

ASSOCIATION PROPOSAL



REDSHIFT RACING INDIA

K.J. SOMAIYA COLLEGE OF ENGINEERING, VIDYAVIHAR, MUMBAI



ABOUT THE TEAM:

- RedShift Racing India is the **official BAJA SAE Team** of K.J. Somaiya College of Engineering, Mumbai.
- RedShift Racing India was established in **2011**, by a group of off-road racing enthusiasts of KJSCE with the goal to represent INDIA and emerge victorious on foreign soil.
- Every year we **design, manufacture, test and race** an All Terrain Vehicle by making it **lighter, robust and more optimized** than the previous one.
- Being in such a team gives real world exposure to students by teaching them project and time management, soft skills, teamwork and essential engineering skills.



Team arriving for BAJA SAE, Indore 2021-22



Mega-ATV Championship, Goa 2021-22

≡ SEASON OVERVIEW:

•Goal:

To design, build and race off-road vehicles that can withstand the harsh elements of rough terrain.

•Static Events:

Before the manufacturing of the vehicle, we present meticulous **Cost Reports**, **Business Presentations** and **Design Evaluation Reports** required for the prototype.

•Dynamic Events:

After **proper scrutiny & inspection** from the Judges, the prototype is then physically tested in various events like: Hill climb, Sledge pull, Maneuverability, Rock crawl and Suspension & Traction event. Dynamic Events culminate with an **Endurance Race**, which is a **non-stop 4 hour circuit race** flagged off simultaneously for all the teams.

Certain well known competitions in which we participate over a season are:

- **BAJA SAE India**
- **Mega ATV Championship**
- **BAJA SAE International (USA, S.Africa)**



Mega **ATV**
championship
www.atvchampionship.com



In action at Mega ATV Goa 2022



After the completion of the team's most successful year

REDSHIFT RACING INDIA: ACHIEVEMENTS





SEASON 2021-2022

Building up on the results of the previous year, the team strived even harder in the latest edition of the BAJA SAE, Indore 21-22 and Mega ATV Championship 21-22 in Goa.

BAJA SAE, INDORE:

The BAJA SAE had 3 phases in total over a season:

1. Preliminary Round – **AIR 1**
2. Static and Virtual Dynamics- **AIR 11**
3. 4 Hour Endurance Race– **AIR 7**

The team achieved an **OVERALL RANK OF AIR - 7** amongst the **150+ teams** all over India that competed in Indore over the entirety of the season.

This was the **best ever finish** at BAJA SAE INDIA in RedShift Racing India's racing history.



BAJA SAE, Indore 2021-22



AIR 7 secured at BAJA SAE 2021-22

🏁 SEASON 2021-2022

MEGA ATV CHAMPIONSHIP, GOA:

On securing an all time best rank for the team, the group was even more motivated to perform at an exceptional level at Mega ATV, Goa to end the season on a high note.

In just under a month after BAJA SAE Indore, the team headed to Goa and achieved immensely exceptional results:

FLAT DIRT RACE: AIR-3

NIGHT ENDURANCE RACE: AIR-1

(A 4 hour non-stop race, in pitch black ;at night)

ARMAGEDDON RACE: AIR- 5

OVERALL RANK : AIR-2



*In Frame (L to R): Night Endurance trophy;
Overall Trophy; Flat Dirt Race trophy*



After winning the Night Endurance Race in Mega ATV Goa



Pratyush 4X4 with Mega ATV Trophies



REDSHIFT RACING INDIA: THROUGH THE YEARS

"Trust is built with Consistency"



2013

ONE OF THE PIONEERING CARS OF REDSHIFT RACING INDIA

PARTICIPATION FOR THE FIRST TIME IN A BAJA SAE EVENT.

2014

BAJA SAE,
SOUTH AFRICA

1ST – SALES
4TH – DESIGN EVALUATION

BEST SOCIAL TEAM
10TH -OVERALL

2015

BAJA SAE,
Indore

COMPLETED ALL STATIC AND DYNAMIC EVENTS

1ST ENDURANCE RACE AT INDORE

2016

BAJA SAE,
Indore

7TH MANUVERABILITY

6TH – COST

9TH – HILL CLIMB

2ND IN MUMBAI

2017

BAJA SAE,
Indore

9TH – ENDURANCE

15TH- ACCELERATION

1ST IN MUMBAI

11TH - OVERALL

2018

BAJA SAE OREGON,USA

6TH – BUSINESS PLAN

5TH AMONGST INDIAN TEAMS

23RD-OVERALL

2019

BAJA SAE,
Indore

9TH – DESIGN

1ST IN MUMBAI

Mega ATV , Goa

1ST – ACCELERATION

2020

BAJA SAE,
Indore

3RD- VIRTUALS

5TH-SALES

8TH- COST

9TH-ACCELERATION

REDSHIFT RACING INDIA: THROUGH THE YEARS

"Trust is built with Consistency"



Pratyush

Competition

- BAJA SAE INDIA 2022
- Mega ATV Championship

Achievements

- 1st Place - Preliminary Round
- 12th Place - Virtual All Terrain Performance
- 5th Place - Validation Event
- 8th Place - Virtual Maneuvrability
- 11th Place - Virtual Suspension and Traction
- 10th Place - Overall Virtual Dynamics
- 8th Place - Acceleration Event (Physical)
- 8th Place - 4 Hour Endurance Race (Physical)
- 8th Place - Overall in Baja SAE
- 1st Place - 4 Hour Night Endurance Race
- 3rd Place - Flat Dirt Race
- 5th Place - Armageddon (Suspension and Traction)
- 2nd Place - Overall in Mega ATV



ESTIMATED BUDGET 2022-23

PROPOSAL FOR MACHINING AND LOGISTICS

Registration & Logistics (Rs.9 Lakh)

- BAJA SAE India, BAJA SAE international, MegaATV



Major Cost Incurred

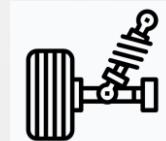
Chassis & Ergonomics (Rs.2 Lakh)

- Pipes for Roll Cage
- Safety Gears
- Driver Safety Equipment
- Fixtures and Machining



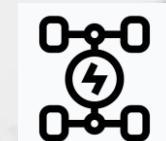
Data Acquisition (Rs.1.5 lakh)

- Sensors
- Driver display



Suspension & Steering (Rs 2 Lakhs)

- Springs
- Upright
- Hub
- Bearings



Drivetrain & Brakes (Rs2.5 Lakhs)

- Engine
- Custom CVT
- Chain Sprocket Assembly
- Custom Brake Calipers
- Brake Discs



Tyres & Rims (Rs 1.5 Lakhs)

TOTAL COST = Rs 18.5 Lakh

GOALS/INNOVATIONS FOR THE UPCOMING SEASON (2022-23)

GOALS:

- Aiming for All India Rank 1 at BAJA SAE ,Indore and Mega ATV Championship, Goa
- Finishing Top 10 at BAJA SAE ,Oregon, USA
- Self Manufactured and Improvised Transmission system for 4WD system
- Weight Reduction owing to the improved drivetrain system.
- Spring Rate Optimization
- Implementation of a **Data Logger** System in DAQ.
- Shifter mechanism to switch between 2WD and 4WD



Data Logger



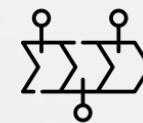
*Old and New -4WD Drive
For Representation Purpose only*



Front Wheel Assembly of 4WD Prototype



Front Differential Assembly



TIMELINE (2022-23)

APR		RECRUITMENT OF NEW MEMBERS-SCRUTINY QUIZ
JUN		PRIMARY DESIGN AND INNOVATION PHASE
JUL		STATIC EVENT PREPARATION
AUG		BAJA SAE INDIA PRELIMINARY ROUND AND DESIGN ANALYSIS
SEPT		DESIGN FINALISATION AND MANUFACTURING
OCT		MANUFACTURING COMPLETION
NOV-DEC		TESTING AND IMPROVISING THE VEHICLE
DEC-MAR		BAJA SAE INDIA , MEGA- ATV CHAMPIONSHIP
APR-JUN		TESTING , IMPROVISING , BAJA SAE INTERNATIONAL



PUBLIC EXPOSURE



Renowned Actor Manoj Bajpayee with the team



Ex-CM of Maharashtra
Shri. Devendra Fadnavis interacting with Team Members

EVENT	AUDIENCE	REACH/FOOTFALL
MET & HTS CIDCO EXHIBITION CENTER , NAVI MUMBAI	MANUFACTURERS, ENTREPRENEURS, INVESTORS, BUYERS & SELLERS	25,000+
DNA AUTO EXPO, CIDCO	MANUFACTURERS, AUTOMOTIVE ENTHUSIASTS, BUYERS & SELLERS	30,000+
MAKER MELA	STUDENTS, BUYERS & SELLERS, INNOVATORS FROM ALL OVER INDIA	50,000+
KVO FESTIVAL	INVESTORS, BUSINESSMEN, ENTREPRENEURS	20,000+
BAJA SAE INDIA	AUTOMOBILE INDUSTRIALISTS, ARAI, MAHINDRA, SPEED ETC. 250 TEAMS ALL OVER INDIA	25,000+
MEGA ATV	AUTOMOBILE INDUSTRIALISTS, 150 TEAMS ALL OVER INDIA, AUTOSPORTS,	10,000+
ABHIYANTRIKI (TECH FEST OF KJSCE)	STUDENTS, INNOVATORS	25,000+



PUBLIC EXPOSURE



*The Indian Army Officials at
KJSCE Abhiyantri ki*

DNA Auto Expo, Cidco Center





Brand Marketing Ideations (Vehicle)

Firewall of the Vehicle



Firewall

Bodyworks of the Vehicle



Bodyworks



Brand Marketing Ideations (Workshop)



Visual representation of the Redshift Racing India workshop



ASSOCIATION BENEFITS

- Company Logo on Flex, Team apparels and RSR merchandise.
- Publicity at all national & international events the team participates.
- Company Logo & Hyperlink on Team website
- Extensive publicity via Instagram, Facebook & YouTube with the team's huge reach on Social Media Platforms.
- Publicity at Autocars & Expos.
- Title/Co-powered at our lecture series, workshops & freshman induction programme.
- Media Exposure.
- Tax exemption under 80G (In India).
- Showcasing of the prototype at multiple events that the company organizes.
- Opportunity to support students engaged in learning through collective interests.
- Hands-on experience of our prototype.





Brand Marketing Ideations (Merchandise)

Team Merchandise





SPONSORS 2021-22



MOTUL



Godrej AEROSPACE



SCANTECH LASER



Somaiya
TRUST

ANSYS®



Malkar Industries

RSR
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