WHAT TO EXPECT AT BAJA THIS YEAR - Mr. Mukesh Tiwari

Starting with the theme of Zero Tolerance we worked on benchmarking the Indian teams with global standard in terms of the quality of design as well as the robustness of the buggy. Continuing with Dream, Dare and Drive with improved track difficulty year on year Baja is leading towards the goal of “Ground to Glory”.

The basic idea behind organizing two different events is to enhance the participation at the main event in good interest of automobile industry and giving more teams a chance to participate in the event. Even though with the participation of around 150-160 teams for the Indore event, there still are teams who given the chance, would have excel with their understanding and explore the possibilities of further development. Therefore the Baja Organizing committee felt that there is a need of coming up with a second event at a different location, and IIT Ropar openly helped us in extending and providing their land and facility to be used for the Baja event.

“IIT Ropar can be considered a new stance for Baja in India after a Decade by starting again at a new location.”

My expectations from the teams will be, the teams should make sure that their vehicle is ready in all respects and the vehicle should be ready for the Technical Evaluation starting from the 0th day. The new teams should take the benefit of the knowledge sharing through mega workshops, college level technical evaluation and the alumni allotted to them and take a defect free & completed vehicle to the Baja site. All the participating vehicles coming to main Baja must have endurance strength of at least 3 hours in endurance test. Irrespective of who is winning the event, but the number of teams finishing the race will be more satisfactory to me and to the organizing committee for the event as a whole.


The key to the performance begin well in advance before reaching the event site, the first step being the implementation of the Virtuals design into a manufactured roll cage keeping in mind the fits and tolerances through controlled jigs and fixtures.

It is advisable to have alumni’s to inspect and assist in rule book compliance, roll cage validation & design validation processes as their experience would help a team in bringing up a sound vehicle for the event. Testing phase is critical wherein teams can ensure practical validation by simulating event terrain through building up tracks, obstacles while ensuring complete safety in a controlled environment. Fuel economy is an aspect which teams can estimate during this phase for deciding their pit stop or fuelling strategy for the endurance race.

The team members should come up with specific individual leads within themselves for static and dynamic events. This ensures sharing of the responsibility and parallel work being carried out across the team within the same time frame. The vehicle should be pre-assembled and tech ready on zeroth day which is critical keeping in mind the activities lined up further. Check sheet of tasks against timeline would ensure time management throughout the event. Weighing the events with respective team’s strong points would help align to specifically perform better and try to the best of their abilities to score maximum across all events.

The cue is to establish and maintain a productive, collaborative team while developing your aim of reaching the podium. BAJA SAEINDIA wishes good luck to all the participating teams for the season and superior performance at the site.
The fast changing world of technology reflects in the changing patterns of media consumption and the preferred form of media consumption among the young, tech savvy generation is the Digital Media. BAJA SAEINDIA found its reach on digital media through their creative and ingenious social media pages on Facebook, Twitter and YouTube. Our ever increasing follower base currently stands at 2300+ on Twitter and 94,000+ on Facebook.

BAJA SAEINDIA organized two exemplary competitions this calendar year, ie. inQUIZitive & ADWIN.

**TWITTER - inQUIZitive**

Exclusively launched on Twitter, inQUIZitive is a bi-weekly quiz contest based on latest technical trends in the automotive industry. Team Stallions from Smt. Kashibai Navale College of Engineering, Pune and Mr. Arshad Ahmed Khan from Team Racetrack Raiders, Malaviya National Institute of Technology, Jaipur, were the winners of this event in their respective categories.

**FACEBOOK - ADWIN**

Launched with the aim to promote the creative skills of the teams, ADWIN has attracted huge responses from the teams. The participating teams had to make a 2 minute advertisement video for their vehicle using their own ideas and creativity to display the unique selling point of their buggy. Team E-Ziba Racers from Shri Vishnu College of Engineering took the honours in ADWIN and got their vehicle logistics sponsored from BAJA SAEINDIA.

**YOUTUBE - BAJA Inspire 3.0 Series**

BAJA Inspire 3.0 is the third edition of the YouTube series wherein BAJA Organizing Committee Members and Senior Static Evaluation Judges giveaway key points and regulations with respect to the preparations for the main event. We hope these quintessential videos continue to inspire the automotive youth and the teams to strive and perform at their best abilities during the event.

Stay tuned to the BAJA SAEINDIA Official Social Media pages for more innovative contests to be launched soon! We wish the teams all the very best for BAJA SAEINDIA 2018 Season.

#BAJASAEINDIA #GROUNDTOGlORY
BAJA SAEINDIA 2018 EVENT SCHEDULE

24th Jan
- mBAJA: BAJA HR Aptitude Test (BAT), Press Conference & Judges Meet
- eBAJA: Registration, Inauguration, Technical Evaluation, Go-Green event & Sales & Cost Evaluation

25th Jan
- mBAJA: Registration, Inauguration, Technical Evaluation, Go-Green event & Sales & Cost Evaluation
- eBAJA: Registration, Inauguration, Technical Evaluation & Sales & Cost Evaluation

26th Jan
- mBAJA: Technical Evaluation, Design Evaluation, Dynamic Events & Entertainment Night

27th Jan
- mBAJA: Technical Evaluation & Dynamic Events
- eBAJA: Endurance Run

28th Jan
- mBAJA: Endurance Run & Valedictory Function
- eBAJA: Valedictory Function

29th & 30th Jan
- mBAJA: Mahindra BAJA SAEINDIA 2018 HR meet
- eBAJA: Mahindra BAJA SAEINDIA 2018 HR meet

BAJA SAEINDIA 2018 DEMOGRAPHICS

- Total qualified: 221
- Not qualified: 41

Number of teams qualified for mBAJA

Teams participating in different event

BAJACME TEAM

Charu Goyal
Neel Patel
Akshay Kawale
Jatin Garg
Abheek Maiti
Manu Kamboj
Anshuman Goswami
1: What are the major areas that should be covered in Design report?

The Design Report should be crisp and thorough in covering topics like overall vehicle integration, Roll Cage and component CAE, choice of roll cage material and emphasis on driver ergonomics. Sub systems like drive train, suspension, steering and brakes should be covered in detail with proper calculations and validation. The judging panel consists of members from the core automotive industry with individuals having specializations in these sections, so it is expected from the teams to prepare the report accordingly to the suggested SAE template covering all the major points. CAE Analysis with stress levels, deflection & factor of safety achieved shall be clearly stated.

2: What are the necessary preparations that teams should do for Design Presentation?

The teams need to decide the members who shall be present during the presentation phase during the Design Evaluation. This should include captain, driver and those who have designed Roll Cage, suspension, steering & brakes. They should rehearse and practice efficiently for multiple attempts till confidence of the individuals and presentation content reaches the benchmark level. Ensuring all the topics are covered with design calculations, CAE reports should be kept along for verification purpose. FAQ's can be prepared and the presenting members should go through them before arrival to the event site. The teams can also form a internal judging panel consisting of their college professors and alumni, who can be a helping hand in rectifying the common mistakes at the college level itself, by going through a mock presentation round. Design Report, Innovation Report, DFMEA & DVP&R printouts can be brought by the team during evaluation.

3: What common mistakes do teams commit during Design Presentation and how can they be rectified?

Teams tend to focus on some topics more than the rest which should be avoided. Efficient time management and distribution of topics internally with multiple rehearsals can help them to perform better during the event. The inclusion of DFMEA and DVP is a must in the slides and every team member should share equal knowledge of the all the content which is being presented. The recommended action items of DFMEA should be carried forward to DVP activities. One should prepare a common question bank which can be asked by the judges and then revise them before the actual presentation. These measures should help all the aspiring teams to be one step ahead of the rest.

4: How have teams improved over the decade at Indian Baja?

In terms of design, we have seen teams improve on multiple aspects like roll cage optimization, design validation of subsystems like suspension, steering and brakes. The teams have come a long way around in terms of vehicle dynamics, which is evident in the endurance event, with better lap times being recorded every year, along with the track being made tougher. They are performing well in the dynamic events, which proves the worth of their design capabilities. The important aspect of manufacturability of components, assembly is being given more emphasis and covered during the pre-fabrication stage. The overall average weight of the vehicles is now varying from 125 to 300 kg, which was 300 to 575 kg when this event started in 2007. Similarly, acceleration has improved from 0.2 to 0.7 m/s² to 1.0 to 5.0 m/s². Our teams have started performing well at International BAJA events, where they have even finished in the Design finals with Top 3 positions. This makes BAJA SAEINDIA and our nation proud.
1. What are some common mistakes that the teams commit while making their cost report and how can they avoid them?

Few common mistakes which have been observed over the past years are as follows:
- Complete bill of materials not taken into consideration.
- Man-hours not calculated properly.
- Tampering with the format of the Cost Report.

2. Is the cost report just about the overall cost of the vehicle? What are the other factors that are evaluated in cost report presentation?

Cost report contains only the cost of vehicle but there is a very important parameter which is considered while evaluating the cost report. That parameter is Value Engineering. Value Engineering refers to the effective measures taken by the teams, to reduce the cost of the vehicle or any sub system, without compromising on the overall efficiency and safety of the vehicle.

3. What constitutes a good cost report?

A good cost report is one that includes detailing of each and every part used in the vehicle. It would have all the manufacturing processes considered as per the listed rates and all man-hours would be taken into account without any discrepancies.

4. Any tips and tricks to score well in the cost event?
- Don't manipulate the data for decreasing the cost.
- Make a structured and detailed Bill of Materials.
- Count and record the man-hours during the time of fabrication of vehicle rather than estimating it later.
- Print your excel sheets properly.
- Do not skip any manufacturing process.

TIPS FOR SALES EVENT

Dr. Mohan V. Uchgoankar
Deputy Director
& Head HR Mgt & Admin, ARAI

1. What are some common mistakes which teams commit during sales presentation and how can they avoid them?

Teams forget that the Panel Members are representing as investors who need to be convinced to invest in the project. It is not a technical presentation whereas they should be seen as a perspective buyer who would buy ATVs.

2. What is the importance of break-even point analysis and business plan?

We are here to teach students how to think like an entrepreneur. They should consider all investments, overheads and ensure surplus is made. They need to plan capital investment, tax laws, supplier base, logistics etc. It is most important to ensure targeted sales are achieved so that break-even point is reached in minimum duration.

3. Each team is trying to sell a business case for ATV vehicle. How to differentiate themselves from the competition? Insights on Unique Selling point.

Teams have to envisage the requirement of ATV considering its application, significance and pulse of the targeted group. Teams should also consider the geographical location. Focus on USP so that you get competitive advantage. You can better concentrate on product, price, publicity or mix of all.

4. Any tips and tricks to score well in the event?

Important tip would be: Teams should project with the realistic approach with logical thinking which could be more convincing for the perspective buyers as well as investors.
TIPS FOR TECHNICAL INSPECTION

Hello Teams! Congratulations and welcome to BAJA SAEINDIA 2018.

As BAJA SAEINDIA turns 11 this year, we expect even more fun, learning and enthusiasm from all of you. BAJA has always been a great platform for learning and as we grow, we surely expect much better performance each coming year.

As always, the first phase of the event, after registration, would be the Technical evaluation. For proper time management, it is expected of teams to reach Pithampur by 23rd January, for the Indore event. Teams are also advised to maintain a checklist of elements such as safety gears, purchase receipts, proofs of material testing, college level T.I. feedback (Feedback videos, if the mentor could not attend college physically) etc. All these things are to be checked and kept handy before any team proceeds for T.I. at the main event.

It usually happens that teams come to the event expecting that they’ll make modifications or changes during the event itself. This year, with a slight change in the evaluation process, Engine check, Weight check and Safety scrutiny are open in parallel, and also the weld pits will be allotted to only those teams who are going for the three stages of checks i.e. Roll cage inspection, Engine and complete vehicle level inspection and safety scrutiny. So it is necessary that the teams have their vehicles ready in all aspects well before the event. During the technical inspection, the teams should look forward to facilitate the judges with material strength and bending stiffness calculations, material certification and laboratory test certificates as well as vehicle measurements and UTM test samples for smooth flow of their evaluation process.

As it has been more than a decade now for BAJA, we expect impeccable time management from the teams. Teams should not only aim for the final endurance race, but also give equal importance to each and every event so as to obtain a competitive overall score. It is a must for all drivers to attend the track walk and plan or strategies accordingly for the endurance race. The drivers must have a game-plan and a clear picture of the track in mind before the final endurance race.

All teams should carry enough spares so as to deal with any failure without any loss of time. New teams are specially advised to watch teasers and videos of the previous years’ event so that they get a clearer view of BAJA events. It is advised to discuss with other participant teams about the event and problems generally faced. Apart from this, teams should be cautious at all times and put safety of the team and everyone around in the top priority.

I hope you have a great time ahead at BAJA SAEINDIA 2018 and we hope to see a much better performance this year from all the teams!

TIPS FOR DRIVER

1. What should be the strategy of the teams to approach the Dynamic events?

So once you are cleared from Tech and brakes you are free to go to any event. But you can plan as per the situation. There might be queue at different events. Also there will be events which might be difficult for your vehicle to do. So take a cautious call. A damaged vehicle before endurance is going to cost you 400 points. If I had to choose, I would rank acceleration as the most important as it gives me the pole position. So try and complete that.

2. How different will be this year’s endurance track as compared to previous years.

There will be lot of changes this year in the track. What will be those changes? That is still a surprise. The track is going be mostly a new surface this year, but will have the similar off-road characteristics and may be slightly tougher.

3. How should the driver approach various sections of dynamic events and endurance race track?

“Keep calm and drive in endurance” This is the mantra for endurance. There is a great old story, slow and steady wins the race. So you necessarily need not be slow, but be steady. In track walk and warm up lap understand the track and during the first few laps try and connect with the track, understand the free zones (where you can speed) and bottleneck zones where you can get stuck and damage your vehicle. Then in remaining laps you can drive well. Remember driver and vehicle safety is very important factor to win the race. So take care of both things at all points of race.
GO GREEN EVENT - Mr. Paresh Laddha

The main idea behind the Go Green event is to give a perspective about the after treatment systems, which are being used in the common world, to the young engineers. It encourages the teams to invent their own models based on novel chemistry and innovative overall design, not only for Baja but also for the actual implementation to the industry level.

The awareness of the teams regarding this event and the after treatment processes has increased over the years and we have seen substantial improvement in design year on year. The Indian industry as a whole, is matching the global footprints at a very fast pace with the introduction of various new norms by the government. This increases the importance of the Go Green event, especially because it sows the seeds of innovation within the younger generations at a nascent stage itself.

In order to be successful in the event, the teams should know what the pollutants are, what their levels are and how these pollutants have to be converted into harmless substances and to what extent. The teams should come prepared with a more innovative design and with fresh ideas in how they present their models, which will be subjected to an actual emission testing to understand the level of conversion achieved by their model. The actual model should be compatible to the industry requirements and the basic idea and a design which is robust enough so that, with proper nurturing, it can be translated to an actual production use.

The modern after treatment systems provide a conversion factor of above 90% in the market. The concepts and technology, with which the teams currently come up, provide a conversion factor in the range of 60-70%, which indicates that there is a vast scope for improvement.

I wish all the teams good luck for BAJA SAEINDIA 2018 and I hope to see some very Innovative designs this year.

IMPORTANCE OF INNOVATION IN BAJA

For more than a decade, BAJA SAE INDIA has been aiding the mobility industry with its vision to create resources of value to the nation. Every year, we perceive plethora of designs with splendid improvements in build quality, optimized weight reduction and revamped performance outputs, better than before. With the mobility industry advancing towards newer ways to solve challenges faced, it demands fresh ideas to come out from the generations to come.

One of the many myths about innovation is it’s all about novel/new products. These products although play an important role but this is not the entire picture. One can find ways not only to innovate in products but also in functions, logistics and other processes related. Ideas which make possible, effective implementation of team’s strategies and design concepts, prove to be building blocks of success, not only for the individuals and team but also for the industry.

Many of the teams do not innovate mainly because they think, Innovation is risky or they find it difficult to find ideas or they cannot measure the outcomes of it. However, idea generation is something which should become routine and methodical.

There are many possible ways for idea generation; some of the major steps include:

1. Defining-Define the problem you’re trying to solve.
2. Borrowing-Borrow ideas from places with a similar problem.
3. Combining-Connect and combine these borrowed ideas.
4. Incubating-Allow the combinations to incubate into a solution.
5. Judging-Identify the strength and weakness of the solution.
6. Enhancing-Eliminate weak points while enhancing strong ones.

Thus, Innovation is something which teams must inculcate in their daily routine to contribute in technology. Let us all together explore the mysteries of science and harness the power of technology and innovation.
GLIMPSE OF VIRTUAL BAJA SAEINDIA 2017