WHAT YOU KNOW IS NEVER ENOUGH

EDGELINE MOTORSPORTS

Everything of Motorsports

OCTOBER 2024

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BEYOND THE FINISH LINE:

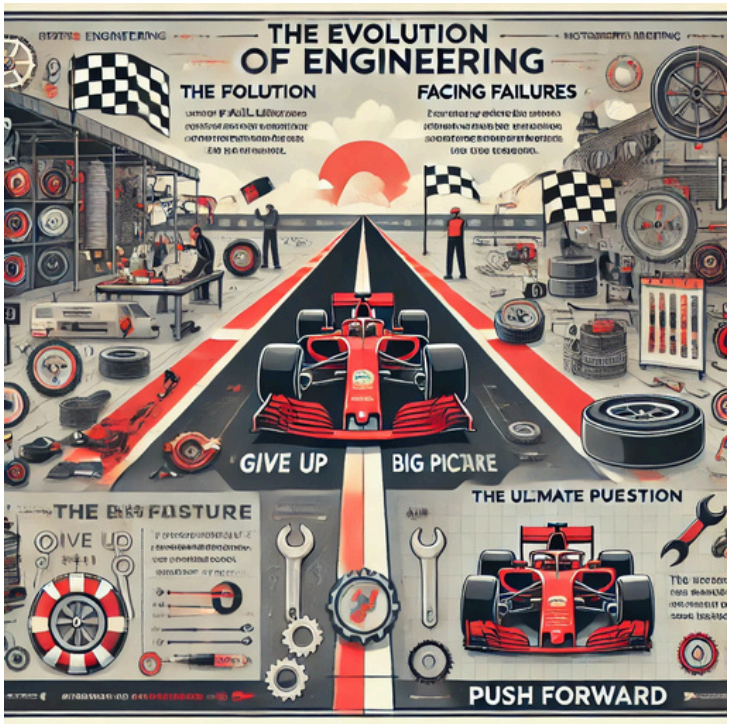
THE RELENTLESS DRIVE OF A MOTORSPORT ENGINEER

In recent editions, we discussed how engineering evolves and how motorsport can inspire you to break free from the monotony of work culture. In motorsports, you must be trained to endure long hours in the workshop, practicing and refining your engineering skills. You'll likely face multiple failures before achieving a working model. The drive that keeps you going is the vision of seeing your concept come to life.

Once the car you've built hits the road, there's no time to sit back and relax. A racing car is the culmination of many ideas from diverse minds. You can never be completely sure how well it will perform before the competition. You must prepare for worst-case scenarios, as even a single component might fail a day before the race.

The question is, what will you do as a motorsport engineer? Do you give up or keep pushing to get the car ready? Some might say "yes," but is the answer really that simple? The solution lies in the hard work and dedication you've put into building the car. With a tenacious mindset, even some last-minute repairs can be accomplished within hours.

Aniket Wavare
(Co-Founder of Wisdomatic Swarms LLP)

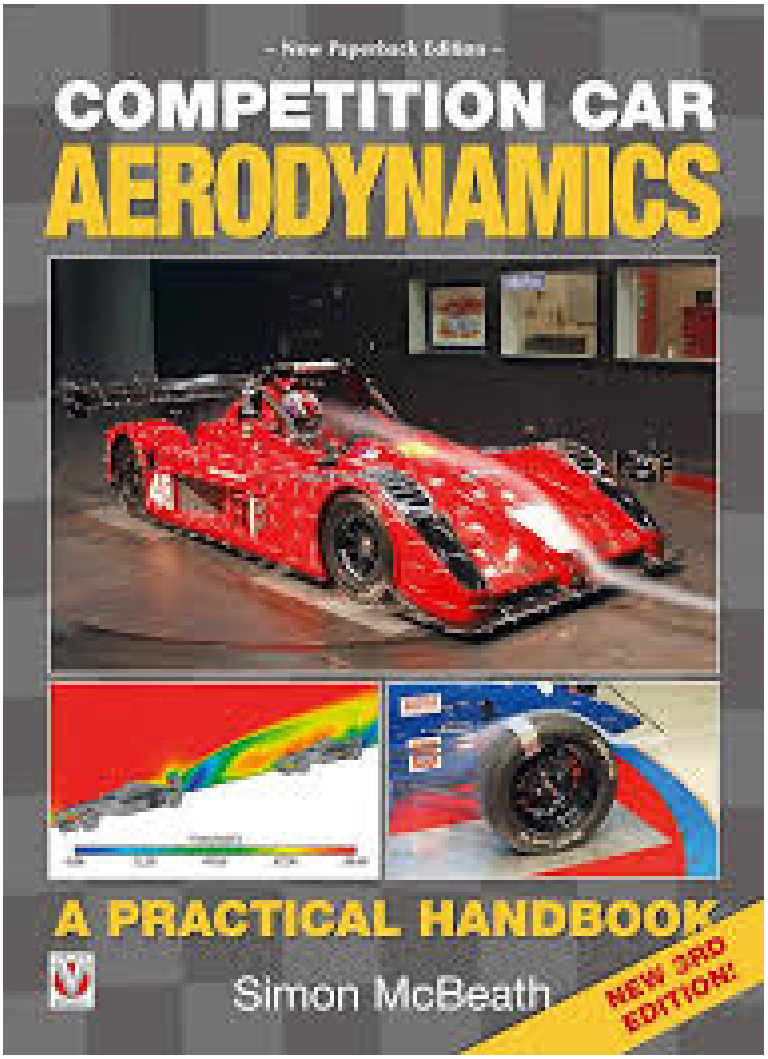


BOOK RECOMMENDATION FOR MOTORSPORT ENGINEERING STUDENTS

“COMPETITION CAR AERODYNAMICS" BY SIMON MCBEATH”

Why This Book Is Essential for Motorsports Engineering Students

"Competition Car Aerodynamics" is tailored to those who wish to grasp the impact of aerodynamics on competitive racing. Simon McBeath, an experienced motorsports consultant, breaks down complex topics, making it suitable for students new to the field while still offering in-depth content for those with more experience.



KEY SECTIONS TO FOCUS ON

1. Basics of Aerodynamics

The book opens with an introduction to fundamental aerodynamics principles, including drag, downforce, and the relationship between speed and airflow. By establishing these basics, McBeath makes it easy for students to understand how different forces impact car performance

2. Wings, Diffusers, and Splitters

A significant portion is dedicated to understanding the role of wings, diffusers, and splitters in creating downforce. McBeath offers guidance on designing these components and explains how each element contributes to maximizing grip and control.

3. Practical Applications in Motorsports

With real-world examples and illustrations, McBeath demonstrates how these principles are applied on the track. The book discusses adjustments made by Formula 1 teams and other racing professionals, offering insight into how top engineers use aerodynamic innovations to improve lap times.

4. Wind Tunnel Testing and CFD

For students interested in testing and simulation, McBeath provides an introduction to wind tunnel testing and computational fluid dynamics (CFD). This section helps students see the value of testing prototypes and refining designs to improve aerodynamic efficiency.

5.Case Studies and Examples

Featuring detailed case studies, McBeath illustrates how different racing teams and designers approach challenges. This practical approach allows students to learn from real successes and setbacks in motorsports.

Why Students Should Read This Book

Competition Car Aerodynamics is more than just a theoretical guide—it’s a toolkit for understanding and applying aerodynamics in motorsports. For students involved in competitions like the Edgeline Go-Kart Championship, this book offers strategies that can be directly applied to kart design, giving teams an edge on the track. With practical illustrations and expert insights, it's a must-read for anyone serious about a career in motorsports engineering.

Whether you’re interested in Formula 1, go-karting, or automotive design, Competition Car Aerodynamics will build your technical understanding and give you a foundation for developing innovative aerodynamic solutions.

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EDGELINE GO-KART CHAMPIONSHIP

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MOU SIGNED WITH AJEENKYA DY PATIL SCHOOL OF ENGINEERING,LOHEGAON,PUNE TO IGNITE MOTORSPORTS INNOVATION"

We are excited to announce that an MOU has been signed between Ajeenkya DY Patil School of Engineering, Lohegaon, Pune, and Wisdomatic Swarms LLP to co-organize the Edgeline Go-Kart Championship

Special thanks go to Dr. Kamaljeet Kaur (Director), Dr. F.B. Sayyad (Principal), and Mr. Dipak Shelke (Assistant Professor) of Ajeenkya DY Patil School of Engineering, Lohegaon, Pune for their invaluable support and contributions in turning this vision into reality.

This partnership aims to provide engineering students with hands-on experience and competition in the world of motorsports.
Stay tuned for more updates on this thrilling event!

EDGELINE GO-KART CHAMPIONSHIP QUIZ: THE HISTORY OF GO-KARTING

Why not turn this into a team challenge? Gather your go-kart team members and see who knows the most about the fascinating history of go-karting! With questions that cover everything from go-karting pioneers to iconic tracks, this quiz is a fun way to test your team's motorsports knowledge.
Make it competitive—award points, tally scores, and crown the team's Motorsports Expert! Perfect for team-building or a quick knowledge test before hitting the track. 🏁

1. Who is credited with inventing the first go-kart?
a) Enzo Ferrari
b) Art Ingels
c) Ayrton Senna
d) Henry Ford
Answer: b) Art Ingels

2. In which year was the first go-kart created?
a) 1956
b) 1960
c) 1972
d) 1948
Answer: a) 1956

3. The first go-kart was powered by which type of engine?
a) Electric motor
b) Lawnmower engine
c) Motorcycle engine
d) Car engine
Answer: b) Lawnmower engine

4. Where was the first go-kart race held?
a) Los Angeles, USA
b) London, UK
c) Tokyo, Japan
d) New Delhi, India
Answer: a) Los Angeles, USA

EDGELINE GO-KART CHAMPIONSHIP QUIZ: THE HISTORY OF GO-KARTING

5. Which company was one of the first to commercially produce go-karts?
a) Goodyear
b) Bug Engineering
c) Ferrari
d) Yamaha
Answer: b) Bug Engineering

6. When did go-karting first become popular in India?
a) 1975
b) 1985
c) 1995
d) 2000
Answer: c) 1995

7. Which is the most famous go-karting track in India?
a) Kari Motor Speedway
b) Buddh International Circuit
c) Meco Kartopia
d) Madras Motor Race Track
Answer: c) Meco Kartopia

8. Which country is home to the first-ever go-karting world championship?
a) Brazil
b) Italy
c) USA
d) Germany
Answer: c) USA

9. In which year was the first CIK-FIA Karting World Championship held?
a) 1964
b) 1978
c) 1983
d) 1990
Answer: a) 1964

EDGELINE GO-KART CHAMPIONSHIP QUIZ: THE HISTORY OF GO-KARTING

10. What is a typical maximum speed for a racing go-kart?
a) 40 km/h
b) 60 km/h
c) 120 km/h
d) 160 km/h
Answer: c) 120 km/h

11. Which F1 drivers started their careers in go-karting?
a) Lewis Hamilton
b) Michael Schumacher
c) Sebastian Vettel
d) Fernando Alonso
Answer: a) Lewis Hamilton, b) Michael Schumacher, c) Sebastian Vettel, d) Fernando Alonso

Test your score:

- 10-11: Motorsports Mastermind! 🏆
- 08-09 Go-Kart Guru! 🥇
- 06-07: Racing Fanatic 🏁
- 5 or below: Track Newbie 👶

THE WOODEN PLANK IN FORMULA 1 : SPARKS, SPEED, AND SAFETY

Formula 1 cars are marvels of engineering, pushing the boundaries of speed and aerodynamics. Among these precision-built components is a less glamorous yet crucial piece—the wooden plank, or skid block, which runs along the underside of each F1 car. Often the source of those iconic sparks flying from the back of cars at high speed, the skid block has an essential role in car performance, safety, and engineering integrity.

In this article, we dive deep into why the wooden plank is a cornerstone of F1 design, exploring how it controls speed, manages aerodynamics, and ensures driver safety, all while creating a captivating show for fans worldwide.

What is the Wooden Plank?

Located along the underside of a Formula 1 car, the wooden plank spans from the front to the rear, positioned directly under the car's central floor. While the name "wooden plank" might sound simplistic, its function is anything but. The plank is made from Jabroc, a durable wood composite renowned for its wear resistance and strength. Despite being unseen, it undergoes extreme conditions as the car navigates tracks at over 200 mph.

Why Was the Wooden Plank Introduced?

The plank was introduced in 1994 as part of the FIA's safety regulations. This decision followed the tragic accident of Ayrton Senna, which spurred the FIA (Fédération Internationale de l'Automobile) to re-evaluate safety measures in the sport. By enforcing a minimum ride height and introducing the wooden plank, the FIA aimed to reduce downforce and prevent cars from running dangerously low, protecting drivers from losing control.

THE WOODEN PLANK IN FORMULA 1 : SPARKS, SPEED, AND SAFETY

The Plank's Role in Controlling Ride Height and Aerodynamics

At high speeds, F1 cars rely on carefully tuned aerodynamic design and ground effects to stay glued to the track. If a car gets too low to the ground, it risks creating too much suction between the car's floor and the track. This effect, while advantageous for downforce, can also lead to loss of control. The wooden plank's thickness ensures the car stays above a minimum height, preventing overly aggressive downforce from compromising stability.

Moreover, the plank must stay within a regulated thickness. If it wears down below the prescribed limit during a race, the car could be disqualified. Teams have to balance performance with plank preservation, as friction from the track slowly wears away at the wood.

How Does the Plank Create Sparks?

Embedded within the plank are titanium skid blocks, small but sturdy inserts that help preserve the plank from excessive wear. When a car's underside makes contact with the track surface—usually during high-speed sections, bumpy surfaces, or aggressive cornering—these titanium pieces briefly graze the ground, creating the dazzling sparks seen during night races or on circuits with undulating surfaces.

The sparks are more than just a spectacle; they serve as a clear indicator that the car is riding at the optimal height, with the skid blocks absorbing the impact rather than the wood, ensuring that the car isn't riding dangerously low. This balance between sparks and plank preservation is a visual cue that the car's setup is working as intended.

Engineering Challenges and Adjustments

The wooden plank adds unique engineering challenges that teams must consider when designing and setting up the car for each track. Here's how:

- Track Variation: Different tracks have varying surface abrasiveness, which can affect how quickly the plank wears down. Tracks with high-speed straights and sharp corners often require teams to make setup adjustments to avoid excessive plank wear.
- Suspension Tuning: Teams use suspension settings to control ride height and minimize plank wear. Higher suspension settings can reduce contact with the track but may also compromise the car's handling and speed.
- Data Monitoring: During a race, data from sensors on the plank and skid blocks help teams track the amount of wear and adjust strategy accordingly, especially on circuits with high kerb usage.

THE WOODEN PLANK IN FORMULA 1 : SPARKS, SPEED, AND SAFETY

The Plank's Lasting Legacy in F1

Since its introduction, the wooden plank has been a silent guardian, balancing the extreme performance demands of Formula 1 with crucial safety protocols. By enforcing minimum height requirements and preserving aerodynamic stability, it has reshaped car design, race strategy, and even the spectacle of F1 itself.

More Than Just a Safety Measure: The plank not only ensures that drivers race within safe aerodynamic limits but also enforces a sense of balance in design. Cars that are too low risk disqualification, meaning teams have to carefully calculate how low they can go while maintaining safety. This delicate line is what makes F1 engineering so thrilling—a combination of risk, restraint, and constant innovation.

A Reminder of F1's Unseen Heroes

While fans marvel at the sheer power and speed of Formula 1, it's the unseen elements—like the wooden plank—that ensure every race is not only fast but safe. Next time you see those sparks flying during a high-speed corner, remember it's not just a visual show but a testament to the engineering genius keeping the world's fastest sport safe and thrilling.

PARTICIPANT INTERVIEW

Interview with Nagendra B, Former Head of Team Operations and Electrical Head, Team Vector at Presidency University

NAGENDRA B

1. Education & Professional Journey

Q: Can you tell us about your educational background and current professional journey?

A: I am Nagendra B, a graduate from the School of Engineering at Presidency University in Bangalore. During my time there, I had the privilege of leading Team Vector, our motorsports club, as Head of Team Operations, as well as overseeing the electrical aspects of our projects.

Q: What sparked your interest in motorsports?

A: Motorsports is such an exciting world, combining speed, technology, and strategy. I've always been drawn to it—whether it's Formula 1, rally racing, or motocross. Each type of racing has its own appeal, and I love how the fans, like me, are captivated by the thrill of competition and the incredible engineering behind the vehicles.

Q: When did you begin your journey in motorsports?

A: My journey into motorsports started young. I remember watching my first race on TV and being completely captivated by the speed and excitement. Since then, I've followed various series from Formula 1 to MotoGP. The passion has only grown over the years, especially as I've learned more about the technical aspects behind these incredible machines.

2. Connection with Motorsports Events

Q: How do you stay connected with motorsports events?

A: I connect with motorsports events in several ways. Watching live races on TV or streaming platforms brings the adrenaline right to my living room, and I attend local races whenever I can. There's nothing like the atmosphere at the track, surrounded by fellow fans.

Q: What was your first motorsports event?

A: My first event was the Edgeline competition, and it was thrilling! I had a hand in fabricating our vehicle, working from the initial design through to the assembly. Being deeply involved in creating the kart was a special experience, and seeing it perform on the track was unforgettable.

PARTICIPANT INTERVIEW

Q: Did you face any challenges during the event? How did you overcome them?

A: Yes, we faced several challenges, especially with time management and funding. Time was tight, so we set clear deadlines and prioritized essential tasks. Sponsorship was another hurdle, but by reaching out to local businesses and using social media, we managed to gather enough support. We also had to balance our studies, so we made a structured schedule to handle both academics and our motorsports work. The experience was incredibly rewarding and taught us resilience and teamwork.

3. Experience of Working as a Team

Q: What was the first challenge your team encountered?

A: Team building was our initial challenge since everyone was new. We organized workshops and team-building activities to help members understand each other's strengths, allowing us to assign roles effectively. Managing finances and securing sponsorships was also difficult, but we developed skills in project presentation to attract sponsors.

Q: How did you balance academic commitments with team responsibilities?

A: Time management was key. I created a detailed schedule that balanced classes, studying, and team activities. I set achievable goals for both academics and motorsports, stayed flexible with changes, and made the most of downtime for quick reviews or planning.

Q: Could you share a moment of failure and what you learned from it?

A: Our first major failure came during the brake test, which led to disqualification. It was disappointing but became a pivotal lesson on the importance of thorough testing and prioritizing safety. This experience pushed us to regroup, improve, and come back stronger, with a renewed focus on quality and resilience.

Q: How did it feel when your team won for the first time?

A: Winning for the first time was exhilarating! It was a huge achievement, especially competing far from home in Pune. The victory felt like a true reward for all our hard work, and celebrating together made it an unforgettable moment.

PARTICIPANT INTERVIEW

Q: How does your team handle knowledge transfer for new members?

A: We document our processes, organize workshops, and assign mentors for the new team members. This includes insights from our experiences, helping the new team integrate with our established strategies. Follow-up meetings allow for continuous feedback and improvement, ensuring our legacy and practices carry forward.

4. Challenges and Highlights

Q: How do you manage team recruitment?

A: We use multiple approaches, including posters, social media campaigns, collaborations with other campus clubs, and information sessions. Word of mouth is also highly effective, as current members encourage friends to join.

Q: How important is funding and sponsorship for your team?

A: Funding is crucial. It provides for equipment, travel, and training, allowing us to compete effectively. Sponsorship also brings visibility and credibility, making it easier to recruit talent and attract community support. It's essential for sustainability and growth.

Q: Could you share a significant moment that stands out in your journey?

A: Securing our first podium finish was a major highlight. After all the late nights and hard work, standing on that podium as a team was a moment of pride and celebration.

Thank you, Nagendra, for sharing your inspiring journey and insights with us! Your dedication to motorsports and teamwork shines through, and we're sure it will motivate many aspiring engineers and motorsports enthusiasts.

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