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THE MAGAZINE FOR IDEA PEOPLE >

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March 2013

Volume 29 Issue 3

\$3.95

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In my former life, I was involved with college and professional sports, the automotive industry and over 15 years with NASCAR publishing. Many people may believe that NASCAR's a sport where cars go in circles for a few hours and then it's over. I readily admit, I thought the exact same thing when I started publishing NASCAR magazines and books. If asked, I could identify only 2 drivers and had no idea what was happening with any intelligence.

I'm a fan of all sports, but not just to watch who wins or loses. I want to know how they won or lost. It's great watching an 80 yard pass, but I like to see how the play was designed to have ultimate success. Did the defensive back fall down, did they design the play with 2nd receiver pulling the safety away, etc. It's not just the play, but how the play worked that interests me.

The first NASCAR race I attended was the Daytona 500. Luckily a sympathetic NASCAR employee sat with me and explained the details, the technology, the engineering, the innovation, the strategy, etc. Who knew so much went into preparing for that one race? I was fascinated to learn each race team employs dozens of engineers just to keep pace.

## **I became an overnight fan.**

Several months ago I learned about the new Air Titan System and how it came to fruition. It's the latest foray into innovation introduced by NASCAR. It was born from a desire to solve an issue that in hindsight, it's hard to believe it hasn't been thought of before. Dry the racetrack in half the time. It's that simple.

Inventors are curious by nature and born problem solvers. They don't necessarily need to fully understand why the cars are going in circles, but you surely can recognize the value of how to make them go faster, safer and more efficient.

NASCAR has a great story. As the grandson of the founder and as the CEO, there is no better individual to grasp the needs of the teams and the drivers than Brian France. He is the lightning rod behind R&D at NASCAR and understands the need to invent new designs and products on a daily basis. What a unique opportunity for inventors.

Happy springtime everyone,

**Mark R. Cantey**  
**VP & Associate Publisher**





**Q&A FOR BRIAN FRANCE**

NASCAR frequently falls victim to a common misconception when the inexperienced person takes a look at it. They often have the impression that the teams are just a handful of ex-moonshine families modifying the family car in the garage and taking it to the local racetrack. It couldn't be farther from the truth. The NASCAR Sprint Cup Series features some of the world's most state-of-the-art vehicles, engineering and technology.

New inventions and innovation take place on a yearly, monthly and sometimes daily basis to keep pace with the ever evolving times. The new technology has improved or modified every aspect of the racing industry since its conception in 1948.

Brian France is the CEO and Chairman of NASCAR and works diligently with the race teams and NASCAR's R&D Center in Concord, North Carolina. We recently sat down with Brian to talk about the gains NASCAR has made over the years and what he has in store for the future.

### **What is driving NASCAR's constant evolution and current innovation?**

NASCAR, more than any other sport, is constantly reinventing itself. In 2009, we embarked on what arguably is the most comprehensive strategic research initiative ever undertaken by a sports league. Based on findings and resulting recommendations of this independent study, we have taken bold, transformative steps that required, in some cases, major capital investments. One example was the development and implementation of a Five-Year Industry Action Plan designed to position the sport for future growth. The plan has seven planks built around NASCAR leading its complex ecosystem "from the front." While there were many areas where immediate actions were taken, 2013 represents the launching point for many of the technology platforms designated in NASCAR's five-year plan. The vision of our plan from its inception was to implement action items in a phased approach that allows NASCAR to lead from the front, continually monitor the impact of changes and to make necessary adjustments along the way.

### **What are the first steps you've taken in creating the "new" NASCAR?**

I believe the introduction of the Gen-6 racecar was a seminal moment in our sport, but we've also been fortunate to recently launch several other key initiatives and technologies. Early last year we restructured our digital rights relationship with Turner Broadcasting, which allowed NASCAR to launch a redesigned website this January that showcases a suite of digital assets including tablet-based content designed to have the same look and feel across a range of devices. I believe our NASCAR Green platform is another great example of the "new" NASCAR. Since launching in 2008, NASCAR has become the sports sustainability leader. Beginning with the validations of Sunoco Green E15 as a safe, high-performance fuel that reduces greenhouse gas emissions, NASCAR has become a proving ground for several Green technologies. We have the largest recycling program in sports, a massive tree planting program and the largest renewable energy project at any sports facility by more than two times.

### **How has the Gen-6 car performed so far? Has it**

### **met your expectations?**

The Gen-6 car is off to a great start. We've already seen record speeds on most of the tracks we've visited and the racing product has been promising. We spent more time in the wind tunnel, on the track, and performing simulated tests with the Gen-6 car than we've ever done before, certainly more than the previous car. The Gen-6 car puts the "stock back into the stock car," returning to the roots of our sport where competitors turned streetcars into racecars. We feel the unique body design of each car will energize the fan base, reignite rivalries between auto manufacturers both on and off the track, and re-install the manufacturer credo: "Win on Sunday, Sell on Monday."

### **What can you tell me about the development of the Fan and Media Engagement Center?**

The Fan and Media Engagement Center ("FMEC") is a revolutionary resource that allows NASCAR to analyze what's discussed and written about the sport in social, traditional and broadcast media. The facility is part "broadcast control room," part "NASA Command Center," powered by a sophisticated media monitoring and measurement system custom-built by HP.

### **Where did the idea come from?**

This was a vision I had several years ago - to have a resource that NASCAR and the industry could tap into. NASCAR has a strong history of connecting with our fans and the engagement center is the next evolution. It's testament to our commitment to be driven to innovate. It was built exclusively for the unique model of our business in order to listen, engage, inform and respond to all forms of key media. With this system, we can improve the way we engage with fans, as well as provide business-impacting information to our industry partners.

### **What role did HP play in the development process?**

NASCAR's collaboration with HP has been underway for well over a year. From the beginning of the relationship, HP's consulting team participated in multiple interviews with internal NASCAR stakeholders to learn more about the goals and purpose of the FMEC system and provided counsel on a development roadmap. HP also provided the



development resources, front end hardware and back-end servers – a true end-to-end solution. Our relationship with HP continues to be close. Together we participate in weekly check-ins to keep each other informed of how the system is functioning, brainstorm future functionality, and continue to refine the system.

### **What new technologies can NASCAR fans realistically expect to see in the coming years?**

With redefined roles at our state-of-the-art R&D Center, NASCAR's best and brightest are collaborating to produce fresh concepts that include game-changing track-drying technology, digital dashboards and in-car camera technology.

### **Who would you like to see NASCAR partner with for future technology projects? What type of projects?**

We are in constant dialogue with best-in-class technology companies that can help elevate NASCAR as a leader in the innovation, technology and product relevance space. We'll continue to pursue relationships with companies that will position NASCAR as an innovative leader in the sport while broadening our vision and impact beyond competition. We're currently reaching out to best in class technology partners to assist us in the evolution of the Air Titan™ to make sure no stone is left unturned in our quest for faster drying solutions. Earlier this year, we realized that the air delivery source of the Air Titan™ needs more thought, especially in relation to its size. We're actively trying to minimize the power plant while deliver the same quantity and velocity of air to the Air Titan™ and continue work on solutions now en route to the next phase of development and cost containment. We also hope to identify a partner, or partners, to help with the development and implementation of a digital dashboard possibly as soon as the 2014 season. Our vision of the future digital dashboard is one that takes the traditional gauges found in a race car and transforms them into a flat panel digital display. We are also exploring opportunities to deliver live race data directly from the race car to the fans to create unprecedented experience.

### **What is the Air Titan™?**

The Air Titan™ is NASCAR's track-drying technology that was created entirely in house to dramatically improve track-drying time by reducing it by as much as 80 percent.

The R&D team took an advanced approach scientific approach during the production of the Air Titan™ by using compressed air to efficiently and reliably push water off of the racing surface.

### **Did NASCAR develop this technology in-house or did they use a third party?**

I'm proud to say that this technology was a development created internally by NASCAR at our R&D Center. This is a great example of the new direction and vision of our overhauled R&D center. No third party impacted the specific design and development of the technology surrounding the Air Titan™, but RingPower has been very helpful in providing the mobile compressed air power source.

### **Can you give us the general background on the NASCAR R&D Center?**

When we first opened the NASCAR R&D Center, the goal was to improve the overall safety, competition and cost containment of the sport. While we continue to work towards those goals, we are now driven to innovate, so the priorities and direction of this program has broadened its vision to impact the sport beyond the on-track competition. The first example of this is the role NASCAR R&D played in the development of the Gen-6 race car and the Air Titan™. I'm very proud of leadership in the wind tunnel, on the track, simulated tests and true innovation and collaboration with industry leaders throughout the development of both of these ground-breaking technological advances.

### **Why should people look at NASCAR as an innovative company?**

The Gen-6 race car, Air Titan™, digital dashboard and the Fan and Media Engagement Center are recent examples of how NASCAR continues to develop innovative solutions to create the best racing product in the world. The race car and track design have evolved almost every year since the inception of the sport in 1948, so we have a history of innovation. We'll continue to develop the competition areas of the sport, but we're now focusing additional resources towards creating innovative ways to enhance the fan experience, both at the track and at home watching on television. With endless growth opportunities, it's really an exciting time to be a part of NASCAR.



When NASCAR's premier series began racing on paved tracks, the sole method of drying asphalt was by running multiple vehicles – wreckers, pickup trucks and participants' cars – around the track to build the heat necessary to eliminate water. The lengthy process later was augmented and hastened to some degree by dragging tractor and heavy equipment tires, chained together, behind vehicles.

The so-called jet dryer came to NASCAR in 1976 after Roger Penske saw a construction crew using a jet engine to melt snow during a construction project at Michigan International Speedway and decided the process could be adapted for track drying. His director of facilities mounted a Westinghouse J34 jet engine in a frame and created an exhaust hood to direct the air flow downward. The unit initially was towed behind a vehicle and evolved into the truck-mounted dryer in use today at all NASCAR national series tracks.

Last year's Daytona 500 was the first in its storied history to be postponed to the following day due to rain. Although the primetime event saw record viewership, NASCAR wanted to find a way to drastically decrease the track drying process. Drying the track more effectively became a big opportunity for NASCAR, one that focused on enhancing the event experience for the fans in the stands and those watching on TV.

Over a timeline that encompassed the summer and early fall of 2012, NASCAR systematically reviewed the best ways to test ideas to look at water evaporation across a complex surface – the track. NASCAR's end result was the Air Titan™. The ultimate goal of this new patented technology is to reduce track-drying time by 80 percent and get back to racing much quicker following rain.

This is one of the first steps in NASCAR Chairman Brian France's vision to elevate NASCAR as a leader in the innovation, technology and product relevance space. The NASCAR R&D team took an advanced scientific approach during the production of Phase 1 of the Air Titan™. Using compressed air, the Air Titan™



# TITAN: NASCAR's Newest Innovation

efficiently and reliably pushes water off of the racing surface and onto the apron where vacuum trucks will remove the remainder of the moisture. Jet dryers will follow each Air Titan™, drying any excess water that remains on the racing surface

NASCAR drove every aspect of this development. The thought leadership and project leadership came from NASCAR's R&D team led by Shawn Rogers, managing director of business operations and competition; Mike Horton, manager of fabrication and prototype; Don Krueger, senior fabricator; and John Sutton, fabricator.

"As we continue to work on our chairman's 'stretch goals' – goals set beyond current expectations but are achievable by the team – we'll get better with each innovation cycle as it's completed," said Steve O'Donnell, senior vice president of racing operations at NASCAR.

NASCAR is still evaluating and testing the best ways to deploy the Air Titan™ if needed. The technical specs on numbers are still to be determined. Currently in Phase 1 of the project, there are three types of the Air Titan™ – a single Air Titan™ where the power unit is on the apron and six feet of the Air Titan™ is on the track. A triple Air Titan™ where an 18-foot power unit is a tractor trailer equipped with three compressors. NASCAR also have an in-line version, where a truck pulls a compressor, which in turn pulls an Air Titan™ for use on the apron and on the pit road.

Another benefit of the Air Titan™ is that it's capable of operating next to the SAFER barrier. Because of its nozzle, jet dryers create a "gap" of approximately 10 feet where they cannot reach. The Air Titan™ doesn't have that limitation. Also the jets are not capable of operating at full power in some areas due to damaging the infield grass, whereas the Air Titan™ doesn't have that issue.

As part of the Air Titan's™ testing process, NASCAR enlisted the expertise of the National Center for Asphalt Technology (NCAT) at Auburn, International Speedway Corporation's track construction group, Racing Surface Technologies and QualPro Inc. Additionally, Elgin Sweeper Company, Sullair and Ring Power CAT also provided equipment during the testing, and were part of the track-drying process at Daytona during Speedweeks.

"As we continue to develop the technology, we're also looking to partner and innovate with others." said O'Donnell. "Now we're in the process of refining the technology, conducting further testing and talking to our track partners about the process and future opportunities for the Air Titan™ at their venues."



The technology is still being developed – it's Phase 1. The experiments and tests NASCAR has conducted have been very encouraging. It's a complex task with many variables, but NASCAR seems excited about the results thus far with the goal of reducing the time it takes to dry the track.

NASCAR is constantly reaching out to best in class technology partners to assist in the evolution of the Air Titan™ to make sure no stone is left unturned in their quest for faster drying solutions. Earlier this year when the Air Titan™ was prepared for deployment at Daytona International Speedway during Speedweeks as well as standing by if needed for NASCAR's biggest event – the Daytona 500 – NASCAR learned that the power source – the air compressors – need more work, especially in relation to their size. NASCAR is actively working on ideas and solutions now en route to the next phase of development and cost containment.

"Our chairman Brian France has this sport as focused as ever on innovation and a solution to reduce drying time, driven by the ever-present desire to improve the racing product and fan experience in every form," said O'Donnell. "He's called for an increase in the innovation cycle and we're delivering on that."