered as India's first indigenously developed passenger car. The styling was done by Italian design house, I.DE.A. It had a set of indigenously developed engines.



## SAN STORM



(24)

San Storm is one of the very few convertible cars available in India. Launched in 1998 by San motors, the Storm was designed by Le Mans group, a French design firm. Powered by a 1.1 liter Renault engine, Storm had a good power to weight ratio thanks to its Double skinned fiberglass body and steel tubular chassis. Introduced as a lifestyle product, it did not do very well in market due to its high maintenance cost, lack of dealerships and impracticality. But it still remains as a memorable Indian car.

## TATA SAFARI



(6)

The Safari is the first SUV to be designed, developed and manufactured entirely in India. It replaced Tata Sierra when launched in 2001. It was very successful because it was a very good alternative to expensive foreign sedan cars. And being an SUV, it could tackle the worst of Indian roads with ease.

## MAHINDRA SCORPIO



(25)

The Mahindra Scorpio is a 4WD SUV. It was launched in 2002. It is the first model which was conceptualized and designed in-house by Mahindra. Scorpio was designed to be a tough, go anywhere SUV which can be used for highway trips also. The idea clicked and it became a huge success in Indian and other markets. The first version was launched in 2002. It got a series of cosmetic and mechanical upgrades along the years.

## TATA NANO



(7)

The Tata Nano is a very important milestone in Indian automobile history. It marked India in the global automotive scene as one of the most capable. It is the world's cheapest car in the world, at Rs. 1,00,000, when launched. But far from a cheap, low quality city runabout. Tata has launched the Nano as a family car for four or five people. The realization of this car was an engineering and design challenge. To keep cost to a minimum, extreme engineering measures had to be taken, with clever and ingenious industrial design.

## MAHINDRA XUV 500



(26)

XUV500 is a mid size SUV from Mahindra. Launched in 2011, It was designed and developed by Mahindra's design centers in Nashik and Chennai. It was designed to appeal to the SUV crazy Indian market, to replace C and D segment sedans which are less practical. Its design was inspired from a Cheetah. XUV was the first monocoque chassis car ever produced by the manufacturer. Its contemporary styling, price and practicality made it hugely popular in India.

## BAJAJ QUTE



(27)

Also known as Bajaj RE60, the Qute is an inexpensive, 4 passenger rear engine quadricycle. It was designed to replace autorickshaws. The Qute is the result of Bajaj's alliance with Renault and Nissan to make a USD 2500 car with 35 jmpl mileage. Introduced to Indian market in 2013, its ingenious polymer- metal body provides it with a very low kerb weight of just 400 kg.

## MAHINDRA E2O



(28)

E2O, also known as Mahindra Reva NXR is a electric micro city car. It is a developed version of India's first electric car, the Reva. Launched in 2013, the exterior styling was done by DC and Mahindra. The detailed production exterior and interior design was done in-house by REVA's design team. It provides 120 km of range and passed all safety regulations.

## DC AVANTI



(29)

It is India's first indigenously designed and developed sports car. It was developed by DC Design of designer Dilip Chhabria. Launched in 2014, this car is for the nation's youth who aspires of owning a sports car. It is powered by a 2.0 liter turbocharged 4 cylinder engine sourced from Renault. The body is reinforced with carbon fiber to make a strong and lightweight package.

## MOTORCYCLE DESIGN

India is the second largest motorcycle producer in the world. It is comparable to large markets like Japan and China. In the year 2005-2006, the annual production of two-wheelers in India stood at around 7600000 units. The Indian consumer moves to larger capacity, higher performance models. That is evident from the sales figures of higher capacity motorcycles and number of performance motorcycle brands entered India the recent years. India also has many talented designers, engineers and research facilities. India has already become a location for outsourcing of high level engineering and design by international brands. The KTM-Bajaj, TVS-BMW joint ventures are proof for this. Along with European brands, Japanese and Korean motorcycle brands invest in research and develop in India.

The main motorcycle brands of Indian market are Hero, Bajaj, TVS, Honda, Suzuki, Royal Enfield etc. The following part will be discussing about some of the important motorcycle/scooter models.

## ROYAL ENFIELD MINI BULLET



(30)

The production of Royal Enfields stopped in 1971 in England, India started producing Enfield 200 from 1973. They are basically a reskinned version of the 173cc Villiers Crusader. Their name was changed to Mini Bullet for marketing strategies. This model represents the survival of the Enfield brand in India. It had classic styling with a flat seat with thick cushion to make it an everyday motorcycle.

### YEZDI ROADKING



(31)

Yezdi was an iconic motorcycle produced by Ideal Jawa motorcycles of Mysore, India. It was in production from 1978 to 1996. It was based on Jawa CZ 250. The powerful engine, low slung stance and compact dimensions made it an instant success. This 250cc motorcycle has become a cult classic over time.

### ESCORTS YAMAHA RD 350 (RAJDOOT)



(32)

This is a motorcycle which needs no introduction in India. When launched in 1983, it was the most powerful motorcycle available in the country. The Escorts Rajdoot is basically a Yamaha RD 350. It had to be detuned to be useful in Indian riding conditions. Even after detuning, it remained the most powerful bike in India until recent years. Design wise, only some cosmetic changes were made to the motorcycle.

### YAMAHA RX100



(33)

Yamaha RX100 was in production in India from 1971 to 2006. The motorcycle was nothing short of exceptional. It was aimed at youngsters who need a sporty motorcycle. With its powerful 100cc 2 stroke engine, compact dimensions and light weight meant a true pocket rocket. Even if it was not designed in India, the customization and restoration carried out in this model shows the importance of it in Indian market.

### BAJAJ CHETAK



(34)

In 1980, Bajaj launched Chetak, a in-house redesigned Piaggio Vespa Sprint. The compact, practical design made this scooter a huge success as it provided transportation for millions of families across India. It has become an icon and cult classic. It is one of the first monocoque chassis vehicles around. Chetak also enabled female riders to come up in the scene.

## HERO HONDA SPLENDOR



(35)

In 1994, Hero Honda ( now Hero) launched this motorcycle in India. It combined the lightweight, easy to ride nature of RX100, but with a more fuel efficient, less polluting 4 stroke engine. With reasonable pricing, Splendor went on to become the most important motorcycle in India's history. In 2000, Splendor became the largest selling motorcycle in the planet. The formula is so successful that Splendor has been in the top 5 most selling motorcycle from the day it was introduced to this date.

## BAJAJ PULSAR



(36)

Bajaj Pulsar is widely acknowledged as India's first sport bike. In 2001, Bajaj launched this motorcycle in Indian market in 150 and 180cc engine capacities. Pulsar was developed by Bajaj's product development section and Tokyo R&D. Styling was done by legendary designer Glynn Kerr. Such a sporty motorcycle was quiet new to Indian audience and it went on to become a success. Today, Pulsar has 5 variants.



## ROYAL ENFIELD HIMALAYAN



(37)

The Himalayan is Royal Enfield's first all new motorcycle in 50 years. It is also India's first purpose built adventure motorcycle. With its long travel suspension, natural riding position, low seat height, reliable and torquey engine, Himalayan is perfect for true offroading as well as city riding. It has been designed to be one's only motorcycle. It has been designed totally in India.

## Automotive design facilities in India

As India became one of the largest automotive markets in the world, the manufacturers started research, development and design centers in India. The following are some of the design studios/ facilities in India by manufacturers.

### TATA ELXSI, BANGALORE

Tata Elxsi (Electronics and System integration) is a design company and a part of the Tata Group. It was founded on 1989. Tata Elxsi concentrates in the communications, consumer products, defense, healthcare, media, and transportation sectors. This is backed by a network of design studios, development centers and offices worldwide. Tata Elxsi's headquarters in Bangalore, India. They also have a design studio in Pune.

### RENAULT DESIGN STUDIO, MUMBAI

In February 2008, Renault-Nissan Alliance set up a manufacturing plant in Oragadam, Chennai. Renault Design India was the first ever vehicle design studio by a foreign manufacturer in India, was established in Mumbai in September 2008. It has taken part in major projects like Renault Kwid.

### GM DESIGN STUDIO, BANGALORE

In 2003, the GM opened its technical operations center in Bangalore, which included research and development and vehicle engineering works. The technical center was expanded to take care of purchasing, financial support services for General

Motors operations outside of India in 2006, vehicle engine and transmission design in 2007 and a vehicle design studio in 2007.

### MAHINDRA DESIGN STUDIO, MUMBAI

Inaugurated in 2015, the state of the art design studio of Mahindra is situated in M&M factory campus in Kandivili.

### HERO MOTOCORP DESIGN STUDIO, JAIPUR

Hero MotoCorp started its 'Global Centre of Innovation and Technology' in Jaipur, in 2016. It was built with an investment of Rs 850 crore. the facility includes state-of-the-art laboratories, test track, and design studios under one roof.

## Automotive design schools in India

the profession of transportation Design or Automotive Design is involved in the development of the appearance of automobiles by developing the visual appearance, considering technical feasibility with creativity to solve problems and creating the product concept. It also deals with the study of anything that is mobile. like Aircraft, Marine vessels etc. a transportation designer is the one who makes the future of the design of automobiles by proposing newer (and more efficient) ideas. The task of the design team is usually belonging to these three main segments: exterior, interior, and color and trim design. These are some of the most important colleges which offers automotive design courses.

### NID, AHAMMEDABAD

The National Institute of Design is internationally known as one of the first multi-disciplinary institutions in the field of design education and research. NID's transportation design course started on 2000, which is the first in India. This program aims to find and nurture highly creative individuals to solve the existing and future challenges accompanied with 'mobility', by improving relevant skills and knowledge. this program is process centric in nature. the course has a strong emphasis on environmental, social, economic and cultural aspects of transportation. The program sets off with understanding automobile aesthetics (exterior/interior), human factors, vehicle packaging, display & controls etc. and that too in a product level.

### IDC, IIT BOMBAY MUMBAI

The Mobility and vehicle design course in IDC started on 2010. IDC was set up in 1969 by the Government of India under Indian institute of technology Bombay. even if the automotive sector is facing problems like environmental issues, increasing population, congestion etc. the automotive companies are pushing the limits through design. and these studios require creative designers. The program aims to create professionals from creative individuals through careful nurturing. The studies concentrate on finding creative solutions to existing or future problems in the area of mobility/transportation. the program consists of personal projects which vary from personal to mass transports.

### MAEERS MIT – INSTITUTE OF DESIGN, PUNE

The Institute of Design at Maharashtra Academy of Engineering Education and Research offers Graduate and Post Graduate courses in Product Design and Transportation Design. The courses at MIT ID equip the learners with the knowledge and skills to become a professional Transportation designer. the exposure to latest Technologies, Composite materials, Aerodynamics, Fluid Dynamics, Automotive Modeling, Vehicle Packaging Design and Usage of Automotive Clay & FRP make the learners capable of creating newer transportation design and systems to improve mobility.

### DSK-ISD INDIA, PUNE

DSK-ISD (International School of Design) is the first international school of design in India in 2008. DSK offers courses in product, transportation and digital design.

Transportation design offers a large array of opportunities for the designers. There are VARIOUS MOBILITY options like two-wheelers, four wheelers, yacht, etc. At DSK-ISD, the students are exposed to these in the FIRST YEARS of the course. This let them to explore the various opportunities and then on the basis of their interest they can pursue the industry of THEIR CHOICE. THE COLLABORATION with INTERNATIONAL companies makes getting internships easier.

### DYP-DC

DYP-DC Centre for Automotive Research and Studies (DYP-DC College) is founded by DY Patil and Dilip Chhabria. The college offers undergraduate and postgraduate programs in Automobile Design. The demand for designers in India is rising in a rapid rate as the automobile industry in India is growing. The DYPDC Center for Automobile Research and Studies is dedicated to the purpose of Automobile Design and Research.

## Top automotive designers from India

As India becomes an important automotive market, almost all automotive giants are pouring in money into getting designers on board. The following are some of the most important automotive designers from India.

### PRATAP BOSE



(19) Pratap Bose is the design head of Tata Motors. A graduate from NID, and also has an MA from Royal College of Arts, UK. He worked in Piaggio, Italy, Mitsubishi and Daimler Chrysler before joining Tata. His important works include Tata Zest and Bolt.

### GIRISH WAGH



(14) As well as being the head of product development and planning of Tata Motors, Girish is also one of the most important automotive designers in India. He was in charge of developing the Tata Nano and Tata Ace. He made his presence felt in the field of designing through those masterpieces. Being a mechanical engineer by qualification, his designs give importance to feasibility and cost effectiveness.

### DILIP CHHABRIA



(16) Dilip Chhabria is probably the most famous Indian Automobile Designer. He is a graduate of Art Center College, Pasadena. After working at firms like GM, Kinetic, Premier etc., he started DC Designs, his own custom automotive design company. He recently launched India's first ever supercar, the DC Avanti. His other famous works include Mahindra REVA NXR, Aston Martin DB9 for James Bond movie etc.

## NARENDRA GHATE



(38)

Narendra Ghate is the Chief designer at Service design, Tata Elxsi. He is a product design graduate from IDC, IITB. He started his career at Tata Elxsi on 1997. He is an expert in product planning, automotive styling, graphics, detail and branding etc.

## AJAY SARAN SHARMA



(39)

Ajay is currently the assistant general manager, Design at Tata motors. He is a graduate of IIT Delhi, 1998. his core strengths include product planning, Design& development and product management. He had worked with Daewoo, Maruti Suzuki and Tata Motors.

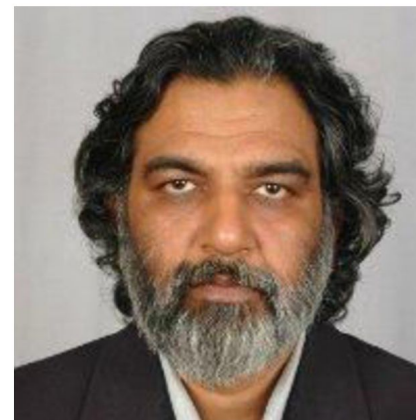
## BIDYABIJAY BHOUMICK



(40)

He is the senior vice president of Product development section at Mahindra and Mahindra. He is a graduate of IDC, IITB. He started his career at TELCO in 1972. He had worked with TELCO, Bajaj Auto, and Mahindra. He joined Mahindra in 1998. He led projects like Scorpio, Xylo, Tata Sumo etc.

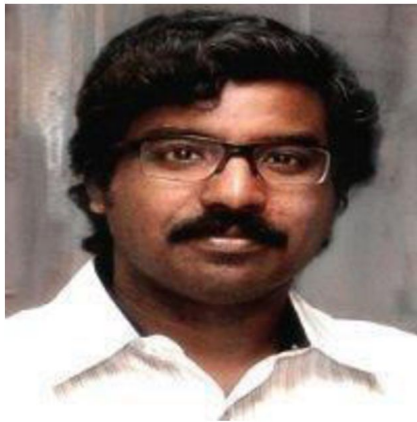
## ANIL SAINI



(41)

Anil Saini is the design Director at GM, Bangalore. He is a graduate from IDC, IITB. He is an expert in concept development, quality management, product development etc. He had worked at Bajaj Auto and PTC prior to joining GM.

## SIVAKUMAR. S



(18) The design head of Royal Enfield, Sivakumar is from Tamilnadu. He is a graduate from IDC, IIT Delhi in product design. He joined Royal Enfield after working in Hero Honda for few years. His works include Royal Enfield classic series.

## NILESH KIRTANE



Nilesh is the department head at styling design, Honda, Gurgaon. He is a graduate of NID in Industrial Design. He joined Honda R&D in 2005. His skills include Advanced design, User research, concept development, Market analysis etc.

(42)

## SATHIYA SEELAN



(17) Mr Sathiya Seelan Gangaasalam is the current design head of Ashok Leyland. He is a M.Des graduate from IIT Delhi. He has consulted and led automotive styling teams at Tata ELXSI, and GM before joining Ashok Leyland. Apart from working for the industry, he finds times to curate the young and

upcoming talents. His major designs include Ashok Leyland's Boss, Dost, Guru etc.

## RAMKRIPA ANANTHAN



The head of Design at Mahindra and Mahindra, Ramkripa is a graduate from IDC, IITB. She also did Mechanical Engineering from BITS, Pilani. Her major works include TUV 300, XUV 500

and KUV 100. She was a part in designing Bolero and Xylo also.

(9)

## MONEET CHITRODA



Based in Paris, France, Moneet is a senior designer at Renault Techno center. He is an NID graduate. He is the youngest senior designer in the Renault design group globally. His major design is the interiors of Renault Kwid. (10)

## RUSTOM MAZDA



Based in Turin, Italy, Mazda is a senior designer at Pininfarina. After Mahindra bought Pininfarina, he is one of the designers who worked on the TUV300. An NID graduate, Mazda was part of the Ferrari 458 Speciale design team. Mazda interned at the Renault Design studio in Mumbai

and Fiat Centro Stile in Italy. (12)

## LOV MEENA



Based in Gurgaon, Meena is a senior designer at Honda R&D India Pvt. Ltd. A graduate from NID, and then interned at TVS. He joined Honda in 2007 and has worked on several motorcycles. (11)

## HARISH KUMAR



Kumar is a creative designer with General Motors, Detroit. He moved to Detroit after working in GM's Bangalore studio. Kumar is the designer behind Chevrolet Essentia, a sedan that they unveiled at the Auto Expo. (13)



### ABHINAV VIDYARTHI

Abhinav is the lead of the trend research, senior industrial designer at hero MotoCorp, Gurgaon. He is a graduate from IDC, IITB in 2003. He is an expert in design skills and handling of full length automotive design projects.

### VIJAY JAISWAL

He is the senior manager – product development at Volvo Eicher commercial vehicles limited, Indore. He is a graduate from IIT Kanpur, in 2004. At VE, he led all the styling and branding activities from 2012 to 2016. His expertise are styling, cab architecture, geometric assurance, program management etc.

### BLESSEN PHILIP

Design manager at 3M India Limited. He is a graduate from Cochin University of Science and Technology. Prior to 3M, he worked as industrial designer in Hero global design.

### AKANKSHA SETHI

Akanksha is one of few female automobile designers in India. She is the design manager at Maruti Suzuki, Gurgaon. She is a bachelor of design graduate from National Institute of Fashion Technology. Prior to joining Maruti Suzuki, she had worked at Amrapali Jewels and Titian Industries.

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